

APPENDIX A: WATER

BUSINESS CASE EVALUATIONS



89 PROJECTS

29 FUTURE PLANNED
48 ACTIVE
5 PENDING CLOSEOUT
7 CLOSED



5-YEAR CIP

\$977 MILLION



10-YEAR OUTLOOK

\$1.89 BILLION



FOR MORE: SECTION 5

FIND THE ONE-PAGERS FOR
WATER PROJECTS SEE SECTION 5
IN THE CIP REPORT.

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

Project Status: Project Execution - 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)**



Representative Switchgear to be Replaced under CIP 111001

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 3/3/2010

Year Project Added to CIP: 2010

CIP Budget: Water

Project Jurisdiction: Saint Clair County

Lookup Location: Lake Huron WTP

Funds and Cost Center: Water - 5519-882111

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:** 79.60

Criteria Name	Score	Comment
Condition	5	Following condition assessments of pumps, motors, and switchgear, this value has been confirmed.
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	5	

Risk Committee Weighted Score: 79.70

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

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:	3/13/2020
Phase Status:	Project Execution	End Date:	10/3/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$471	\$94	\$94	\$47	\$47	\$0	\$0	\$0	\$35	\$82	\$176

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/13/2020	10/3/2029
Capital Delivery Salary	3/13/2020	10/3/2029
Contractual Professional Services	3/13/2020	10/3/2029
Other Capital Improvement Costs	3/13/2020	10/3/2029
Capitalized Interest	3/13/2020	10/3/2029

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

Phase: Design & Construction Assistance # 1 (1803769)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	3/13/2020
Phase Status:	Project Execution	End Date:	10/3/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (1803769)	\$4,891	\$1,803	\$1,803	\$1,535	\$1,552	\$0	\$0	\$0	\$0	\$1,552	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1803769)	3/13/2020	10/3/2029

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:	8/11/2023
Phase Status:	Future Planned Start	End Date:	10/3/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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 = 320 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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$64,027	\$0	\$0	\$0	\$0	\$0	\$0	\$4,478	\$4,478	\$48,774

Phase Dates

Activity Name	Start Date	End Date
Construction (1904449)	8/11/2023	10/3/2029

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$5,500	\$200	\$2,500	\$3,000	\$0	\$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	\$0	\$52,388
2020	\$19,631	\$0	\$0	\$0	\$401	\$1,611	\$3,169	\$4,450	\$10,000	\$32,757	\$0	\$0	\$52,388
2021	\$42,719	\$0	\$0	\$14	\$1,236	\$1,636	\$1,749	\$13,725	\$12,768	\$12,841	\$11,121	\$0	\$55,090
2022	\$37,084	\$0	\$0	\$14	\$198	\$1,992	\$1,962	\$4,581	\$8,866	\$10,838	\$10,838	\$11,489	\$57,178

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$69,390,430	\$1,897,571	\$1,582,277	\$1,600,000	\$0	\$0	\$0	\$4,513,460	\$6,113,461	\$48,951,355

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

Project Status: Closed

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)**



Mechanical Room - New WCHP and Boilers

Project Engineer/Manager: Brian VanHall

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:

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-potable uses.

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

Scoring**Project Manager Weighted Score:** 81.90

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

Risk Committee Weighted Score: 81.90

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

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

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	7/1/2017
Phase Status:	Active	End Date:	6/30/2020
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$135	\$135	\$135	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2017	6/30/2020
Capital Delivery Salary	7/1/2017	6/30/2020
Professional Services	7/1/2017	6/30/2020
Contractual Professional Services	7/1/2017	6/30/2020
Other Capital Improvement Costs	7/1/2017	6/30/2020
Capitalized Interest	7/1/2017	6/30/2020

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

Phase: Study & Design & Construction Assistance # 1 (CS-1732)

Phase Title: Study/Design/Construction Administration

Phase Budget:	Water	Start Date:	7/1/2017
Phase Status:	Active	End Date:	6/30/2020
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-1732)	\$793	\$774	\$774	\$18	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-1732)	7/1/2017	6/30/2020

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

Phase: Construction (Build) # 2 (CON-212, CON-182)

Phase Title: Construction Contract No. CON-212

Phase Budget:	Water	Start Date:	2/14/2018
Phase Status:	Active	End Date:	5/14/2020
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 2 (CON-212, CON-182)	\$7,808	\$7,808	\$7,808	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-212)	2/14/2018	5/14/2020
Construction (CON-182)	2/14/2018	6/30/2018

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$7,632	\$270	\$1,030	\$3,130	\$3,050	\$422	\$0	\$0	\$0	\$0	\$0	\$0	\$7,902
2019	\$7,552	\$309	\$781	\$3,666	\$3,873	\$13	\$0	\$0	\$0	\$0	\$0	\$0	\$8,642
2020	\$1,882	\$0	\$2,020	\$4,422	\$1,882	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,324
2021	\$41	\$0	\$0	\$6,991	\$1,972	\$41	\$0	\$0	\$0	\$0	\$0	\$0	\$9,004
2022	\$0	\$0	\$1,432	\$4,973	\$2,282	\$20	\$0	\$0	\$0	\$0	\$0	\$0	\$8,705

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$8,736,720	\$8,717,768	\$18,951	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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
 Contract has an O&M component. 7/29/2021 AC

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: Eric Kramp

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: 76.00

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	5	
Health and Safety	1	
Public Benefit	3	
Financial	2	Cost score increased by one as increased costs are being incurred by GLWA for "stop gap measures"
Efficiency and Innovation	3	

Risk Committee Weighted Score: 60.50

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

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:	12/20/2016
Phase Status:	Active	End Date:	12/3/2027
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$505	\$266	\$266	\$34	\$34	\$35	\$34	\$34	\$34	\$174	\$29

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/20/2016	12/3/2027
Capital Delivery Salary	12/20/2016	12/3/2027
Professional Services (CS-272 - 71020A.01)	8/17/2020	12/31/2020
Contractual Professional Services	12/20/2016	12/3/2027
Other Capital Improvement Costs	12/20/2016	12/3/2027
Capitalized Interest	12/20/2016	12/3/2027

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

Phase: Study & Design & Construction Assistance # 1 (CS-1771, CS-1499)

Phase Title: Study/Design/Construction Administration

Phase Budget:	Water	Start Date:	12/20/2016
Phase Status:	Active	End Date:	3/13/2027
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-1771, CS-1499)	\$1,007	\$1,007	\$1,007	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-1771)	12/20/2016	3/13/2027
Design/Engineering (CS-1499)	7/1/2017	6/29/2018

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: 9/20/2022
Phase Status:	End Date: 12/3/2027
Cost Allocation:	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$0.00

Phase Comments/Description:

Cost Est. Class: Class 5	Cost Est. Source: CS-1771, et al.
Cost Est. Date: 3/17/2020	Cost Est. Prepared By: TetraTech

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Future Design Build	\$24,428	\$0	\$0	\$32	\$565	\$924	\$3,455	\$6,865	\$6,865	\$18,675	\$5,720

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	9/20/2022	3/13/2027
Construction	3/28/2027	12/3/2027

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY26	FY27	Total
2018	\$24,530	\$100	\$600	\$12,150	\$11,780	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,630
2019	\$25,419	\$253	\$643	\$43	\$8,647	\$9,816	\$6,909	\$4	\$0	\$0	\$0	\$0	\$26,315
2020	\$9,999	\$0	\$735	\$55	\$3,333	\$3,333	\$3,333	\$0	\$0	\$0	\$0	\$0	\$10,789
2021	\$15,612	\$0	\$0	\$778	\$236	\$235	\$235	\$2,330	\$6,184	\$6,628	\$0	\$0	\$16,626
2022	\$15,501	\$0	\$286	\$43	\$744	\$215	\$5,196	\$5,222	\$5,082	\$1	\$0	\$0	\$16,789

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$25,941,340	\$1,273,880	\$67,460	\$600,000	\$960,000	\$3,490,000	\$6,900,000	\$6,900,000	\$18,850,000	\$5,750,000

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: Pending Closeout

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 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

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

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

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.

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

Scoring

Project Manager Weighted Score: 77.10

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

Risk Committee Weighted Score: 74.40

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

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:	9/1/2017
Phase Status:	Active	End Date:	12/1/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$105	\$105	\$105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/1/2017	12/1/2021
Capital Delivery Salary	9/1/2017	12/1/2021
Professional Services	9/1/2017	12/1/2021
Contractual Professional Services	9/1/2017	12/1/2021
Other Capital Improvement Costs	9/1/2017	12/1/2021
Capitalized Interest	9/1/2017	12/1/2021

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

Phase: Study & Design & Construction Assistance # 1 (CS-171)

Phase Title: Study, Design and Construction Administration

Phase Budget:	Water	Start Date:	9/1/2017
Phase Status:	Active	End Date:	12/1/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-171)	\$1,555	\$1,448	\$1,448	\$107	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-171)	9/1/2017	12/1/2021

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: 6/12/2019
Phase Status: Active	End Date: 10/8/2021
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22
Construction (Build) # 1	\$7,438	\$6,895	\$6,895	\$543

Phase Dates

Activity Name	Start Date	End Date
Construction (1803823)	6/12/2019	10/8/2021

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$7,133	\$50	\$920	\$6,163	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,133
2019	\$6,653	\$422	\$212	\$1,612	\$3,608	\$1,221	\$0	\$0	\$0	\$0	\$0	\$7,084
2020	\$9,321	\$284	\$194	\$4,660	\$4,661	\$0	\$0	\$0	\$0	\$0	\$0	\$9,799
2021	\$3,392	\$0	\$649	\$4,896	\$3,392	\$0	\$0	\$0	\$0	\$0	\$0	\$8,937
2022	\$184	\$275	\$356	\$5,257	\$3,109	\$184	\$0	\$0	\$0	\$0	\$0	\$9,181

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$9,098,977	\$8,448,408	\$650,569	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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: Brian VanHall

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: Lake Huron WTP

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:

N/A

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: 38.10

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

Risk Committee Weighted Score: 49.50

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

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:	1/30/2023
Phase Status:	Future Planned Start	End Date:	6/30/2024
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$81	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$81

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/30/2023	6/30/2024
Capital Delivery Salary	1/30/2023	6/30/2024
Contractual Professional Services	1/30/2023	6/30/2024
Other Capital Improvement Costs	1/30/2023	6/30/2024
Capitalized Interest	1/30/2023	6/30/2024

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

Phase: Design/Engineering

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

Phase Budget:	Water	Start Date:	1/30/2023
Phase Status:	Future Planned Start	End Date:	6/30/2024
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design/Engineering	\$775	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$775

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	1/30/2023	6/30/2024

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	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$0	\$0	\$0	\$0	\$300	\$0	\$0	\$0	\$300
2020	\$0	\$0	\$0	\$0	\$0	\$300	\$0	\$0	\$300
2021	\$0	\$0	\$0	\$0	\$0	\$0	\$1,299	\$0	\$1,299
2022	\$77	\$0	\$0	\$0	\$0	\$0	\$77	\$309	\$1,196

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Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$856,479	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$856,479

Description of CIP Changes:

Revised schedule and budget

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

Project Status: Project Execution - Design

CIP Type: Project

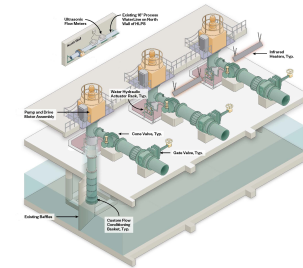
Class Lvl 1: Water

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)**



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:** 60.80

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

Risk Committee Weighted Score: 75.70

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

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: 8/5/2019
Phase Status: Active	End Date: 8/19/2024
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$327	\$179	\$179	\$46	\$46	\$46	\$8	\$0	\$0	\$101	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/26/2020	8/19/2024
Capital Delivery Salary	10/26/2020	8/19/2024
Professional Services (CS-272 - 71002A.01)	8/5/2019	8/19/2024
Contractual Professional Services	10/26/2020	8/19/2024
Other Capital Improvement Costs	10/26/2020	8/19/2024
Capitalized Interest	10/26/2020	8/19/2024

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:	10/26/2020
Phase Status:	Under Procurement	End Date:	8/19/2024
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	5 Year Total
Design-Build # 1	\$29,723	\$1,546	\$1,546	\$8,974	\$8,974	\$8,999	\$1,227	\$0	\$19,202

Phase Dates

Activity Name	Start Date	End Date
Design-Build (1803990)	10/26/2020	8/19/2024

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY26	FY27	Total
2020	\$26,090	\$16	\$9,030	\$10,030	\$7,030	\$0	\$0	\$0	\$0	\$0	\$26,106
2021	\$28,648	\$30	\$548	\$1,856	\$3,554	\$8,991	\$10,561	\$3,686	\$0	\$0	\$29,226
2022	\$29,724	\$30	\$86	\$640	\$1,061	\$7,060	\$7,583	\$7,021	\$7,000	\$0	\$30,481

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$30,050,890	\$1,726,062	\$9,021,432	\$9,021,435	\$9,046,149	\$1,235,812	\$0	\$0	\$19,303,396	\$0

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:** 76.30

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	4	Plant-performed condition analysis suggest filtration media below TSS
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 77.40

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

Project Title: Filtration Improvements

Phase: GLWA Salaries

Phase Title: GLWA PM Work

Phase Budget:	Water	Start Date:	6/30/2025
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$321	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$229

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/30/2025	6/30/2031
Capital Delivery Salary	6/30/2025	6/30/2031
Contractual Professional Services	6/30/2025	6/30/2031
Other Capital Improvement Costs	6/30/2025	6/30/2031
Capitalized Interest	6/30/2025	6/30/2031

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:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1	\$7,057	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,828

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	6/30/2025	6/30/2031

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:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Construction (Build) # 1	\$51,053	\$0	\$0	\$8,602

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2029	6/30/2031

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	FY27	Total
2021	\$60	\$12	\$48	\$5,572	\$0	\$5,632
2022	\$108	\$9	\$38	\$61	\$103	\$42,206

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$58,432,846	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,661,119

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: Project Execution - Design

CIP Type: Project

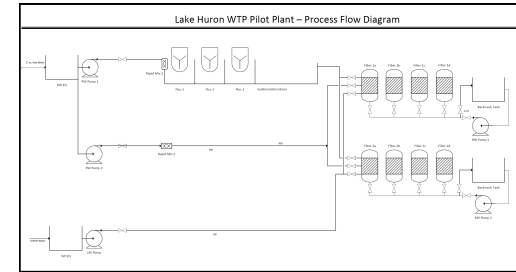
Class Lvl 1: Water

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:** 92.40

Criteria Name	Score	Comment
Condition	5	Existing pilot plant was already demo'd
Performance (Service Level/Reliability)	3	Potential to increase service level of full scale units based on testing here
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	5	
Health and Safety	3	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	3	

Risk Committee Weighted Score: 50.70

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

Project Title: Lake Huron WTP Pilot Plant

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	2/9/2021
Phase Status:	Future Planned Start	End Date:	7/27/2023
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	\$102	\$0	\$0	\$48	\$48	\$4	\$53

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/9/2021	7/27/2023
Capital Delivery Salary	2/9/2021	7/27/2023
Contractual Professional Services	2/9/2021	7/27/2023
Other Capital Improvement Costs	2/9/2021	7/27/2023
Capitalized Interest	2/9/2021	7/27/2023

Project Title: Lake Huron WTP Pilot Plant

Phase: Design-Build # 1 (1904449)

Phase Title: Design Build: Lake Huron WTP Pilot Plant

Phase Budget:	Water	Start Date:	6/30/2020
Phase Status:	Active - Procurement - Negotiation Phase	End Date:	7/27/2023
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY26	FY27	5 Year Total	FY28+
Design-Build # 1 (1904449)	\$3,220	\$198	\$198	\$1,457	\$1,457	\$107	\$0	\$0	\$1,564	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	2/9/2021	7/27/2023
Construction (WAS NOT IN CIP2022)	6/30/2020	6/30/2020

Project Title: Lake Huron WTP Pilot Plant

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

CIP	5 Year Total	FY21	FY22	FY23	FY26	FY27	Total
2021	\$0	\$0	\$0	\$0	\$1,794	\$0	\$1,794
2022	\$3,190	\$58	\$1,720	\$1,470	\$0	\$0	\$3,248

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Total Costs	Prior FYs	FY22	FY23	FY24	FY26	FY27	5 Year Total	FY28+
\$3,322,881	\$198,694	\$1,506,378	\$1,506,378	\$111,431	\$0	\$0	\$1,617,809	\$0

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 - 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:** 91.50

Criteria Name	Score	Comment
Condition	5	No Change from previous review
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	4	
Health and Safety	2	
Public Benefit	2	
Financial	2	
Efficiency and Innovation	4	

Risk Committee Weighted Score: 91.50

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

Project Title: LHWTP-Flocculation Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:
Start Date: 9/1/2021

Phase Status:
End Date: 1/12/2028

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$317	\$1	\$1	\$48	\$48	\$48	\$48	\$48	\$48	\$242	\$26

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/1/2021	1/12/2028
Capital Delivery Salary	9/1/2021	1/12/2028
Contractual Professional Services	9/1/2021	1/12/2028
Other Capital Improvement Costs	9/1/2021	1/12/2028
Capitalized Interest	9/1/2021	1/12/2028

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: 1/12/2028

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design & Construction Assistance	\$8,513	\$0	\$0	\$887	\$2,064	\$1,228	\$1,225	\$1,225	\$1,225	\$6,967	\$657

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	9/1/2021	1/12/2028

Project Title: LHWTP-Flocculation Improvements

Phase: Construction (Build)

Phase Title: Construction (Build)

Phase Budget:
Start Date: 12/26/2023

Phase Status:
End Date: 12/27/2027

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction (Build)	\$23,247	\$0	\$0	\$522	\$7,173	\$7,173	\$5,970	\$20,839	\$2,408

Phase Dates

Activity Name	Start Date	End Date
Construction	12/26/2023	12/27/2027

Project Title: LHWTP-Flocculation 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	FY26	FY27	Total
2022	\$17,426	\$46	\$538	\$469	\$5,563	\$5,428	\$5,428	\$5,065	\$26,537

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$32,078,606	\$1,057	\$936,167	\$2,112,585	\$1,799,197	\$8,446,845	\$8,446,846	\$7,243,708	\$28,049,182	\$3,092,199

Description of CIP Changes:

New Project to the CIP in FY23. 8/23/2021

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: Mike Graham

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 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

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

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:** 92.40

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

Risk Committee Weighted Score: 82.20

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

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

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	8/17/2020
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$648	\$223	\$223	\$48	\$22	\$22	\$94	\$0	\$0	\$139	\$237

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2023	6/30/2031
Capital Delivery Salary	7/1/2023	6/30/2031
Professional Services (CS-272 - 71018A.01 / 71023A.01)	8/17/2020	5/31/2022

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:	10/6/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1	\$5,280	\$0	\$0	\$94	\$943	\$3,389	\$852	\$0	\$0	\$5,185	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	1/1/2024	10/6/2026

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

Phase: Design/Engineering (RPR Services)

Phase Title: Design/Engineering (RPR Services)

Phase Budget: Water

Start Date: 10/7/2026

Phase Status:

End Date: 6/30/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY25	FY26	FY27	5 Year Total	FY28+
Design/Engineering (RPR Services)	\$2,493	\$0	\$0	\$0	\$357	\$356	\$0	\$0	\$714	\$1,778

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (RPR Services)	10/7/2026	6/30/2031

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:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$39,732	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$39,732

Phase Dates

Activity Name	Start Date	End Date
Construction	10/7/2026	6/30/2031

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

Phase: Construction (Electrical Service Change)

Phase Title: Construction (Electrical Service Change)

Phase Budget: Water

Start Date: 7/1/2023

Phase Status:

End Date: 10/1/2025

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Electrical Service Change)	\$13,959	\$0	\$0	\$33	\$11,229	\$2,696	\$0	\$0	\$13,959	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (Critical Electrical Service Changes)	7/1/2023	10/1/2025

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	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$0	\$0	\$0	\$0	\$62,265	\$0	\$0	\$0	\$62,265
2020	\$0	\$0	\$0	\$0	\$0	\$62,234	\$0	\$0	\$62,234
2021	\$3,651	\$0	\$0	\$40	\$1,228	\$2,383	\$53,914	\$0	\$57,565
2022	\$4,901	\$279	\$173	\$215	\$862	\$1,931	\$1,721	\$4,376	\$71,546

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$72,115,182	\$223,875	\$142,631	\$1,000,000	\$15,000,000	\$4,000,000	\$0	\$0	\$19,999,999	\$51,748,677

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

Project Status: Closed

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:

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: 93.80

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

Risk Committee Weighted Score: 76.80

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

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:	9/28/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$49	\$49	\$49	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/1/2019	9/28/2021
Capital Delivery Salary	2/1/2019	9/28/2021
Contractual Professional Services	2/1/2019	9/28/2021
Other Capital Improvement Costs	2/1/2019	9/28/2021
Capitalized Interest	2/1/2019	9/28/2021

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

Phase: Construction (Build) # 1 (CS-289, 1901036)

Phase Title: Construction

Phase Budget: Water	Start Date: 2/1/2019
Phase Status: Under Procurement	End Date: 9/28/2021
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (CS-289, 1901036)	\$888	\$888	\$888	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-289)	2/1/2019	6/30/2020
Construction (1901036)	1/6/2020	9/28/2021

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	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	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2020	\$813	\$166	\$647	\$0	\$0	\$0	\$0	\$0	\$0	\$813
2021	\$1,110	\$269	\$1,096	\$14	\$0	\$0	\$0	\$0	\$0	\$1,393
2022	\$5	\$425	\$645	\$5	\$0	\$0	\$0	\$0	\$0	\$1,089

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$937,879	\$937,879	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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: Grant Gartrell

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 Water Treatment Plant

Funds and Cost Center: Water - 5519-882111

Problem Statement:

The existing flocculators are not operable and are beyond repair, which reduces sedimentation effectiveness and creates a greater load on the filtration process. The State of Michigan Department of Environment, Great Lakes & Energy (EGLE) noted the condition of the existing flocculators at the Northeast Water Treatment Plant as a deficiency in ELGE's 2021 Northeast Water Treatment Plant Sanitary Survey, dated March 4, 2021.

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. Demolish and remove existing flocculators including drives, motors, shafts, paddle wheels, control panels, electrical service, and related appurtenances.
2. Install a complete, new flocculation system designed to current industry standards.
3. Construct new stairways and platforms to improve access to the flocculator drive galleries.

Other Important Info:

Existing flocculators are original to the plant (circa 1956) and are (1) not operable, (2) beyond repair, and (3) do not provide present day flocculation mixing energies. The new flocculation system is designed to current and best industry standards for flocculation mixing energies, tapered flocculation, and is conducive to easier operation and maintenance.

Primary Driver: 3 - Regulatory

Driver Explanation:

Michigan EGLE has identified the non-operational condition of the flocculation system at the Northeast Water Treatment Plant as a noted deficiency in its 2021 Sanitary Survey report of which the deficiency will not be lifted until flocculation is placed into satisfactory service.

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Scoring**Project Manager Weighted Score:** 93.00

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

Risk Committee Weighted Score: 82.40

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

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	8/12/2019
Phase Status:	Active	End Date:	6/3/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$457	\$254	\$254	\$0	\$40	\$40	\$40	\$40	\$40	\$202	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/3/2022	6/3/2026
Capital Delivery Salary	1/3/2022	6/3/2026
Professional Services (CS-272 - 71001A.01)	8/12/2019	6/3/2026
Contractual Professional Services	1/3/2022	6/3/2026
Other Capital Improvement Costs	1/3/2022	6/3/2026
Capitalized Interest	1/3/2022	6/3/2026

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	1/3/2022
Phase Status:	Future Planned Start	End Date:	6/3/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total
Construction (Build) # 1	\$13,597	\$0	\$0	\$0	\$2,719	\$2,719	\$2,719	\$2,719	\$2,719	\$13,597

Phase Dates

Activity Name	Start Date	End Date
Construction	1/3/2022	6/3/2026

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY24	FY25	FY26	FY27	Total
2020	\$2,715	\$3	\$1,356	\$1,356	\$3	\$0	\$0	\$0	\$0	\$0	\$2,718
2021	\$6,648	\$3	\$460	\$2,773	\$3,026	\$849	\$0	\$0	\$0	\$0	\$7,111
2022	\$11,075	\$3	\$183	\$55	\$2,522	\$3,022	\$3,022	\$2,509	\$0	\$0	\$11,316

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$14,054,450	\$254,450	\$0	\$2,760,000	\$2,760,000	\$2,760,000	\$2,760,000	\$2,760,000	\$13,800,000	\$0

Description of CIP Changes:

Updated primary driver from condition to regulatory. G.G.

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

Project Status: Closed

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: Terry Daniel

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: Southwest WTP

Funds and Cost Center: Water - 5519-882111

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:** 81.20

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	5	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	3	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	4	Scores carried over from 2021-2025 CIP
Public Benefit	4	Scores carried over from 2021-2025 CIP
Financial	2	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP

Risk Committee Weighted Score: 58.70

Criteria Name	Score	Comment
Condition	4	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	2	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	3	Scores carried over from 2021-2025 CIP
Operations and Maintenance	5	Scores carried over from 2021-2025 CIP
Health and Safety	2	Scores carried over from 2021-2025 CIP
Public Benefit	1	Scores carried over from 2021-2025 CIP
Financial	1	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP

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:	7/16/2017
Phase Status:	Active	End Date:	5/31/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$218	\$218	\$218	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/16/2017	5/31/2021
Capital Delivery Salary	7/16/2017	5/31/2021
Contractual Professional Services	7/16/2017	5/31/2021
Other Capital Improvement Costs	7/16/2017	5/31/2021
Capitalized Interest	7/16/2017	5/31/2021

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

Phase: Design & Construction Assistance # 1 (CS-034)

Phase Title: Design/Construction Administration

Phase Budget: Water	Start Date: 7/16/2017
Phase Status: Active	End Date: 5/31/2021
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-034)	\$653	\$653	\$653	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-034)	7/16/2017	5/31/2021

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:	10/1/2018
Phase Status:	Active	End Date:	5/31/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$4,926	\$4,926	\$4,926	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-281)	10/1/2018	5/31/2021

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$1,960	\$160	\$160	\$900	\$900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,120
2019	\$5,183	\$115	\$186	\$1,157	\$2,876	\$1,144	\$6	\$0	\$0	\$0	\$0	\$0	\$5,484
2020	\$4,026	\$0	\$249	\$1,157	\$2,876	\$1,144	\$6	\$0	\$0	\$0	\$0	\$0	\$5,432
2021	\$1,094	\$0	\$0	\$2,479	\$2,313	\$1,094	\$0	\$0	\$0	\$0	\$0	\$0	\$5,886
2022	\$1,433	\$0	\$155	\$2,230	\$2,888	\$23	\$501	\$649	\$283	\$0	\$0	\$0	\$6,728

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,798,924	\$5,798,924	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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: 52.40

Criteria Name	Score	Comment
Condition	4	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	3	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	2	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	2	Scores carried over from 2021-2025 CIP
Public Benefit	2	Scores carried over from 2021-2025 CIP
Financial	1	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

Risk Committee Weighted Score: 52.40

Criteria Name	Score	Comment
Condition	4	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	3	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	2	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	2	Scores carried over from 2021-2025 CIP
Public Benefit	2	Scores carried over from 2021-2025 CIP
Financial	1	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

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: 6/30/2031
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$137	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$137

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2028	6/30/2031
Capital Delivery Salary	7/1/2028	6/30/2031
Contractual Professional Services	7/1/2028	6/30/2031
Other Capital Improvement Costs	7/1/2028	6/30/2031
Capitalized Interest	7/1/2028	6/30/2031

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:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Design & Construction Assistance # 1	\$21,674	\$0	\$0	\$21,674

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2028	6/30/2031

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	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$0	\$0	\$0	\$2,940	\$0	\$0	\$0	\$0	\$2,940
2019	\$0	\$0	\$0	\$0	\$148,286	\$0	\$0	\$0	\$148,286
2020	\$0	\$0	\$0	\$0	\$0	\$148,286	\$0	\$0	\$148,286
2021	\$0	\$0	\$0	\$0	\$0	\$0	\$14,314	\$0	\$14,314
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20	\$21,812

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$21,811,953	\$110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$21,811,843

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 -
Board Approved - 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: Jacob
Mangum

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:** 90.60

Criteria Name	Score	Comment
Condition	4	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	4	
Operations and Maintenance	2	
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	
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:	6/29/2023
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	\$297	\$204	\$204	\$46	\$46	\$0	\$0	\$0	\$46

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/28/2020	6/29/2023
Capital Delivery Salary	1/28/2020	6/29/2023
Professional Services (CS-272 - 71011A.01)	1/28/2020	6/29/2023
Contractual Professional Services	1/28/2020	6/29/2023
Other Capital Improvement Costs	1/28/2020	6/29/2023
Capitalized Interest	1/28/2020	6/29/2023

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

Phase: Design/Engineering

Phase Title: Study

Phase Budget:

Start Date: 1/28/2020

Phase Status:

End Date: 9/16/2022

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	5 Year Total
Design/Engineering	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (Study)	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:	10/1/2021
Phase Status:	Future Planned Start	End Date:	6/29/2023
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	5 Year Total
Design-Build # 1	\$7,725	\$0	\$0	\$3,375	\$4,350	\$0	\$0	\$0	\$4,350

Phase Dates

Activity Name	Start Date	End Date
Design-Build	10/1/2021	6/29/2023

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY26	Total
2019	\$0	\$0	\$0	\$0	\$7,032	\$0	\$0	\$7,032
2020	\$0	\$0	\$0	\$0	\$0	\$7,032	\$0	\$7,032
2021	\$4,753	\$260	\$2,238	\$2,238	\$17	\$0	\$0	\$4,753
2022	\$6,956	\$245	\$4,683	\$1,595	\$557	\$78	\$42	\$7,331

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
\$8,023,492	\$204,126	\$3,421,783	\$4,397,583	\$0	\$0	\$0	\$4,397,583

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 offices.

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

Scoring**Project Manager Weighted Score:** 48.20

Criteria Name	Score	Comment
Condition	4	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	2	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	1	Scores carried over from 2021-2025 CIP
Operations and Maintenance	3	Scores carried over from 2021-2025 CIP
Health and Safety	1	Scores carried over from 2021-2025 CIP
Public Benefit	1	Scores carried over from 2021-2025 CIP
Financial	1	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

Risk Committee Weighted Score: 38.70

Criteria Name	Score	Comment
Condition	3	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	2	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	1	Scores carried over from 2021-2025 CIP
Operations and Maintenance	3	Scores carried over from 2021-2025 CIP
Health and Safety	1	Scores carried over from 2021-2025 CIP
Public Benefit	1	Scores carried over from 2021-2025 CIP
Financial	2	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

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

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	8/10/2029
Phase Status:	Future Planned Start	End Date:	8/3/2035
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY28+
GLWA Salaries	\$50	\$0	\$0	\$50

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/10/2029	8/3/2035
Capital Delivery Salary	8/10/2029	8/3/2035
Contractual Professional Services	8/10/2029	8/3/2035
Other Capital Improvement Costs	8/10/2029	8/3/2035
Capitalized Interest	8/10/2029	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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Design & Construction Assistance # 1	\$949	\$0	\$0	\$949

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	8/10/2029	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	Total
2019	\$37,336
2020	\$37,336
2021	\$98
2022	\$3,167

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Total Costs	Prior FYs	FY28+
\$1,000,112	\$0	\$1,000,112

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: SWP Reservoir Replacement

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)**



Reservoir No. 3, Access door cut into side of reservoir to perform work.

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: SWP

Funds and Cost Center: Water - 5519-882411

Problem Statement:

The three carbon steel 10 million gallon reservoirs at the SWP are 60 years old and coming to an end of their useful life.

Scope of Work/Project Alternatives:

Replace all three steel 10-Million-gallon reservoirs with preloaded circular concrete reservoirs similar to those currently being built at the West Service Center. One reservoir will be replaced in each low demand season over a three-year construction period starting in September of 2025. Refurbish the seals and add electric operators on eight 96-inch valves, Refurbish or replace two 48-inch valves. Remove lead paint from the main headers and operators and repaint. Install new overflow swales, sample stations, lighting, and regrade the site.

Other Important Info:

Project Delivery Method: Design-Bid-Build
Schedule: Start Design 2023, Start Construction: 2025 – 2029 Complete
Estimated Cost: \$45,000,000 (includes escalation through duration of project)
50-year projected cost to maintain existing reservoirs to store unquestionably high-quality drinking water is estimated to be \$58M as compared to install and maintain new concrete reservoirs over the same period of \$42M.

Primary Driver: 4 - O and M

Driver Explanation:

Under contract 1900744 the rehabilitation cost to reservoir #3 was \$3.6 Million. The next inspection and repair on this reservoir in five years will meet or exceed this cost. Under contract 1900744 the exterior of only reservoir No. 3 is painted and only the minimum structural and painting work was performed to meet the sanitary requirement of the reservoir. Painting steel tanks in the low demand season is expensive due to the challenges in coating steel tanks during the GLWA low demand season in the winter months. Major repairs inside the reservoir require that a

Project Title: SWP Reservoir Replacement

large hole is cut into the 1-inch-thick steel plate side wall that needs to be carefully rewelded. Each time this is done it distorts the shell of the reservoir. All these factors combined create an undesirable cost condition for the long-term maintenance of these steel reservoirs.

Project Title: SWP Reservoir Replacement

Scoring**Project Manager Weighted Score:** 91.30

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

Risk Committee Weighted Score: 75.60

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

Project Title: SWP Reservoir Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 9/15/2023

Phase Status:

End Date: 6/1/2029

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$275	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$228

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/15/2023	6/1/2029
Capital Delivery Salary	9/15/2023	6/1/2029

Project Title: SWP Reservoir Replacement

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 9/15/2023

Phase Status:

End Date: 6/1/2029

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design/Engineering	\$4,866	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,018

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	9/15/2023	6/1/2029

Project Title: SWP Reservoir Replacement

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 9/15/2025

Phase Status:
End Date: 6/1/2029

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY26	FY27	5 Year Total	FY28+
Construction	\$39,858	\$0	\$0	\$0	\$0	\$0	\$30,036

Phase Dates

Activity Name	Start Date	End Date
Construction	9/15/2025	6/1/2029
Construction Material / Equipment Purchase	9/15/2025	6/1/2029

Project Title: SWP Reservoir Replacement

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

CIP

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Total Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$45,000,001	\$0	\$0	\$0	\$0	\$0	\$0	\$34,283,513

Description of CIP Changes:

New Project added to the CIP for FY 2023-2027 7/27/2021 AC.

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

Project Status: Closed

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:
3/29/2004

Year Project Added to CIP: 2002

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells WTP

Funds and Cost Center: Water - 5519-882111

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:** 65.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	4	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	3	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	2	Scores carried over from 2021-2025 CIP
Public Benefit	3	Scores carried over from 2021-2025 CIP
Financial	2	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP

Risk Committee Weighted Score: 65.30

Criteria Name	Score	Comment
Condition	4	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	4	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	3	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	2	Scores carried over from 2021-2025 CIP
Public Benefit	3	Scores carried over from 2021-2025 CIP
Financial	2	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP

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: 1/8/2012
Phase Status: Active	End Date: 6/30/2020
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$5,886	\$5,886	\$5,886	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/8/2012	6/30/2020
Capital Delivery Salary	1/8/2012	6/30/2020
Professional Services (CS-272 - 71006A.01)	1/8/2012	6/30/2020
Contractual Professional Services	1/8/2012	6/30/2020
Other Capital Improvement Costs	1/8/2012	6/30/2020
Capitalized Interest	1/8/2012	6/30/2020

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

Phase: Design & Construction Assistance # 1 (CS-200, CS-1425)

Phase Title: Construction Administration, CS-200

Phase Budget: Water	Start Date: 1/8/2012
Phase Status: Active	End Date: 6/30/2020
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-200, CS-1425)	\$2,788	\$2,788	\$2,788	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-200)	1/8/2012	6/30/2020
Design/Engineering (CS-1425)	7/1/2015	6/29/2018

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

Phase: Construction (Build) # 1 (SP-563, CON-133)

Phase Title: Construction

Phase Budget: Water

Start Date: 4/5/2016

Phase Status: Active

End Date: 6/30/2020

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (SP-563, CON-133)	\$30,557	\$30,557	\$30,557	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (SP-563)	4/5/2016	6/30/2020
Construction (CON-133)	5/1/2020	5/29/2020

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

Phase: Pre-CAFR Actuals (SP-563)

Phase Title: Pre-CAFR Actuals (SP-563)

Phase Budget: Water

Start Date: 5/1/2010

Phase Status:

End Date: 6/30/2015

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Pre-CAFR Actuals (SP-563)	\$60,532	\$60,532	\$60,532

Phase Dates

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

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	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$310	\$20,353	\$310	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$77,422
2019	\$3,501	\$82,682	\$7,281	\$3,501	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$93,464
2020	\$0	\$0	\$89,310	\$7,978	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$97,288
2021	\$0	\$0	\$0	\$96,174	\$5,794	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$101,968
2022	\$0	\$0	\$5,632	\$6,864	\$68,332	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$80,828

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$99,764,891	\$99,764,891	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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

Project Status: Project Execution - 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: Erich Klun

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 3/29/2004

Year Project Added to CIP: 2004

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells WTP

Funds and Cost Center: Water - 5519-882111

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 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, an offer has been made to Conrail.

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

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.

E. Klun 7/30/21 Updates:

11. Equipment pre-purchase/procurement packages for long-lead, custom equipment identified during execution of Contract C development. Procurement packages for pumping equipment and process valves will result in six procurement contracts allowing GLWA to pre-purchase equipment that will be assigned to the Contract C installation contract.

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

Scoring

Project Manager Weighted Score: 97.80

Criteria Name	Score	Comment
Condition	5	No change
Performance (Service Level/Reliability)	5	No change
Regulatory (Environmental/Legal)	4	No change
Operations and Maintenance	5	No change
Health and Safety	5	No change
Public Benefit	5	No change
Financial	4	No change
Efficiency and Innovation	4	No change

Risk Committee Weighted Score: 90.90

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

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: 12/1/2016

Phase Status:

End Date: 12/28/2028

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$1,145	\$635	\$635	\$46	\$46	\$46	\$46	\$46	\$46	\$231	\$231

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/2/2018	12/28/2028
Capital Delivery Salary	1/2/2018	12/28/2028
Professional Services (CS-272 - 71012A.01 / 71017A.01 / 71026A.05)	1/2/2018	12/28/2028
Professional Services (MISC)	12/1/2016	6/30/2017
Contractual Professional Services	1/2/2018	12/28/2028
Other Capital Improvement Costs	1/2/2018	12/28/2028
Capitalized Interest	1/2/2018	12/28/2028

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

Phase: Study & Design & Construction Assistance # 1 (CS-103)

Phase Title: Study & Design & Construction Assistance # 1 (CS-103)

Phase Budget: Water

Start Date: 1/2/2018

Phase Status:

End Date: 12/28/2028

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-103)	\$15,244	\$6,090	\$6,090	\$831	\$831	\$833	\$831	\$831	\$831	\$4,158	\$4,163

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-103)	1/2/2018	12/28/2028

Phase: Design-Build # 1 (1900134, 1904795)

Phase Title: Design-Build # 1 (1900134, 1904795)

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

Phase Budget: Water	Start Date: 9/1/2019
Phase Status:	End Date: 2/28/2028
Cost Allocation:	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design-Build # 1 (1900134, 1904795)	\$265,518	\$6,217	\$6,217	\$13,594	\$11,122	\$19,120	\$25,074	\$24,122	\$25,122	\$104,561	\$141,143

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	9/1/2019	6/30/2020
Design-Build (1900134 - Contract A)	2/11/2020	11/7/2022
Construction (1904795 - Emergency Excavation)	6/1/2020	6/30/2020
Construction (Contract B)	11/27/2021	4/30/2025
Construction (Contract C)	11/11/2022	2/28/2028
Construction (Contract D)	8/1/2023	11/30/2024
Construction Equipment (Purchase E)	7/19/2022	4/28/2026
Construction Equipment (Purchase F)	7/19/2022	2/4/2026
Construction Equipment (Purchase G)	7/19/2022	1/12/2027
Construction Equipment (Purchase H)	5/24/2022	4/28/2026
Construction Equipment (Purchase I)	5/24/2022	4/28/2026
Construction Equipment (Purchase J)	5/24/2022	1/12/2027

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$59,500	\$1,500	\$2,000	\$12,500	\$22,000	\$21,500	\$26,500	\$0	\$0	\$0	\$0	\$86,000
2019	\$25,270	\$463	\$1,433	\$2,481	\$1,453	\$11,228	\$8,675	\$59,748	\$0	\$0	\$0	\$85,503
2020	\$68,880	\$498	\$2,607	\$5,985	\$9,302	\$13,724	\$13,724	\$26,145	\$42,831	\$0	\$0	\$114,816
2021	\$76,776	\$0	\$2,080	\$3,039	\$7,113	\$12,893	\$18,905	\$18,690	\$19,175	\$92,940	\$0	\$174,835
2022	\$91,610	\$579	\$1,582	\$3,336	\$11,813	\$16,546	\$18,135	\$19,954	\$18,583	\$18,391	\$21,032	\$224,222

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$281,907,586	\$12,944,042	\$14,472,417	\$12,000,000	\$20,000,000	\$25,952,140	\$25,000,000	\$26,000,000	\$108,952,140	\$145,538,988

Description of CIP Changes:

E. Klun 2018 Updates: (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

E. Klun 6/12/19 Updates: (1) 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.

E. Klun 8/9/19 Updates: (1) 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.

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; (4) 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.

E. Klun 7/30/21 Updates: (1) cost and schedule adjustments to Contract A (1900134) based on CO-01; (2) cost and schedule adjustments to Contract B (2003511) based on final design; (3) cost and schedule adjustment to Contract C based on 30% design; (4) cost and schedule adjustment to Contract D based on latest schedule for Conrail property purchase; (5) addition of equipment pre-purchase/procurement packages resulting in up to six additional contracts (Contracts E thru J) for equipment to be installed under Contract C; (6) created separate accounts with schedules and cashflow for each contract under CIP#114002.

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

Project Status: Project Execution - 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: 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:

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.

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

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

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:** 76.40

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

Risk Committee Weighted Score: 76.40

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

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:	6/10/2019
Phase Status:	Active	End Date:	6/30/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$297	\$105	\$105	\$18	\$0	\$0	\$0	\$0	\$0	\$0	\$173

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/10/2019	6/30/2025
Capital Delivery Salary	6/10/2019	6/30/2025
Professional Services (CS-272 - 71017A.02 / 71026A.04)	6/10/2019	6/30/2025
Contractual Professional Services	6/10/2019	6/30/2025
Other Capital Improvement Costs	6/10/2019	6/30/2025
Capitalized Interest	6/10/2019	6/30/2025

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: 6/30/2025
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1	\$1,786	\$1,073	\$1,073	\$631	\$0	\$0	\$0	\$0	\$0	\$0	\$81

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	6/10/2019	6/30/2025

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:	4/1/2022
Phase Status:	Future Planned Start	End Date:	6/30/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	5 Year Total	FY28+
Construction (Build) # 1	\$8,024	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,024

Phase Dates

Activity Name	Start Date	End Date
Construction	4/1/2022	6/30/2025

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY24	FY25	FY26	FY27	Total
2018	\$2,000	\$300	\$1,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000
2019	\$8,125	\$30	\$413	\$2,258	\$3,820	\$1,604	\$0	\$0	\$0	\$0	\$8,125
2020	\$8,095	\$30	\$413	\$2,258	\$3,820	\$1,604	\$0	\$0	\$0	\$0	\$8,125
2021	\$8,015	\$264	\$417	\$2,302	\$4,198	\$1,515	\$0	\$0	\$0	\$0	\$8,696
2022	\$7,940	\$10	\$934	\$376	\$3,660	\$3,780	\$500	\$0	\$0	\$0	\$9,260

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$10,108,638	\$1,178,638	\$650,000	\$0	\$0	\$0	\$0	\$0	\$0	\$8,280,000

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 - Ten-Year CIP

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 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:

Project Challenges: PAC equipment runs through congested storage areas and pipe chases.

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:** 36.80

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

Risk Committee Weighted Score: 36.80

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	2	committee tied (2&3) ; leaving at 2 to agree with PM
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	1	
Health and Safety	1	
Public Benefit	2	committee tied (2 & 3) ; leaving at 2 to agree with PM
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

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

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	7/1/2028
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$148	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$148

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2028	6/30/2031
Capital Delivery Salary	7/1/2028	6/30/2031
Contractual Professional Services	7/1/2028	6/30/2031
Other Capital Improvement Costs	7/1/2028	6/30/2031
Capitalized Interest	7/1/2028	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:	7/1/2028
Phase Status:	Future Planned Start	End Date:	6/30/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1	\$974	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$974

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2028	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:	7/1/2029
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	5 Year Total	FY28+
Construction (Build) # 1	\$2,896	\$0	\$0	\$0	\$0	\$2,896

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2029	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	FY27	Total
2018	\$2,900	\$900	\$2,000	\$0	\$0	\$0	\$0	\$2,900
2019	\$0	\$0	\$0	\$3,939	\$0	\$0	\$0	\$3,939
2020	\$0	\$0	\$0	\$0	\$3,938	\$0	\$0	\$3,938
2021	\$63	\$0	\$0	\$0	\$63	\$4,125	\$0	\$4,188
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,021

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$4,020,591	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,020,591

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. Change in Project Status for FY 23 update. JK 08/05/21

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

Project Status: Pending Closeout

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)**



Updated project photo

Project Engineer/Manager: Peter Fromm

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:

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:** 91.90

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

Risk Committee Weighted Score: 86.10

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

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:	8/29/2022
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$277	\$275	\$275	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/24/2018	8/29/2022
Capital Delivery Salary	1/24/2018	8/29/2022
Professional Services (CS-272 - 71017A.03 / 71026A.02 / 71026A.06)	8/10/2020	7/29/2022
Contractual Professional Services (1802774)	1/24/2018	8/29/2022
Other Capital Improvement Costs	1/24/2018	8/29/2022
Capitalized Interest	1/24/2018	8/29/2022

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

Phase: Design # 1 (CS-289)

Phase Title: Design

Phase Budget: Water

Start Date: 1/24/2018

Phase Status: Active

End Date: 6/30/2021

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Design # 1 (CS-289)	\$22	\$22	\$22

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-289)	1/24/2018	6/30/2021

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

Phase: Design-Build # 1 (1802774)

Phase Title: Design-Build

Phase Budget: Water	Start Date: 5/28/2019
Phase Status: Active	End Date: 8/29/2022
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design-Build # 1 (1802774)	\$13,679	\$10,866	\$10,866	\$2,813	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1802774)	5/28/2019	6/30/2020
Construction (1802774)	7/1/2020	8/29/2022

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY24	FY25	FY26	FY27	Total
2018	\$7,500	\$1,200	\$2,000	\$4,000	\$300	\$0	\$0	\$0	\$0	\$0	\$0	\$7,500
2019	\$17,107	\$0	\$424	\$4,153	\$6,830	\$5,697	\$3	\$0	\$0	\$0	\$0	\$17,107
2020	\$16,683	\$0	\$442	\$4,153	\$6,830	\$5,697	\$3	\$0	\$0	\$0	\$0	\$17,125
2021	\$10,677	\$0	\$178	\$3,386	\$10,327	\$331	\$19	\$0	\$0	\$0	\$0	\$14,241
2022	\$2,552	\$5	\$178	\$3,198	\$7,990	\$2,485	\$67	\$0	\$0	\$0	\$0	\$13,924

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$13,980,072	\$11,165,324	\$2,814,623	\$125	\$0	\$0	\$0	\$0	\$125	\$0

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

Project Status: Active - Pre-Procurement - 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: Erich Klun

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 9/8/2016

Year Project Added to CIP: 2012

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells WTP

Funds and Cost Center: Water - 5519-882111

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:

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.

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

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 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:** 68.00

Criteria Name	Score	Comment
Condition	5	No change
Performance (Service Level/Reliability)	4	No change
Regulatory (Environmental/Legal)	2	No change
Operations and Maintenance	4	No change
Health and Safety	3	No change
Public Benefit	5	No change
Financial	3	No change
Efficiency and Innovation	4	No change

Risk Committee Weighted Score: 58.30

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

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: 3/27/2020
Phase Status: Future Planned Start	End Date: 2/28/2031
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$1,608	\$531	\$531	\$571	\$0	\$0	\$0	\$0	\$0	\$0	\$252

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2023	2/28/2031
Capital Delivery Salary	3/1/2023	2/28/2031
Professional Services (CS-272 - 71013A.01 / 71017A.04 / 71026A.07 / 71027A.01 / 71027A.02)	3/27/2020	5/19/2023
Contractual Professional Services	3/1/2023	2/28/2031
Other Capital Improvement Costs	3/1/2023	2/28/2031
Capitalized Interest	3/1/2023	2/28/2031

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

Phase: Design & Construction Assistance # 1 (CS-272)

Phase Title: Design-Build Assistance

Phase Budget:	Water	Start Date:	3/1/2023
Phase Status:	Future Planned Start	End Date:	2/28/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-272)	\$23,097	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,094

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CMAR #1)	3/1/2023	2/28/2031

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:	3/1/2025
Phase Status:	Future Planned Start	End Date:	2/28/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$170,983	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,964

Phase Dates

Activity Name	Start Date	End Date
Construction (CMAR #1)	3/1/2025	2/28/2031
Construction Equipment/Material Purchase	3/1/2025	8/31/2030

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$25,000	\$2,000	\$7,000	\$8,000	\$8,000	\$0	\$0	\$0	\$0	\$0	\$25,000
2019	\$0	\$0	\$0	\$0	\$0	\$0	\$110,129	\$0	\$0	\$0	\$110,129
2020	\$72	\$0	\$0	\$0	\$0	\$0	\$72	\$110,578	\$0	\$0	\$110,650
2021	\$22,022	\$4	\$0	\$1	\$46	\$608	\$9,409	\$11,958	\$90,587	\$0	\$112,613
2022	\$51,354	\$4	\$237	\$267	\$1,568	\$4,614	\$13,057	\$16,057	\$16,057	\$22,122	\$200,472

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$195,689,099	\$531,529	\$571,663	\$0	\$0	\$0	\$0	\$0	\$0	\$24,311,298

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

E. Klun 8/2/21 Updates as Follows: (1) updated to include CS-272 Subtask 27A, which is a 20% design and a basis of design report to be used in RFPs for professional services and CMAR contract; (2) updated costs and schedule to reflect change from last year's update of multiple engineering and construction contracts to a single design contract and CMAR contract based on the result of the final deliverable under CS-272 Subtask 13A; and (3) incorporating the SUE investigation completed under CS-201.

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



Maintenance building photo 1 of finished section of piping

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 3/6/2012

Year Project Added to CIP: 2012

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells WTP

Funds and Cost Center: Water - 5519-882111

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, 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

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 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.

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

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.

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

Scoring**Project Manager Weighted Score:** 90.80

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

Risk Committee Weighted Score: 77.00

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	5	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	1	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	3	Scores carried over from 2021-2025 CIP
Public Benefit	1	Scores carried over from 2021-2025 CIP
Financial	2	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	4	Scores carried over from 2021-2025 CIP

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: 5/18/2016
Phase Status: Active	End Date: 2/17/2023
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$262	\$166	\$166	\$63	\$32	\$0	\$0	\$0	\$0	\$32	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/18/2016	2/17/2023
Capital Delivery Salary	5/18/2016	2/17/2023
Professional Services (CS-272 - 71017A.05)	8/10/2020	12/14/2020
Professional Services (MISC)	12/1/2016	12/31/2016
Contractual Professional Services	5/18/2016	2/17/2023
Other Capital Improvement Costs	5/18/2016	2/17/2023
Capitalized Interest	5/18/2016	2/17/2023

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

Phase: Study & Design & Construction Assistance # 1 (CS-1671)

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: 2/17/2023
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-1671)	\$1,384	\$1,057	\$1,057	\$216	\$110	\$0	\$0	\$0	\$0	\$110	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-1671)	5/18/2016	2/17/2023

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

Phase: Construction (Build) # 1 (CON-252)

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

Phase Budget: Water	Start Date: 2/1/2019
Phase Status: Active	End Date: 8/1/2022
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (CON-252)	\$24,205	\$17,240	\$17,240	\$6,300	\$665	\$0	\$0	\$0	\$0	\$665	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-252)	2/1/2019	8/1/2022

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY24	FY25	FY26	FY27	Total
2018	\$5,950	\$300	\$3,450	\$2,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,250
2019	\$10,891	\$280	\$450	\$1,406	\$4,824	\$4,654	\$7	\$0	\$0	\$0	\$0	\$0	\$11,621
2020	\$21,407	\$0	\$473	\$3,109	\$5,392	\$7,754	\$8,261	\$0	\$0	\$0	\$0	\$0	\$24,989
2021	\$14,577	\$0	\$0	\$2,373	\$6,948	\$6,932	\$6,932	\$713	\$0	\$0	\$0	\$0	\$23,898
2022	\$5,701	\$0	\$158	\$1,900	\$8,026	\$9,756	\$5,373	\$328	\$0	\$0	\$0	\$0	\$25,540

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$25,853,018	\$18,464,648	\$6,580,463	\$807,907	\$0	\$0	\$0	\$0	\$807,907	\$0

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: Springwells Water Treatment Plant, Reservoir Fill Line Improvements

Project Status: Pending Closeout

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-02.

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

Scoring**Project Manager Weighted Score:** 81.60

Criteria Name	Score	Comment
Condition	5	No change
Performance (Service Level/Reliability)	5	No change
Regulatory (Environmental/Legal)	3	No change
Operations and Maintenance	3	No change
Health and Safety	3	No change
Public Benefit	5	No change
Financial	4	No change
Efficiency and Innovation	4	No change

Risk Committee Weighted Score: 81.40

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

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

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	11/8/2016
Phase Status:	Active	End Date:	8/31/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$417	\$416	\$416	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/8/2016	6/30/2021
Capital Delivery Salary	11/8/2016	6/30/2021
Professional Services (CS-272 - 71010A.01 / 71010B.01 / 71010C.01 / 71026B.08)	4/7/2020	8/31/2021
Professional Services (MISC)	12/1/2016	6/30/2017
Contractual Professional Services	11/8/2016	6/30/2021
Other Capital Improvement Costs	11/8/2016	6/30/2021
Capitalized Interest	11/8/2016	6/30/2021

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

Phase: Design & Construction Assistance # 1 (CS-038)

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

Phase Budget: Water	Start Date: 11/8/2016
Phase Status: Active	End Date: 6/30/2021
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-038)	\$358	\$358	\$358	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-038)	11/8/2016	6/30/2021

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

Phase: Construction (Build) # 1 (CON-253)

Phase Title: SPW WTP Reservoir Fill Line Improvements

Phase Budget: Water	Start Date: 4/25/2018
Phase Status: Active	End Date: 6/30/2021
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (CON-253)	\$3,943	\$3,931	\$3,931	\$11	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-253)	4/25/2018	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$7,300	\$200	\$3,300	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,500
2019	\$6,207	\$120	\$181	\$2,469	\$3,656	\$61	\$21	\$0	\$0	\$0	\$0	\$0	\$6,508
2020	\$1,551	\$0	\$332	\$2,849	\$1,551	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,732
2021	\$0	\$0	\$0	\$2,830	\$1,991	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,821
2022	\$0	\$0	\$114	\$2,498	\$973	\$1,338	\$0	\$0	\$0	\$0	\$0	\$0	\$4,925

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$4,720,158	\$4,706,751	\$13,407	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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.

E. Klun 8/2/21 Updates as Follows: (1) CON-253 met 6/30/21 Final Completion date; (2) CS-038 delivered final documents by 6/30/21; (3) final CIP closeout proceedings commencing following finalization of asset management requirements. All charges ended 6/30/21.

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

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: 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 - 5519-882411

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:** 71.70

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

Risk Committee Weighted Score: 71.70

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

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:** 10/9/2019
Phase Status: Future Planned Start **End Date:** 5/2/2022
Cost Allocation: CTA **Fund:** N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP) **Usefull Life > Yrs:** Yes
Tot. Federal Loan Amount: \$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	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$220	\$178	\$178	\$41	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/9/2021	5/2/2022
Capital Delivery Salary	3/9/2021	5/2/2022
Professional Services (CS-272 - 71005A.01 / 71005B.01 / 71017A.06 / 71026A.03)	10/9/2019	1/31/2022
Contractual Professional Services	3/9/2021	5/2/2022
Other Capital Improvement Costs	3/9/2021	5/2/2022
Capitalized Interest	3/9/2021	5/2/2022

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:	3/9/2021
Phase Status:	Future Planned Start	End Date:	5/2/2022
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	5 Year Total
Construction (Build) # 1	\$1,304	\$250	\$250	\$1,054	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	3/9/2021	5/2/2022

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2020	\$862	\$206	\$656	\$0	\$0	\$0	\$0	\$0	\$0	\$862
2021	\$1,670	\$94	\$1,663	\$7	\$0	\$0	\$0	\$0	\$0	\$1,764
2022	\$2,001	\$90	\$189	\$566	\$1,435	\$0	\$0	\$0	\$0	\$2,281

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$1,524,322	\$428,322	\$1,096,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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:** Project Execution - 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.
6. Flocculator basin improvements.

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:** 51.70

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

Risk Committee Weighted Score: 51.40

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

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	8/10/2020
Phase Status:	Future Planned Start	End Date:	8/1/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	5 Year Total
GLWA Salaries	\$275	\$45	\$45	\$52	\$52	\$53	\$52	\$17	\$176

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/19/2021	8/1/2025
Capital Delivery Salary	1/19/2021	8/1/2025
Professional Services (CS-272 - 71017A.07 / 71026A.01)	8/10/2020	5/19/2023
Contractual Professional Services	1/19/2021	8/1/2025
Other Capital Improvement Costs	1/19/2021	8/1/2025
Capitalized Interest	1/19/2021	8/1/2025

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: Design & Construction Assistance # 1

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	1/19/2021
Phase Status:	Future Planned Start	End Date:	5/14/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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
Design & Construction Assistance # 1	\$2,240	\$144	\$144	\$547	\$607	\$404	\$403	\$134	\$1,549

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (2000279)	1/19/2021	5/14/2025

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	4/2/2023
Phase Status:	Future Planned Start	End Date:	8/1/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	5 Year Total
Construction (Build) # 1	\$18,213	\$0	\$0	\$0	\$0	\$8,392	\$8,393	\$1,427	\$18,213

Phase Dates

Activity Name	Start Date	End Date
Construction	4/2/2023	8/1/2025

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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
2022	\$11,790	\$1	\$567	\$371	\$6,474	\$4,942	\$2	\$12,358

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
\$20,729,943	\$189,943	\$600,000	\$660,000	\$8,850,000	\$8,850,000	\$1,580,000	\$19,939,999

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: Active - Pre-Procurement
- 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)**



Picture

Project Engineer/Manager: Justin Kietur

Director: Grant Gartrell

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: Water - 5519-882111

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 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

Scope of Work/Project Alternatives:

Project will be delivered using a progressive 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:

None

Primary Driver: 1 - Condition

Driver Explanation:

Substation is in poor condition due to corrosion of components.

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

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:** 56.00

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

Risk Committee Weighted Score: 62.70

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

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:	8/10/2020
Phase Status:	Future Planned Start	End Date:	6/30/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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
GLWA Salaries	\$172	\$0	\$0	\$6	\$20	\$72	\$72	\$0	\$165

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2024	6/30/2025
Capital Delivery Salary	7/1/2024	6/30/2025
Professional Services (CS-272 - 71017A.08)	8/10/2020	12/14/2020

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

Phase: Design/Engineering

Phase Title: Design-Build

Phase Budget: Water

Start Date: 7/1/2024

Phase Status: Future Planned Start

End Date: 6/30/2025

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Design/Engineering	\$2,162	\$0	\$0	\$23	\$34	\$1,727	\$377	\$0	\$2,139

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2024	6/30/2025
Construction	7/1/2024	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	FY21	FY22	FY23	FY24	FY25	Total
2021	\$1,508	\$0	\$90	\$1,378	\$40	\$0	\$1,508
2022	\$1,445	\$100	\$80	\$95	\$7	\$1,263	\$1,545

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
\$2,335,000	\$0	\$30,000	\$55,000	\$1,800,000	\$450,000	\$0	\$2,305,000

Description of CIP Changes:

Changes made for FY 23 CIP update. JK 08/05/21

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.

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:** 78.10

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

Risk Committee Weighted Score: 77.90

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

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:	6/30/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$324	\$86	\$86	\$56	\$56	\$56	\$56	\$10	\$0	\$180	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/26/2017	9/3/2025
Capital Delivery Salary	6/26/2017	9/3/2025
Professional Services	3/26/2016	6/30/2026
Contractual Professional Services	6/26/2017	9/3/2025
Other Capital Improvement Costs	6/26/2017	9/3/2025
Capitalized Interest	6/26/2017	9/3/2025

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

Phase: Study & Design & Construction Assistance # 1 (CS-055)

Phase Title: Study/Design/Construction Administration

Phase Budget: Water	Start Date: 6/26/2017
Phase Status: Active	End Date: 9/3/2025
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-055)	\$5,085	\$2,538	\$2,538	\$608	\$608	\$609	\$608	\$111	\$0	\$1,938	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-055)	6/26/2017	9/3/2025
Design/Engineering - (RECLASSIFICATION 115001/115003/115004)	1/1/2020	1/31/2020

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

Phase: Construction (Build) # 1 (2000610)

Phase Title: Construction

Phase Budget: Water	Start Date: 12/1/2020
Phase Status: Future Planned Start	End Date: 9/3/2025
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (2000610)	\$49,182	\$2,674	\$2,674	\$11,125	\$11,125	\$11,155	\$11,125	\$1,977	\$0	\$35,383	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (2000610)	12/1/2020	9/3/2025

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 5/1/2010

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$449	\$449	\$449

Phase Dates

Activity Name	Start Date	End Date
Pre-CAFR Actuals	5/1/2010	6/30/2015
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$53,900	\$5,500	\$27,900	\$20,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,900
2019	\$70,630	\$412	\$968	\$20,771	\$34,466	\$14,397	\$28	\$0	\$0	\$0	\$0	\$71,051
2020	\$51,999	\$682	\$899	\$17,333	\$17,333	\$17,333	\$0	\$0	\$0	\$0	\$0	\$53,580
2021	\$70,008	\$0	\$1,760	\$251	\$5,462	\$13,349	\$21,478	\$20,883	\$8,836	\$0	\$0	\$72,019
2022	\$31,449	\$430	\$1,077	\$882	\$4,372	\$6,322	\$6,322	\$6,321	\$6,322	\$6,163	\$6,500	\$54,815

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$55,042,064	\$5,749,773	\$11,790,097	\$11,790,098	\$11,822,398	\$11,790,096	\$2,099,606	\$0	\$37,502,196	\$0

Description of CIP Changes:

Project costs updated based on actual bid costs.

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

Project Status: Closed

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:
 3/17/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Waterworks Park WTP

Funds and Cost Center: Water - 5519-882111

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:** 84.10

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	5	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	3	Scores carried over from 2021-2025 CIP
Operations and Maintenance	5	Scores carried over from 2021-2025 CIP
Health and Safety	4	Scores carried over from 2021-2025 CIP
Public Benefit	5	Scores carried over from 2021-2025 CIP
Financial	5	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	3	Scores carried over from 2021-2025 CIP

Risk Committee Weighted Score: 95.40

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	4	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	4	Scores carried over from 2021-2025 CIP
Operations and Maintenance	5	Scores carried over from 2021-2025 CIP
Health and Safety	5	Scores carried over from 2021-2025 CIP
Public Benefit	5	Scores carried over from 2021-2025 CIP
Financial	3	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$65	\$65	\$65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2016	10/31/2019
Capital Delivery Salary	7/1/2016	10/31/2019
Professional Services	4/6/2015	10/31/2019
Contractual Professional Services	7/1/2016	10/31/2019
Other Capital Improvement Costs	7/1/2016	10/31/2019
Capitalized Interest	7/1/2016	10/31/2019

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

Phase: Design & Construction Assistance # 1 (CS-1721)

Phase Title: Design and Construction Assistance

Phase Budget: Water	Start Date: 7/1/2016
Phase Status: Active	End Date: 1/31/2020
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-1721)	\$933	\$933	\$933	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-1721)	7/1/2016	10/31/2019
Design/Engineering - (RECLASSIFICATION 115001/115003/115004)	1/1/2020	1/31/2020

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

Phase: Construction (Build) # 1 (CON-208)

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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (CON-208)	\$5,903	\$5,903	\$5,903	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-208)	1/10/2018	10/31/2019

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

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 5/1/2010

Phase Status:

End Date: 6/30/2015

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$64	\$64	\$64

Phase Dates

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

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	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$9,400	\$290	\$700	\$8,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,690
2019	\$6,006	\$371	\$672	\$3,124	\$2,878	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$7,049
2020	\$2,048	\$0	\$2,527	\$4,196	\$2,047	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$8,771
2021	\$0	\$0	\$0	\$6,686	\$754	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,440
2022	\$0	\$0	\$2,478	\$4,159	\$256	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,893

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$6,966,595	\$6,966,595	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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)**



Water Works Park Water Treatment Plant

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: 94.10

Criteria Name	Score	Comment
Condition	3	Ventilation system is at or very near its design life.
Performance (Service Level/Reliability)	5	Ventilation is so poor in some locations of the plant, staff believes that the atmosphere is accelerating the degradation of plant process equipment.
Regulatory (Environmental/Legal)	5	The ventilation system is not capable of removing noxious gasses from many rooms. Ozone warning beacons and alarms are inoperative.
Operations and Maintenance	3	Moderate levels of O&M work is needed.
Health and Safety	5	Lack of proper ventilation in chemical storage rooms and ozone rooms exposes plant staff to hazardous environments.
Public Benefit	4	Moderate impact to public benefit will be made during this project.
Financial	3	Canceling project will lead to more degradation of plant process equipment that is exposed to hazardous environments.
Efficiency and Innovation	2	Low impact to efficiency or innovation will be made during this project.

Risk Committee Weighted Score: 93.00

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

Project Title: WWP WTP Building Ventilation Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	9/29/2020
Phase Status:	Active	End Date:	6/30/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$197	\$3	\$3	\$48	\$48	\$48	\$48	\$0	\$0	\$145	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/29/2020	6/30/2025
Capital Delivery Salary	9/29/2020	6/30/2025
Contractual Professional Services	9/29/2020	6/30/2025
Other Capital Improvement Costs	9/29/2020	6/30/2025
Capitalized Interest	9/29/2020	6/30/2025

Project Title: WWP WTP Building Ventilation Improvements

Phase: Design & Construction Assistance # 1 (1802499)

Phase Title: Design and Construction Administration

Phase Budget: Water	Start Date: 9/29/2020
Phase Status: Active	End Date: 6/30/2025
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (1802499)	\$1,390	\$560	\$560	\$237	\$197	\$197	\$197	\$0	\$0	\$592	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1802499)	9/29/2020	6/30/2025

Project Title: WWP WTP Building Ventilation Improvements

Phase: Construction (Build) # 1 (1802499)

Phase Title: Construction

Phase Budget: Water

Start Date: 6/1/2022

Phase Status: Future Planned Start

End Date: 6/30/2025

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction (Build) # 1 (1802499)	\$9,861	\$0	\$0	\$0	\$5,154	\$2,853	\$1,853	\$0	\$0	\$9,861	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (1802499)	6/1/2022	6/30/2025

Project Title: WWP WTP Building Ventilation Improvements

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY25	FY26	FY27	Total
2020	\$5,064	\$7	\$507	\$3,907	\$650	\$0	\$0	\$0	\$0	\$0	\$5,071
2021	\$8,527	\$0	\$1,614	\$1,999	\$3,610	\$2,539	\$379	\$0	\$0	\$0	\$10,141
2022	\$4,235	\$0	\$1	\$380	\$523	\$1,621	\$1,592	\$400	\$100	\$307	\$4,924

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$11,449,444	\$563,444	\$286,000	\$5,400,000	\$3,099,999	\$2,099,999	\$0	\$0	\$10,600,000	\$0

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)**



Water Works Park Water Treatment Plant

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: Water - 5519-882411

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 are several areas throughout the grounds with concrete in a poor condition that requires rehabilitation to extend its service life.

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 structures.
9. Install access hatch for screen house catch basin.
10. Repair misc. concrete defects by shallow spall repair and crack injections.

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

11. Remove and replace areas of failing roadway.

Project Title: Water Works Park Site/Civil Improvements

Scoring**Project Manager Weighted Score:** 47.80

Criteria Name	Score	Comment
Condition	3	Significant amounts of crack and concrete repairs are needed throughout the plant grounds and process areas.
Performance (Service Level/Reliability)	3	Continued degradation of concrete components may lead to premature failure.
Regulatory (Environmental/Legal)	1	The project will have a low impact on regulatory needs.
Operations and Maintenance	3	Moderate levels of O&M work is needed.
Health and Safety	2	Little impact to public health and safety will be made during this project.
Public Benefit	1	The project will have a low impact on public benefit.
Financial	3	Canceling the project will increase the financial burden as the condition of the assets continue to degrade.
Efficiency and Innovation	1	No impact to efficiency or innovation will take place as a result of this project.

Risk Committee Weighted Score: 53.90

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

Project Title: Water Works Park Site/Civil Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water **Start Date:** 7/1/2026
Phase Status: Future Planned Start **End Date:** 6/30/2030
Cost Allocation: CTA **Fund:** N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP) **Usefull Life > Yrs:** No
Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$148	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$148

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2026	6/30/2030
Capital Delivery Salary	7/1/2026	6/30/2030
Contractual Professional Services	7/1/2026	6/30/2030
Other Capital Improvement Costs	7/1/2026	6/30/2030
Capitalized Interest	7/1/2026	6/30/2030

Project Title: Water Works Park Site/Civil Improvements

Phase: Design & Construction Assistance # 1 (CS-272)

Phase Title: Design and Construction Administration

Phase Budget:	Water	Start Date:	7/1/2026
Phase Status:	Future Planned Start	End Date:	6/30/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-272)	\$1,343	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,343

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2026	6/30/2030

Project Title: Water Works Park Site/Civil Improvements

Phase: Construction (Build) # 1 (TBD)

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2027
Phase Status:	Future Planned Start	End Date:	6/30/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	5 Year Total	FY28+
Construction (Build) # 1 (TBD)	\$4,389	\$0	\$0	\$0	\$0	\$4,389

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2027	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	5 Year Total	FY26	FY27	Total
2021	\$0	\$5,643	\$0	\$5,643
2022	\$6	\$6	\$297	\$5,882

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,881,717	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,881,717

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)**



Water Works Park High Lift Pumping Station

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: 2022

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 progressive design 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 electrical supply and 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:** 58.80

Criteria Name	Score	Comment
Condition	3	Signs of normal wear for age can be seen on the building architecture (100+ years) and pumping equipment (60 years).
Performance (Service Level/Reliability)	3	The project will eliminate single points of failure and improve reliability and redundancy.
Regulatory (Environmental/Legal)	2	Little impact to regulatory standards/laws will be made as a result of this project.
Operations and Maintenance	3	Moderate levels of O&M work is needed.
Health and Safety	3	The project intends to increase reliability of the station, thereby reducing risk of water delivery interruptions and pressure loss in the distribution system.
Public Benefit	4	Project will right size the pumping station - aligning with the 2015 Water Master Plan.
Financial	2	Low impact to financial consequences will be made as a result of this project.
Efficiency and Innovation	3	New pumping components and configuration will allow for better efficiencies in the future.

Risk Committee Weighted Score: 58.30

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

Project Title: Water Works Park High Lift Pumping Station Modernization

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/27/2022

Phase Status:

End Date: 6/30/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$459	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$279

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/27/2022	6/30/2031
Capital Delivery Salary	4/27/2022	6/30/2031
Contractual Professional Services	4/27/2022	6/30/2031
Other Capital Improvement Costs	4/27/2022	6/30/2031
Capitalized Interest	4/27/2022	6/30/2031

Project Title: Water Works Park High Lift Pumping Station Modernization

Phase: Design/Engineering

Phase Title: 115007: Design-Build

Phase Budget:

Start Date: 4/27/2022

Phase Status:

End Date: 6/30/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design/Engineering	\$96,340	\$0	\$0	\$50	\$0	\$0	\$0	\$0	\$0	\$0	\$38,070

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	4/27/2022	6/30/2031
Construction	10/1/2025	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	5 Year Total	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$13,826	\$280	\$530	\$530	\$780	\$11,705	\$18,494	\$88,946

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$96,800,000	\$0	\$50,000	\$0	\$0	\$0	\$0	\$0	\$0	\$38,350,000

Description of CIP Changes:

none.

Project Title: Jefferson Main Replacement Project

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: Timothy Kuhns

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: City of Detroit

Funds and Cost Center: Water - 5519-882411

Problem Statement:

The City of Detroit is planning on performing a complete reconstruction of Jefferson Avenue from I-375 to Alter Street in 2023. The existing GLWA 48-inch cast iron transmission main that is within Jefferson Avenue from Water Works Park to I-375 was constructed in 1915 and is beyond its service life. Given that Jefferson Avenue will be reconstructed, GLWA would like to replace the 48-inch Jefferson Main at the same time as Jefferson Avenue is being reconstructed. Replacing the Jefferson Main avoids duplication of restoration.

Scope of Work/Project Alternatives:

Scope of work for this project involves replacement of approximately 17,650 linear feet of 48-inch transmission main within Jefferson Avenue from Water Works Park to I-375.

Other Important Info:

This work will be included with the overall Jefferson Avenue Streetscape project. GLWA will cost share for their portion of the work associated with the 48-inch transmission main replacement.

Primary Driver: 1 - Condition

Driver Explanation:

GLWA 48-inch cast iron main in Jefferson is over 100 years old and is in need of replacement.

Project Title: Jefferson Main Replacement Project

Scoring**Project Manager Weighted Score:** 78.90

Criteria Name	Score	Comment
Condition	5	Pipe is over 100 years old.
Performance (Service Level/Reliability)	5	Field notes indicate cast iron pipe of this vintage has a large amount of leakage from the joints causing water loss issues.
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	5	
Health and Safety	2	
Public Benefit	4	
Financial	5	Being able to execute this project while Jefferson Avenue is being reconstructed will save money on road restoration costs now and in the future.
Efficiency and Innovation	2	

Risk Committee Weighted Score: 78.90

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

Project Title: Jefferson Main Replacement Project

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/15/2026

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$265	\$0	\$0	\$40	\$44	\$45	\$44	\$44	\$44	\$224	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	7/15/2026
Capital Delivery Salary	9/15/2021	7/15/2026

Project Title: Jefferson Main Replacement Project

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 9/15/2021

Phase Status:

End Date: 7/15/2026

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design/Engineering	\$3,480	\$0	\$0	\$613	\$782	\$686	\$684	\$684	\$28	\$2,866	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	9/15/2021	7/15/2026

Project Title: Jefferson Main Replacement Project

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 7/15/2026

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction	\$25,953	\$0	\$0	\$4,826	\$10,371	\$10,371	\$383	\$25,953	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	1/15/2024	7/15/2026
Construction Material / Equipment Purchase	7/1/2021	7/31/2021

Project Title: Jefferson Main Replacement Project

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

CIP

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$29,700,001	\$0	\$654,958	\$827,194	\$5,558,487	\$11,101,566	\$11,101,566	\$456,229	\$29,045,042	\$0

Description of CIP Changes:

A new project added to the CIP FY 2023-2027 7/27/2021 AC.

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

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)**



Photo of Water Works Park Plant

Project Engineer/Manager: Jacob Mangum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 7/30/2021

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: City of Detroit

Funds and Cost Center: Water - 5519-882411

Problem Statement:

The existing pre-stressed precast concrete beams that support the plate settlers in the sedimentation basins have developed extensive cracks. Additionally, the concrete knee walls that support the beams have begun to delaminate and spall. The integrity of the structural support system is not compromised at this time, however, to avoid further deterioration of the structure the cracks and spall need to be addressed.

Scope of Work/Project Alternatives:

This project will be delivered under a progressive design-build delivery model. The structural system will be examined to confirm preliminary findings, methods for rehabilitation will be proposed, and upgrades will be completed to address the present deterioration of the beams and supports with the goal of extending their service life.

Other Important Info:

Reliability of all treatment systems at Water Works Park is critical to support system right-sizing and decommissioning of Northeast WTP.

Primary Driver: 1 - Condition

Driver Explanation:

Current extensive cracking exposes the concrete reinforcement in the beams and supports to further deterioration. Not addressing this issue now will result in higher costs in the future should total replacement be necessary rather than rehabilitation.

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

Scoring

Project Manager Weighted Score: 74.20

Criteria Name	Score	Comment
Condition	4	No imminent danger. Deterioration will continue if not addressed soon.
Performance (Service Level/Reliability)	3	Cancelling project would cause service issues eventually.
Regulatory (Environmental/Legal)	3	WWP needs to be in full compliance in order to close down Northeast WTP. Sedimentation basins need to be reliable.
Operations and Maintenance	1	Negligible impact to O&M.
Health and Safety	4	During basin cleaning it is dangerous to be around failing concrete/spalling.
Public Benefit	2	Does not require all new infrastructure only rehabilitation. Helps improve WWP reliability and ability to close Northeast.
Financial	5	Deferring rehabilitation now would result in increased costs if the beams needed to be replaced. Would be over \$5M in impact.
Efficiency and Innovation	1	Minimal impact.

Risk Committee Weighted Score: 75.30

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

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 8/1/2022

Phase Status:

End Date: 6/2/2026

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY25	FY26	5 Year Total	FY28+
GLWA Salaries	\$136	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$136

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2022	6/2/2026
Capital Delivery Salary	8/1/2022	6/2/2026

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 8/1/2022

Phase Status:

End Date: 2/7/2023

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	5 Year Total	FY28+
Design/Engineering	\$2,465	\$0	\$0	\$0	\$0	\$2,465

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (DB)	8/1/2022	2/7/2023

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 6/2/2026

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY25	FY26	5 Year Total	FY28+
Construction	\$15,737	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$15,737

Phase Dates

Activity Name	Start Date	End Date
Construction (DB)	5/3/2023	6/2/2026
Construction Material / Equipment Purchase	7/1/2021	7/31/2021

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

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

CIP

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Total Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY28+
\$18,339,223	\$0	\$0	\$0	\$0	\$0	\$0	\$18,339,223

Description of CIP Changes:

New CIP project added to FY 2023-2027 7/28/2021 AC.

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Project Status: Project Execution - Construction

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 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

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

the wet using underwater diver teams. The DB-150 project approach will involve the latter alternative to rehab the tunnel sections of concern.

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel 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	
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	
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:

End Date: 6/30/2026

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$338	\$108	\$108	\$45	\$45	\$45	\$45	\$45	\$0	\$183	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/29/2018	6/30/2026
Capital Delivery Salary	1/29/2018	6/30/2026
Professional Services	11/15/2016	6/30/2025
Contractual Professional Services	1/29/2018	6/30/2026
Other Capital Improvement Costs	1/29/2018	6/30/2026
Capitalized Interest	1/29/2018	6/30/2026

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Phase: Design-Build # 1 (DB-150, CS-166, CS-187)

Phase Title: Design-Build # 1 (DB-150, CS-166, CS-187)

Phase Budget: Water

Start Date: 1/29/2018

Phase Status:

End Date: 6/30/2026

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design-Build # 1 (DB-150, CS-166, CS-187)	\$95,545	\$27,421	\$27,421	\$13,617	\$13,617	\$13,654	\$13,617	\$13,617	\$0	\$54,506	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-187)	1/29/2018	6/30/2020
Design/Engineering (CS-166)	10/1/2019	2/28/2020
Construction (DB-150)	12/22/2018	6/30/2026

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 5/1/2010

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$3,102	\$3,102	\$3,102

Phase Dates

Activity Name	Start Date	End Date
Pre-CAFR Actuals	5/1/2010	6/30/2015
FY21 Baseline	7/1/2020	6/30/2021

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	FY25	FY26	FY27	Total
2018	\$31,900	\$500	\$2,000	\$10,000	\$15,000	\$4,900	\$0	\$0	\$0	\$0	\$0	\$0	\$32,400
2019	\$29,444	\$10	\$3,625	\$9,042	\$5,468	\$5,468	\$5,468	\$3,998	\$0	\$0	\$0	\$0	\$33,079
2020	\$20,399	\$0	\$2,178	\$7,513	\$5,467	\$5,467	\$5,467	\$3,998	\$0	\$0	\$0	\$0	\$30,090
2021	\$50,392	\$0	\$0	\$10,200	\$653	\$14,138	\$21,917	\$8,810	\$5,527	\$0	\$0	\$0	\$61,245
2022	\$72,446	\$0	\$2,168	\$8,022	\$5,221	\$7,024	\$8,360	\$17,395	\$23,303	\$18,016	\$5,372	\$0	\$94,880

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$98,985,988	\$30,632,896	\$13,663,132	\$13,663,132	\$13,700,565	\$13,663,132	\$13,663,132	\$0	\$54,689,961	\$0

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

Project Status: Active - Procurement - 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)**



Aerial image of Belle Isle intake structure and lagoon.

Project Engineer/Manager: Michael Dunne

Director: Terry Daniel

Managing Dept.: Water Eng

Date Original Business Case Prepared: 7/23/2020

Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Belle Isle Intake

Funds and Cost Center: Water - 5519-882111

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. Stabilize lampposts that are leaning due to erosion.
3. Install armor stone where erosion is beginning, but not yet significant.
4. Grade and dress lagoon access road in select areas.
5. Replace existing sections of the stormwater system and re-establish shoreline.
6. Improve retaining wall on southwest end of southern lagoon dike.

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:** 71.70

Criteria Name	Score	Comment
Condition	4	Erosion in many areas of the southern dike is advancing.
Performance (Service Level/Reliability)	2	Canceling the project may lead to compromising the lagoon system.
Regulatory (Environmental/Legal)	4	Since a former radioactive site collapsed into the Detroit River in December 2019, the City of Detroit has begun enforcing regulations on the structural integrity of seawalls.
Operations and Maintenance	1	Negligible impacts to O&M will be impacted by this project.
Health and Safety	3	Failure of the dike system may have moderate impacts on raw water quality.
Public Benefit	1	No impact to public benefit will take place as a result of this project.
Financial	3	Without necessary repairs, the erosion will continue to progress and increase costs of rehabilitation.
Efficiency and Innovation	1	No impact to efficiency or innovation will take place as a result of this project.

Risk Committee Weighted Score: 63.40

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	3	
Health and Safety	3	
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:** 12/1/2021**Phase Status:****End Date:** 6/28/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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	\$133	\$0	\$0	\$29	\$51	\$52	\$103

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/1/2021	6/28/2024
Capital Delivery Salary	12/1/2021	6/28/2024
Contractual Professional Services	12/1/2021	6/28/2024
Other Capital Improvement Costs	12/1/2021	6/28/2024
Capitalized Interest	12/1/2021	6/28/2024

Project Title: Belle Isle Seawall Rehabilitation

Phase: Design/Engineering**Phase Title:** Design-Build

Phase Budget:**Start Date:** 12/1/2021**Phase Status:****End Date:** 6/28/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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/Engine ering	\$2,406	\$0	\$0	\$210	\$548	\$1,647	\$2,196

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	12/1/2021	6/28/2024
Construction	12/1/2021	6/28/2024

Project Title: Belle Isle Seawall Rehabilitation

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

CIP	5 Year Total	FY22	FY23	FY24	Total
2022	\$1,832	\$319	\$1,231	\$281	\$1,832

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
\$2,540,000	\$0	\$240,000	\$600,001	\$1,700,000	\$2,300,000

Description of CIP Changes:

N/A

Project Title: Belle Isle Intake System Rehabilitation and 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)**



Belle Isle Intake

Project Engineer/Manager: Michael Dunne

Director: Terry Daniel

Managing Dept.: Water Eng

Date Original Business Case Prepared: 8/19/2020

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Belle Isle

Funds and Cost Center: Water - 5519-882411

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 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

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

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: 54.90

Criteria Name	Score	Comment
Condition	3	Issues exist around the grounds that need addressing to prevent escalation 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.
Health and Safety	1	Little impact to public health and safety will be made during this project.
Public Benefit	1	Little impact to public benefit will be made during this project.
Financial	2	Canceling the project will have limited financial consequences.
Efficiency and Innovation	2	A robust early warning water quality monitoring system can be designed to make GLWA an industry leader.

Risk Committee Weighted Score: 55.80

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

Project Title: Belle Isle Intake System Rehabilitation and Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2022

Phase Status:

End Date: 6/30/2027

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$229	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$229

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	6/30/2027
Capital Delivery Salary	7/1/2022	6/30/2027
Contractual Professional Services	7/1/2022	6/30/2027
Other Capital Improvement Costs	7/1/2022	6/30/2027
Capitalized Interest	7/1/2022	6/30/2027

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: 6/30/2027

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance	\$3,133	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,133

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2022	6/30/2027

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	5 Year Total	FY23	FY24	Total
2022	\$350	\$300	\$50	\$350

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$3,363,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,363,000

Description of CIP Changes:

none.

Project Title: System Electrical Power Improvements

Project Status: Active - Pre-Procurement
- 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: Eric Griffin

Director: Grant Gartrell

Managing Dept.: Energy Management

Date Original Business Case Prepared:

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Multiple Counties

Funds and Cost Center: Water - 5519-882111

Problem Statement:

Electrical power redundancy and reliability is critically important for the successful operation of the sewage pumping stations, especially during storm events. The storm events and performance of certain sewage pumping stations during the summer of 2021 necessitate that GLWA review the firm and total installed capacities of pumping units, the redundancy and reliability of power supplies, electrical switchgear configurations, and backup power generation capabilities at its sewage pumping stations. Deficiencies and improvement needs will be resolved under this CIP project.

Scope of Work/Project Alternatives:

Conduct a condition assessment and needs assessment of the primary and secondary electrical systems at all of GLWA's sewage pumping stations. The condition/needs assessment will include but not be limited to:

- 1.Primary power feeds
 - 2.Electrical system configuration
 - 3.Electrical switchgear, motor control centers, VFDs, etc.
 - 4.Motor controls
 - 5.Medium-voltage power system
 - 6.Onsite backup power generation and distribution systems
 - 7.Other relevant and necessary electrical power, distribution and controls that impact the redundancy and reliability of the pumping units
- Once the necessary improvements have been identified in the condition and needs assessments, they will be designed and constructed under a progressive design build contracting approach. Therefore, the progressive design build project will include the following principle services:

A.Study phase services, including the condition and needs assessments, and alternative evaluations

Other Important Info:

Primary Driver: 2 - Performance

Driver Explanation:

The existing sewage pumping stations are under increasing demand to perform more reliably due to the more extreme and frequent occurrence in storm events; and time is of the essence. Therefore, an innovative progressive design build approach that includes study phase services is proposed for this CIP project delivery.

Project Title: System Electrical Power Improvements

B.Design phase services, including 30%, 60%, 90%,
and 100% deliverables
C.Construction phase services

Project Title: System Electrical Power Improvements

Scoring**Project Manager Weighted Score:** 76.00

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

Risk Committee Weighted Score: 77.10

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

Project Title: System Electrical Power Improvements

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

Phase Budget: Water**Start Date:** 10/2/2022**Phase Status:****End Date:** 2/1/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
GLWA Salaries	\$91	\$0	\$0	\$45	\$46	\$91

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/2/2022	2/1/2024
Capital Delivery Salary	10/2/2022	2/1/2024

Project Title: System Electrical Power Improvements

Phase: Design/Engineering**Phase Title:** Design/Engineering

Phase Budget: Water**Start Date:** 10/2/2022**Phase Status:****End Date:** 2/1/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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/Engineering	\$3,908	\$0	\$0	\$2,184	\$1,723	\$3,908

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	10/2/2022	2/1/2024

Project Title: System Electrical Power Improvements

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 7/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Construction	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2021	7/30/2021
Construction Material / Equipment Purchase	7/1/2021	7/30/2021

Project Title: System Electrical Power Improvements

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY23	FY24	5 Year Total
\$4,000,000	\$0	\$2,229,508	\$1,770,492	\$4,000,000

Description of CIP Changes:

New project added to FY 2023-2027 CIP Plan 7/30/2021 AC.

Project Title: Water Works Park to Northeast Transmission Main

Project Status: Project Execution - Construction

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: 9/8/2016

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: WWP to NE WTP

Funds and Cost Center: Water - 5519-882111

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 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

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

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:** 70.10

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

Risk Committee Weighted Score: 76.80

Criteria Name	Score	Comment
Condition	1	Scores carried over from previous year
Performance (Service Level/Reliability)	5	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	5	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	5	Scores carried over from previous year
Financial	5	Scores carried over from previous year
Efficiency and Innovation	5	Scores carried over from previous year

Project Title: Water Works Park to Northeast Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	7/1/2017
Phase Status:	Active	End Date:	3/4/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$646	\$302	\$302	\$49	\$49	\$49	\$49	\$49	\$49	\$246	\$49

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/5/2019	8/15/2028
Capital Delivery Salary	9/5/2019	8/15/2028
Professional Services	7/1/2017	3/4/2029
Contractual Professional Services	9/5/2019	8/15/2028
Other Capital Improvement Costs	9/5/2019	8/15/2028
Capitalized Interest	9/5/2019	8/15/2028

Project Title: Water Works Park to Northeast Transmission Main

Phase: Phase #1 (CS-152/1803258)

Phase Title: Phase 3 WWP to NE Transmission Main

Phase Budget:	Water	Start Date:	9/5/2019
Phase Status:	Future Planned Start	End Date:	9/4/2022
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Phase #1 (CS-152/1803258)	\$28,937	\$21,022	\$21,022	\$1,367	\$6,527	\$19	\$0	\$0	\$0	\$6,546	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-152)	7/1/2020	9/4/2022
Construction (1803258)	9/5/2019	9/4/2022

Project Title: Water Works Park to Northeast Transmission Main

Phase: Design/Engineering

Phase Title: Phase 2 WWP to NE Transmission Main - Transmission Main

Phase Budget:	Water	Start Date:	2/15/2021
Phase Status:	Future Planned Start	End Date:	8/15/2028
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design/Engineering	\$85,034	\$0	\$0	\$4,671	\$6,134	\$14,865	\$14,833	\$14,833	\$14,833	\$65,500	\$14,862

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	2/15/2021	11/15/2023
Construction	11/15/2023	8/15/2028

Project Title: Water Works Park to Northeast Transmission Main

Phase: Design/Engineering

Phase Title: Phase 1 WWP to NE Transmission Main - Flow Control Station at NE

Phase Budget:	Water	Start Date:	9/15/2021
Phase Status:	Future Planned Start	End Date:	3/15/2028
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design/Engineering	\$33,149	\$0	\$0	\$1,000	\$11,192	\$4,186	\$4,186	\$4,186	\$4,186	\$27,939	\$4,209

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (2003102)	9/15/2021	3/15/2024
Construction (2003102)	3/15/2024	3/15/2028

Project Title: Water Works Park to Northeast Transmission Main

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$92,500	\$1,500	\$5,000	\$10,000	\$74,000	\$2,000	\$37,500	\$0	\$0	\$0	\$0	\$130,000
2019	\$104,285	\$1,305	\$1,372	\$8,622	\$17,547	\$46,022	\$30,722	\$25,270	\$0	\$0	\$0	\$130,879
2020	\$100,381	\$1,655	\$1,121	\$871	\$15,786	\$24,115	\$29,615	\$29,994	\$30,115	\$0	\$0	\$133,272
2021	\$87,797	\$0	\$2,611	\$1,169	\$11,703	\$18,407	\$18,678	\$18,170	\$20,839	\$65,949	\$0	\$157,526
2022	\$73,872	\$23	\$44	\$5,123	\$11,235	\$14,593	\$9,214	\$14,535	\$13,836	\$21,696	\$27,213	\$143,218

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$147,768,266	\$21,324,514	\$7,088,750	\$23,903,829	\$19,121,582	\$19,069,337	\$19,069,338	\$19,069,339	\$100,233,421	\$19,121,580

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

Project Status: Active - Pre-Procurement
- Construction

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: Grant Gartrell

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
1/1/2015

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Imlay Station to North Service Center

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Project critical to providing isolation and redundancy to Lake Huron WTP supply, while protecting the water supply from potential contamination at the former G&H Industrial Landfill site. 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. Project also includes installation of new parallel main along 96" main between NSC and Almont's master meter to facilitate maintenance of service during construction as well as provide a long-term solution to backup water supply to those member partners served off the existing 96" main north of Romeo.

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 transmission main has only one isolation valve along its entire 34 mile reach with no means for bypass to community connections at their master meters. This main represents single feeds to those connected to the 96-inch main and when service is disrupted due to appurtenance or main breaks, those connected to the 96-inch main are all impacted. Installation of additional isolation valves with large-bypasses at master meter locations along with the construction of the Lapeer County intertie transmission main will provide long-needed redundancy and improve reliability to those served from the 96-inch transmission system. Lastly, the additional isolation valves and intertie water transmission main will afford the opportunity for future condition assessments,

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

maintenance and repair of the 96-inch main and its appurtenances without disrupting water service to those fed from the 96-inch transmission system. Lastly, that portion of the 96-inch main that is located in the former G&H Industrial landfill site will be removed from service and decommissioned to provide long-term protection of water quality.

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Scoring**Project Manager Weighted Score:** 83.50

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

Risk Committee Weighted Score: 77.50

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

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: 12/8/2028
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$569	\$186	\$186	\$47	\$47	\$48	\$47	\$47	\$47	\$239	\$96

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/29/2017	12/8/2028
Capital Delivery Salary	3/29/2017	12/8/2028
Professional Services	3/29/2017	11/15/2027
Contractual Professional Services	3/29/2017	12/8/2028
Other Capital Improvement Costs	3/29/2017	12/8/2028
Capitalized Interest	3/29/2017	12/8/2028

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Phase: Study # 1 (CS-165, 1900741, MISC)

Phase Title: Study

Phase Budget: Water	Start Date: 7/1/2016
Phase Status: Closed Out	End Date: 11/15/2027
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Study # 1 (CS-165, 1900741, MISC)	\$33,196	\$9,487	\$9,487	\$3,714	\$3,714	\$3,724	\$3,714	\$3,714	\$3,714	\$18,580	\$1,414

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1900741)	3/29/2017	11/15/2027
Design/Engineering (CS-165)	3/6/2017	3/29/2019
Design/Engineering (MISC - TO BE DELETED)	7/1/2016	6/30/2017

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	10/1/2021
Phase Status:	Future Planned Start	End Date:	12/8/2028
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$226,076	\$0	\$0	\$4,771	\$11,237	\$36,227	\$36,237	\$36,237	\$31,237	\$151,179	\$70,125

Phase Dates

Activity Name	Start Date	End Date
Construction	12/8/2021	12/8/2028
Construction - Procurement of Equipment	10/1/2021	9/30/2022

Project Title: 96-inch Water Transmission Main Relocation and Isolation Valve Installations

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$106,800	\$500	\$1,500	\$6,000	\$35,900	\$31,700	\$31,700	\$31,700	\$0	\$0	\$0	\$0	\$139,000
2019	\$74,248	\$460	\$570	\$1,797	\$2,644	\$895	\$23,087	\$45,825	\$57,389	\$0	\$0	\$0	\$132,667
2020	\$96,792	\$0	\$1,130	\$837	\$5,000	\$6,000	\$26,453	\$35,886	\$23,453	\$33,907	\$0	\$0	\$132,666
2021	\$80,563	\$0	\$0	\$1,790	\$2,549	\$5,267	\$15,765	\$19,937	\$19,797	\$19,797	\$59,969	\$0	\$144,871
2022	\$45,978	\$0	\$255	\$502	\$1,059	\$2,077	\$2,577	\$7,613	\$10,625	\$12,582	\$12,582	\$24,606	\$144,852

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$259,842,933	\$9,673,781	\$8,533,256	\$14,999,999	\$40,000,000	\$39,999,999	\$39,999,999	\$34,999,999	\$170,000,001	\$71,635,895

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

FY22 to FY23 major changes -

1. Added Lapeer County intertie water transmission main to provide reliable maintenance of water service during construction for communities served north of the Dorsey-Dickenson isolation valve, and to provide permanent redundancy to the same service area. The Lapeer County intertie transmission main also affords the ability for future condition assessment, maintenance and repair of the 96-inch transmission main and its appurtenances between Imlay Station and the Dorsey Dickenson isolation valve. Approximate cost \$36-million.
2. Added South Branch Flint River Discharge Facility to ensure maintenance of water quality to communities served west of Imlay Station along the 72-inch transmission main and too simplify operations during construction of the Lake Huron water treatment plant. Approximate cost \$3.5-million.
3. Added the replacement of 150 appurtenances along the entire 96-inch transmission main between Imlay Station and the North Service Center because it will not be entirely taken out of service. Existing appurtenances are 60 years old and represent weak points on the pipeline and when replaced with new will improve overall pipeline reliability. Approximate cost \$7-million.
4. Increased CIP project budget to account for recent market price increases in commodities (e.g., steel prices). Approximate cost \$16-million.
5. Increased CIP project budget to account for the estimated costs for additional construction contractor overhead due to additional project management, supervision and coordination of the additional scope items mentioned above. Approximate cost \$29-million.
6. Increased CIP project budget to include additional contingency associated with the additional scope items mentioned above. Approximate cost \$6-million.

Note that these approximate costs are based on a 30% design opinion of probable construction cost.

Revision: July 30, 2021, G. Gartrell

Project Title: Schoolcraft 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

☐ **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: 8/17/2015

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, blowoff's, 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:** 75.90

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

Risk Committee Weighted Score: 54.70

Criteria Name	Score	Comment
Condition	3	Scores carried over from previous year
Performance (Service Level/Reliability)	3	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	3	Scores carried over from previous year
Health and Safety	3	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

Project Title: Schoolcraft Road Water Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 6/4/2018

Phase Status:
End Date: 6/30/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$749	\$703	\$703	\$45	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/4/2018	6/30/2022
Capital Delivery Salary	6/4/2018	6/30/2022
Professional Services	6/4/2018	6/30/2022
Contractual Professional Services	6/4/2018	6/30/2022
Other Capital Improvement Costs	6/4/2018	6/30/2022
Interlocal Agreement or Intergovernmental Agreement	6/4/2018	6/30/2022
Capitalized Interest	6/4/2018	6/30/2022

Project Title: Schoolcraft Road Water Transmission Main

Phase: Design & Construction Assistance # 1 (CS-1488, CS-259)

Phase Title: Design & Construction Assistance # 1 (CS-1488, CS-259)

Phase Budget: Water

Start Date: 7/1/2017

Phase Status:
End Date: 6/30/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-1488, CS-259)	\$686	\$441	\$441	\$245	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-259)	6/4/2018	6/30/2022
Design/Engineering (CS-1488 - to be moved to CS-259)	7/1/2017	6/28/2019

Project Title: Schoolcraft Road Water Transmission Main

Phase: Construction (Build) # 1 (1804129)**Phase Title:** Construction (Build) # 1 (1804129)

Phase Budget: Water**Start Date:** 2/1/2020**Phase Status:****End Date:** 12/9/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Construction (Build) # 1 (1804129)	\$13,613	\$5,549	\$5,549	\$8,063

Phase Dates

Activity Name	Start Date	End Date
Construction (1804129)	2/1/2020	12/9/2021

Project Title: Schoolcraft Road Water Transmission Main

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$14,550	\$0	\$7,300	\$7,250	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$14,550
2019	\$13,789	\$16	\$50	\$6,249	\$6,899	\$591	\$0	\$0	\$0	\$0	\$0	\$13,805
2020	\$17,878	\$4	\$180	\$8,100	\$9,145	\$633	\$0	\$0	\$0	\$0	\$0	\$18,062
2021	\$14,623	\$0	\$141	\$3,342	\$13,141	\$1,482	\$0	\$0	\$0	\$0	\$0	\$18,106
2022	\$7,606	\$0	\$137	\$1,245	\$6,337	\$7,606	\$0	\$0	\$0	\$0	\$0	\$15,326

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$15,049,232	\$6,694,481	\$8,354,751	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Description of CIP Changes:

Updated the Engineering cost per FY to cover the RPR.

Project Title: Wick 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

☐ **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: 8/17/2015

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Romulus

Funds and Cost Center: Water - 5519-882411

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:** 78.10

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

Risk Committee Weighted Score: 62.90

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

Project Title: Wick Road Water Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 11/26/2017

Phase Status:
End Date: 10/15/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$879	\$754	\$754	\$125	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/26/2017	10/15/2022
Capital Delivery Salary	11/26/2017	10/15/2022
Professional Services (CS-272 - 71022A.01)	11/26/2017	10/15/2022
Contractual Professional Services	11/26/2017	10/15/2022
Other Capital Improvement Costs	11/26/2017	10/15/2022
Capitalized Interest	11/26/2017	10/15/2022

Project Title: Wick Road Water Transmission Main

Phase: Design # 1 (CS-1488, CS-259)

Phase Title: Design # 1 (CS-1488, CS-259)

Phase Budget: Water

Start Date: 7/1/2016

Phase Status:
End Date: 6/30/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design # 1 (CS-1488, CS-259)	\$1,520	\$938	\$938	\$582	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-259)	11/26/2017	6/30/2022
Design/Engineering (CS-1488)	7/1/2016	9/30/2020

Project Title: Wick Road Water Transmission Main

Phase: Construction (Build) # 1 (CON-306, 1803621)

Phase Title: Construction (Build) # 1 (CON-306, 1803621)

Phase Budget: Water

Start Date: 8/31/2019

Phase Status:

End Date: 10/15/2022

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	5 Year Total
Construction (Build) # 1 (CON-306, 1803621)	\$23,296	\$15,440	\$15,440	\$7,855	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (1803621)	8/31/2019	10/15/2022
Construction (MISC)	8/1/2020	12/31/2020

Project Title: Wick Road Water Transmission Main

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$9,350	\$10,000	\$9,350	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,350
2019	\$24,280	\$23	\$16	\$1,743	\$12,373	\$10,154	\$10	\$0	\$0	\$0	\$0	\$0	\$24,319
2020	\$30,422	\$0	\$126	\$1,370	\$18,028	\$12,334	\$60	\$0	\$0	\$0	\$0	\$0	\$31,918
2021	\$15,755	\$0	\$0	\$420	\$6,163	\$9,975	\$5,780	\$0	\$0	\$0	\$0	\$0	\$22,338
2022	\$4,774	\$0	\$0	\$294	\$5,609	\$11,743	\$4,774	\$0	\$0	\$0	\$0	\$0	\$22,420

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$25,696,906	\$17,132,965	\$8,563,941	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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)**



Construction on Merriman Rd.

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:** 76.80

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

Risk Committee Weighted Score: 76.80

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

Project Title: Merriman Road Water Transmission Main Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	3/19/2024
Phase Status:	Future Planned Start	End Date:	8/24/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$368	\$1	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$229

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/19/2024	8/24/2030
Capital Delivery Salary	3/19/2024	8/24/2030
Contractual Professional Services	3/19/2024	8/24/2030
Other Capital Improvement Costs	3/19/2024	8/24/2030
Capitalized Interest	3/19/2024	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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1	\$3,293	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,282

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	3/19/2024	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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	5 Year Total	FY28+
Construction (Build) # 1	\$18,492	\$0	\$0	\$0	\$0	\$8,935

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2026	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	FY27	Total
2018	\$4,000	\$1,800	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
2019	\$5,241	\$6	\$653	\$1,611	\$2,076	\$901	\$0	\$0	\$0	\$0	\$0	\$5,247
2020	\$5,239	\$0	\$0	\$0	\$0	\$0	\$30	\$5,209	\$0	\$0	\$0	\$5,239
2021	\$1,702	\$0	\$0	\$0	\$0	\$0	\$15	\$390	\$1,297	\$19,755	\$0	\$21,457
2022	\$2,107	\$0	\$0	\$2	\$57	\$27	\$27	\$273	\$890	\$890	\$4,810	\$22,155

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$22,154,359	\$1,805	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,446,942

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

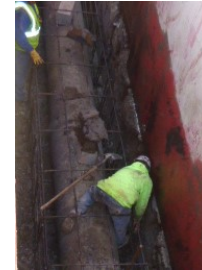
Class Lvl 1: Water

Class Lvl 2: Field Services

Class Lvl 3: Transmission System

☐ **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)**



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:** 76.90

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

Risk Committee Weighted Score: 44.10

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

Project Title: Park-Merriman Road Water Transmission Main

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 11/27/2017

Phase Status:
End Date: 2/21/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$1,518	\$1,494	\$1,494	\$23	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/27/2017	2/21/2022
Capital Delivery Salary	11/27/2017	2/21/2022
Professional Services (CS-272 - 71024A.01)	11/27/2017	2/21/2022
Contractual Professional Services	11/27/2017	2/21/2022
Contractual Professional Services (Water I&E)	11/27/2017	2/21/2022
Other Capital Improvement Costs	11/27/2017	2/21/2022
Capitalized Interest	11/27/2017	2/21/2022

Project Title: Park-Merriman Road Water Transmission Main

Phase: Design & Construction Assistance # 1 (CS-259, CS-1488)

Phase Title: Design & Construction Assistance # 1 (CS-259, CS-1488)

Phase Budget: Water	Start Date: 7/1/2017
Phase Status:	End Date: 1/7/2022
Cost Allocation:	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-259, CS-1488)	\$582	\$522	\$522	\$60	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-259)	11/27/2017	1/7/2022
Design/Engineering (CS-1488)	7/1/2017	6/28/2019

Project Title: Park-Merriman Road Water Transmission Main

Phase: Construction (Build) # 1 (1802775, CON-268?)

Phase Title: Construction (Build) # 1 (1802775, CON-268?)

Phase Budget: Water

Start Date: 3/11/2019

Phase Status:

End Date: 2/21/2022

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction (Build) # 1 (1802775, CON-268?)	\$7,217	\$5,920	\$5,920	\$1,296	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (1802775)	3/11/2019	2/21/2022

Project Title: Park-Merriman Road Water Transmission Main

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$4,000	\$1,800	\$2,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
2019	\$6,186	\$23	\$955	\$3,676	\$1,549	\$6	\$0	\$0	\$0	\$0	\$0	\$6,209
2020	\$6,980	\$156	\$1,067	\$4,737	\$2,237	\$6	\$0	\$0	\$0	\$0	\$0	\$8,203
2021	\$2,163	\$0	\$988	\$4,474	\$2,163	\$0	\$0	\$0	\$0	\$0	\$0	\$7,625
2022	\$8	\$0	\$832	\$4,390	\$4,370	\$8	\$0	\$0	\$0	\$0	\$0	\$9,601

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$9,318,297	\$7,938,299	\$1,380,001	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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: 14 Mile Transmission Main Loop

Project Status: Active - Procurement - Construction

CIP Type: Project

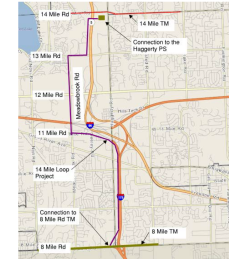
Class Lvl 1: Water

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:** 79.60

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

Risk Committee Weighted Score: 76.00

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

Project Title: 14 Mile Transmission Main Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 3/20/2019

Phase Status:
End Date: 1/10/2025

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$965	\$782	\$782	\$51	\$51	\$52	\$27	\$0	\$0	\$131	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/20/2019	1/10/2025
Capital Delivery Salary	3/20/2019	1/10/2025
Contractual Professional Services	3/20/2019	1/10/2025
Other Capital Improvement Costs	3/20/2019	1/10/2025
Other Capital Improvement Costs	3/20/2019	1/10/2025
Interlocal Agreement or Intergovernmental Agreement	3/20/2019	1/10/2025
Capitalized Interest	3/20/2019	1/10/2025

Project Title: 14 Mile Transmission Main Loop

Phase: Design & Construction Assistance # 1 (1802448)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	3/20/2019
Phase Status:	Active	End Date:	1/10/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (1802448)	\$9,632	\$5,707	\$5,707	\$1,108	\$1,108	\$1,111	\$595	\$0	\$0	\$2,816	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1802448)	3/20/2019	1/10/2025

Project Title: 14 Mile Transmission Main Loop

Phase: Construction (Build) # 1 (1903312)

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:	8/15/2022
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	5 Year Total
Construction (Build) # 1 (1903312)	\$6,185	\$3,973	\$3,973	\$1,959	\$252	\$252

Phase Dates

Activity Name	Start Date	End Date
Construction (1903312)	8/11/2020	8/15/2022
Construction Materials (1903312)	8/11/2020	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:	12/12/2019
Phase Status:	Future Planned Start	End Date:	1/10/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	\$94,635	\$0	\$0	\$23,761	\$28,222	\$28,051	\$14,599	\$70,874

Phase Dates

Activity Name	Start Date	End Date
Construction	9/1/2021	1/10/2025
Construction Materials (Phase 2)	12/12/2019	3/8/2024

Project Title: 14 Mile Transmission Main Loop

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$28,500	\$1,300	\$10,500	\$12,000	\$6,000	\$0	\$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	\$0	\$54,426
2020	\$28,993	\$0	\$0	\$0	\$751	\$1,315	\$1,507	\$13,420	\$12,000	\$25,433	\$0	\$0	\$54,426
2021	\$69,534	\$0	\$0	\$638	\$3,762	\$1,194	\$17,085	\$17,085	\$17,085	\$17,085	\$7	\$0	\$73,941
2022	\$95,356	\$0	\$0	\$638	\$3,122	\$6,064	\$37,593	\$36,390	\$21,374	\$0	\$0	\$0	\$105,180

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$111,420,179	\$10,463,520	\$26,882,121	\$29,635,560	\$29,215,688	\$15,223,289	\$0	\$0	\$74,074,538	\$0

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 4 miles of 16-inch transmission main and 5 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. Updated 7/28/2021 VNH

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

Project Title: Downriver Transmission Main Loop

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:** 79.60

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

Risk Committee Weighted Score: 76.00

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

Project Title: Downriver Transmission Main Loop

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Future Planned Start	End Date:	10/31/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$262	\$75	\$75	\$27	\$27	\$27	\$27	\$27	\$27	\$135	\$24

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	10/31/2025
Capital Delivery Salary	6/1/2020	10/31/2025
Contractual Professional Services	6/1/2020	10/31/2025
Other Capital Improvement Costs	6/1/2020	10/31/2025
Capitalized Interest	6/1/2020	10/31/2025

Project Title: Downriver Transmission Main Loop

Phase: Design & Construction Assistance # 1 (1803942)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Future Planned Start	End Date:	10/31/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (1803942)	\$6,396	\$1,544	\$1,544	\$2,199	\$447	\$448	\$447	\$447	\$447	\$2,239	\$413

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1803942)	6/1/2020	10/31/2025

Project Title: Downriver Transmission Main Loop

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2022
Phase Status:	Future Planned Start	End Date:	10/31/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$56,302	\$0	\$0	\$0	\$7,025	\$14,524	\$14,525	\$4,525	\$4,525	\$45,125	\$11,176

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2022	10/31/2025

Project Title: Downriver Transmission Main Loop

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$15,075	\$297	\$964	\$3,051	\$10,763	\$22,122	\$0	\$0	\$0	\$37,197
2020	\$37,197	\$297	\$964	\$3,051	\$10,763	\$22,122	\$0	\$0	\$0	\$37,197
2021	\$29,516	\$1,398	\$1,748	\$3,793	\$7,984	\$8,007	\$7,984	\$6,806	\$0	\$37,744
2022	\$32,235	\$201	\$1,682	\$664	\$7,483	\$8,074	\$8,544	\$7,470	\$2,924	\$37,067

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$62,961,660	\$1,620,310	\$2,226,468	\$7,499,999	\$15,000,001	\$14,999,999	\$4,999,999	\$4,999,999	\$47,500,000	\$11,614,882

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

The scope was updated to state that four miles of the transmission main that was planned to be 16 inches in diameter will now be 24 inches in diameter to accommodate future loss of capacity that could result from slip lining and to better maintain customer meter contract pressures during an emergency condition. In addition, the estimated cost to construct the new transmission mains to complete the loop was increased from last fiscal year based on the most current construction cost estimate received from contract 1803942. VNH 7/28/2021

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Project Status: Active - Procurement - 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: 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: City of Detroit

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 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.

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

Scoring**Project Manager Weighted Score:** 84.60

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

Risk Committee Weighted Score: 81.20

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

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:	3/12/2021
Phase Status:	Future Planned Start	End Date:	1/12/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$368	\$24	\$24	\$42	\$42	\$43	\$42	\$42	\$42	\$214	\$86

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/12/2021	1/12/2029
Capital Delivery Salary	3/12/2021	1/12/2029
Contractual Professional Services	3/12/2021	1/12/2029
Other Capital Improvement Costs	3/12/2021	1/12/2029
Capitalized Interest	3/12/2021	1/12/2029

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Phase: Design/Engineering

Phase Title: Design-Build

Phase Budget: Water	Start Date: 3/12/2021
Phase Status: Future Planned Start	End Date: 1/12/2029
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY26	FY27	5 Year Total	FY28+
Design/Engineering	\$60,360	\$1,429	\$1,429	\$980	\$980	\$3,357	\$11,814	\$11,814	\$11,814	\$39,780	\$18,170

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	3/12/2021	1/12/2029
Construction (2001488)	4/12/2024	1/12/2029

Project Title: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2020	\$20,500	\$1,040	\$6,050	\$6,910	\$3,750	\$2,750	\$0	\$0	\$0	\$20,500
2021	\$29,719	\$74	\$1,794	\$3,510	\$9,223	\$7,620	\$7,572	\$30,784	\$0	\$60,577
2022	\$25,539	\$3	\$1,167	\$1,944	\$1,944	\$4,784	\$3,505	\$13,363	\$13,387	\$60,189

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$60,728,953	\$1,454,251	\$1,023,269	\$1,023,269	\$3,400,592	\$11,857,010	\$11,857,008	\$11,857,009	\$39,994,888	\$18,256,545

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

Project Status: Active - Procurement - 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: Timothy Kuhns

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: Transmission Mains

Funds and Cost Center: Water - 5519-882111

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:** 98.40

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

Risk Committee Weighted Score: 85.00

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

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA salaries

Phase Budget:	Water	Start Date:	12/1/2020
Phase Status:	Active	End Date:	6/30/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$367	\$0	\$0	\$45	\$45	\$46	\$45	\$45	\$45	\$229	\$92

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/1/2020	6/30/2029
Capital Delivery Salary	12/1/2020	6/30/2029
Contractual Professional Services	12/1/2020	6/30/2029
Other Capital Improvement Costs	12/1/2020	6/30/2029
Capitalized Interest	12/1/2020	6/30/2029

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

Phase: Design/Engineering

Phase Title: Design Build (progressive DB)

Phase Budget:	Water	Start Date:	12/1/2020
Phase Status:	Future Planned Start	End Date:	6/30/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design/Engineering	\$53,570	\$0	\$0	\$1,953	\$1,953	\$1,958	\$9,536	\$9,536	\$9,536	\$32,519	\$19,098

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (2003102)	12/1/2020	6/30/2024
Construction (2003102)	7/1/2024	6/30/2029

Project Title: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2021	\$14,456	\$121	\$1,717	\$2,037	\$2,690	\$4,006	\$4,006	\$30,000	\$0	\$44,577
2022	\$12,577	\$0	\$1,578	\$1,530	\$1,528	\$1,528	\$3,995	\$3,995	\$15,960	\$54,102

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$53,938,244	\$0	\$1,998,892	\$1,998,892	\$2,004,368	\$9,581,968	\$9,581,968	\$9,581,968	\$32,749,164	\$19,190,188

Description of CIP Changes:

New project - no changes from previous versions

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Project Status: Closed

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: 6/26/2014

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Oakland County

Lookup Location: West Service Center

Funds and Cost Center: Water - 5519-882111

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 intermediate-pressure pumping systems have to be temporarily shutdown.

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

Scoring**Project Manager Weighted Score:** 75.70

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

Risk Committee Weighted Score: 79.60

Criteria Name	Score	Comment
Condition	5	Scores carried over from 2021-2025 CIP
Performance (Service Level/Reliability)	5	Scores carried over from 2021-2025 CIP
Regulatory (Environmental/Legal)	3	Scores carried over from 2021-2025 CIP
Operations and Maintenance	4	Scores carried over from 2021-2025 CIP
Health and Safety	3	Scores carried over from 2021-2025 CIP
Public Benefit	4	Scores carried over from 2021-2025 CIP
Financial	2	Scores carried over from 2021-2025 CIP
Efficiency and Innovation	2	Scores carried over from 2021-2025 CIP

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: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$48	\$48	\$48	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/2/2017	8/13/2020
Capital Delivery Salary	7/2/2017	8/13/2020
Professional Services	7/24/2016	12/31/2020
Contractual Professional Services	7/2/2017	8/13/2020
Other Capital Improvement Costs	7/2/2017	8/13/2020
Capitalized Interest	7/2/2017	8/13/2020

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Phase: Design & Construction Assistance # 1 (CS-062)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	7/2/2017
Phase Status:	Active	End Date:	8/13/2020
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-062)	\$211	\$211	\$211	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-062)	7/2/2017	8/13/2020

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Phase: Construction (Build) # 1 (CON-270)

Phase Title: Construction

Phase Budget: Water	Start Date: 11/27/2018
Phase Status: Active	End Date: 8/13/2020
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1 (CON-270)	\$1,482	\$1,482	\$1,482	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-270)	11/27/2018	8/13/2020

Project Title: West Service Center Pumping Station, Isolation Gate Valves for Line Pumps

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$1,521	\$521	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,521
2019	\$1,325	\$147	\$1,229	\$96	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,538
2020	\$490	\$138	\$1,186	\$490	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,814
2021	\$65	\$0	\$248	\$1,666	\$65	\$0	\$0	\$0	\$0	\$0	\$0	\$1,979
2022	\$0	\$59	\$110	\$1,576	\$218	\$0	\$0	\$0	\$0	\$0	\$0	\$1,962

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$1,742,478	\$1,742,478	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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

Project Status: Pending Closeout

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:
6/26/2014

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Water Booster Pumping Stations

Funds and Cost Center: Water - 5519-882111

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:** 67.70

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

Risk Committee Weighted Score: 47.90

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

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:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$115	\$115	\$115	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/9/2017	6/30/2021
Capital Delivery Salary	9/9/2017	6/30/2021
Professional Services	6/6/2016	4/30/2021
Contractual Professional Services	9/9/2017	6/30/2021
Other Capital Improvement Costs	9/9/2017	6/30/2021
Capitalized Interest	9/9/2017	6/30/2021

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Phase: Design & Construction Assistance # 1 (CS-1749, CS-052)

Phase Title: Design & Construction Assistance # 1 (CS-1749, CS-052)

Phase Budget: Water

Start Date: 9/9/2017

Phase Status:

End Date: 12/8/2020

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-1749, CS-052)	\$535	\$535	\$535	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-1749)	9/9/2017	12/8/2020
Design/Engineering (CS-052)	6/1/2020	6/30/2020

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Phase: Construction (Build) # 1 (1803538)

Phase Title: Construction (Build) # 1 (1803538)

Phase Budget: Water

Start Date: 7/31/2019

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Construction (Build) # 1 (1803538)	\$2,575	\$2,575	\$2,575	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (1803538)	7/31/2019	6/30/2021

Project Title: Ford Road Pumping Station, Pressure and Control Improvements

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$3,000	\$200	\$2,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,000
2019	\$2,495	\$106	\$245	\$1,805	\$445	\$0	\$0	\$0	\$0	\$0	\$0	\$2,609
2020	\$2,533	\$161	\$235	\$2,515	\$18	\$0	\$0	\$0	\$0	\$0	\$0	\$2,929
2021	\$1,954	\$0	\$289	\$1,036	\$987	\$959	\$8	\$0	\$0	\$0	\$0	\$3,279
2022	\$0	\$45	\$128	\$1,712	\$1,480	\$0	\$0	\$0	\$0	\$0	\$0	\$3,364

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$3,226,044	\$3,226,044	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Description of CIP Changes:

Projected moved from Procurement to Construction.

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

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: Vittoria Hogue

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: Lapeer County

Lookup Location: Imlay Pumping Station

Funds and Cost Center: Water - 5519-882111

Problem Statement:

This CIP project will address two principle needs. The first is the need to replace an existing large pumping unit 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 1,100 HP motor. The associated VFD, valves, piping and appurtenances will also be removed and replaced to accommodate the new smaller pump. VHN 7/29/2021

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:** 54.40

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

Risk Committee Weighted Score: 35.10

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

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 6/1/2020
Phase Status: Active	End Date: 8/30/2022
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$205	\$166	\$166	\$32	\$5	\$0	\$0	\$0	\$0	\$5	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	8/30/2022
Capital Delivery Salary	6/1/2020	8/30/2022
Contractual Professional Services	6/1/2020	8/30/2022
Other Capital Improvement Costs	6/1/2020	8/30/2022
Capitalized Interest	6/1/2020	8/30/2022

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

Phase: Design-Build # 1 (1900516)

Phase Title: Imlay Pumping Station Pump Right Sizing

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Active	End Date:	8/30/2022
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design-Build # 1 (1900516)	\$4,940	\$760	\$760	\$4,071	\$109	\$0	\$0	\$0	\$0	\$109	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (JOC Contract)	6/1/2020	6/30/2020
Construction	6/1/2020	8/30/2022

Project Title: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$1,000	\$200	\$500	\$300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000
2019	\$557	\$0	\$38	\$385	\$134	\$0	\$0	\$0	\$0	\$0	\$0	\$557
2020	\$2,137	\$9	\$14	\$592	\$1,315	\$230	\$0	\$0	\$0	\$0	\$0	\$2,160
2021	\$4,417	\$0	\$97	\$685	\$4,211	\$206	\$0	\$0	\$0	\$0	\$0	\$5,199
2022	\$4,046	\$0	\$88	\$80	\$974	\$3,963	\$84	\$0	\$0	\$0	\$0	\$5,188

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,146,158	\$927,112	\$4,103,858	\$115,188	\$0	\$0	\$0	\$0	\$115,188	\$0

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

The during design the size of the motor needed for the new pump was changed from 1500 HP to 1100 HP. This was modified in the scope of work section. VNH 7/29/2021

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

Project Status: Project Execution - Construction

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: 10/11/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Oakland County

Lookup Location: West Service Center

Funds and Cost Center: Water - 5519-882111

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:** 81.20

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

Risk Committee Weighted Score: 62.60

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

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:	3/15/2020
Phase Status:	Future Planned Start	End Date:	7/12/2024
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$287	\$163	\$163	\$59	\$59	\$5	\$0	\$0	\$0	\$64	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/15/2020	7/12/2024
Capital Delivery Salary	3/15/2020	7/12/2024
Contractual Professional Services	3/15/2020	7/12/2024
Other Capital Improvement Costs	3/15/2020	7/12/2024
Capitalized Interest	3/15/2020	7/12/2024

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

Phase: Design-Build # 1 (1803312, CS-1772)

Phase Title: Design-Build

Phase Budget: Water	Start Date: 3/15/2020
Phase Status: Under Procurement	End Date: 7/12/2024
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
	Tot. Federal Loan Amount: \$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	5 Year Total
Design-Build # 1 (1803312, CS-1772)	\$44,989	\$8,583	\$8,583	\$19,339	\$16,629	\$436	\$0	\$17,066

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	3/15/2020	3/31/2021
Construction (882111.000)	4/1/2021	7/12/2024
Construction (882411.000)	4/1/2021	7/12/2024

Project Title: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 5/1/2010**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$311	\$311	\$311

Phase Dates

Activity Name	Start Date	End Date
Pre-CAFR Actuals	5/1/2010	6/30/2015
FY21 Baseline	7/1/2020	6/30/2021

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	FY25	FY26	FY27	Total
2018	\$11,800	\$7,600	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$11,800
2019	\$34,530	\$0	\$0	\$2,620	\$7,430	\$15,570	\$8,910	\$2,606	\$0	\$0	\$0	\$37,136
2020	\$37,136	\$0	\$0	\$2,620	\$7,430	\$15,570	\$8,910	\$2,606	\$0	\$0	\$0	\$37,136
2021	\$36,746	\$0	\$296	\$663	\$4,323	\$12,209	\$11,853	\$8,361	\$0	\$0	\$0	\$37,705
2022	\$37,727	\$0	\$296	\$1,853	\$5,267	\$17,149	\$19,927	\$650	\$0	\$0	\$0	\$45,142

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$45,588,358	\$9,058,202	\$19,398,866	\$16,689,330	\$441,960	\$0	\$0	\$0	\$17,131,290	\$0

Description of CIP Changes:

Updated cost projections & schedule. AJ - 7/7/2021

Project Title: Ypsilanti 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)**



Existing Ypsi station

Project Engineer/Manager: Jorge Nicolas

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 9/28/2017

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Water Plants & Booster Pump Stations

Funds and Cost Center: Water - 5519-882111

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:** 82.40

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

Risk Committee Weighted Score: 65.00

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

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	2/1/2020
Phase Status:	Active	End Date:	7/15/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$299	\$58	\$58	\$30	\$30	\$30	\$30	\$30	\$30	\$150	\$60

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/1/2020	7/15/2026
Capital Delivery Salary	2/1/2020	7/15/2026
Contractual Professional Services	2/1/2020	7/15/2026
Other Capital Improvement Costs	2/1/2020	7/15/2026
Capitalized Interest	2/1/2020	7/15/2026

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: Study & Design & Construction Assistance # 1 (CS-267, CS-052)

Phase Title: Study/Design/Construction Administration

Phase Budget:	Water	Start Date:	2/1/2020
Phase Status:	Active	End Date:	7/15/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-267, CS-052)	\$2,589	\$456	\$456	\$1,058	\$169	\$169	\$120	\$153	\$153	\$766	\$307

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-267)	2/1/2020	7/15/2026
Design/Engineering (CS-052)	6/1/2020	6/30/2020

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	10/1/2021
Phase Status:	Future Planned Start	End Date:	6/30/2026
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$36,194	\$0	\$0	\$1,500	\$0	\$0	\$2,429	\$2,816	\$4,816	\$10,062	\$24,632

Phase Dates

Activity Name	Start Date	End Date
Construction	10/23/2023	6/30/2026
Construction - Property Aquisition	10/1/2021	10/29/2021

Project Title: Ypsilanti Booster Pumping Station Improvements

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$8,247	\$93	\$606	\$820	\$2,594	\$4,134	\$900	\$0	\$0	\$0	\$9,147
2020	\$9,829	\$28	\$585	\$865	\$2,855	\$4,205	\$1,319	\$0	\$0	\$0	\$9,861
2021	\$27,176	\$21	\$712	\$846	\$846	\$3,827	\$9,721	\$11,936	\$3,708	\$0	\$31,617
2022	\$29,445	\$17	\$316	\$614	\$584	\$6,718	\$9,797	\$9,771	\$2,575	\$5,000	\$35,394

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$39,084,046	\$515,125	\$2,588,921	\$200,000	\$200,000	\$2,580,000	\$3,000,000	\$5,000,000	\$10,980,000	\$25,000,000

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 build a new station adjacent to the current site may be cost comparable.

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

Scoring**Project Manager Weighted Score:** 66.90

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

Risk Committee Weighted Score: 66.00

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

Project Title: Adams Road Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Future Planned Start	End Date:	6/30/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$417	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$232

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2030
Capital Delivery Salary	6/1/2020	6/30/2030
Contractual Professional Services	6/1/2020	6/30/2030
Other Capital Improvement Costs	6/1/2020	6/30/2030
Capitalized Interest	6/1/2020	6/30/2030

Project Title: Adams Road Pumping Station Improvements

Phase: Design & Construction Assistance # 1 (CS-052A, TBD)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Future Planned Start	End Date:	6/30/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (CS-052A, TBD)	\$7,750	\$83	\$83	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,181

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	6/1/2020	6/30/2030
Design/Engineering (CS-052)	6/1/2020	6/30/2020

Project Title: Adams Road Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2026
Phase Status:	Future Planned Start	End Date:	6/30/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$44,706	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2026	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	FY27	Total
2019	\$1,051	\$21	\$1,030	\$4,625	\$0	\$0	\$0	\$5,676
2020	\$3,362	\$21	\$1,029	\$2,312	\$2,312	\$0	\$0	\$5,674
2021	\$1,143	\$0	\$13	\$205	\$925	\$26,393	\$0	\$27,536
2022	\$4,951	\$203	\$1,332	\$1,157	\$1,130	\$1,130	\$1,459	\$52,864

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$52,875,451	\$83,262	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,413,171

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:** 79.20

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

Risk Committee Weighted Score: 58.90

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

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 2/5/2020

Phase Status:
End Date: 6/30/2027

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$249	\$16	\$16	\$28	\$0	\$0	\$0	\$0	\$0	\$0	\$204

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/5/2020	6/30/2027
Capital Delivery Salary	2/5/2020	6/30/2027
Contractual Professional Services	2/5/2020	6/30/2027
Other Capital Improvement Costs	2/5/2020	6/30/2027
Capitalized Interest	2/5/2020	6/30/2027

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: Design & Construction Assistance # 1 (1901767, CS-052)

Phase Title: Design & Construction Assistance # 1 (1901767, CS-052)

Phase Budget: Water

Start Date: 2/5/2020

Phase Status:

End Date: 6/30/2027

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (1901767, CS-052)	\$3,170	\$427	\$427	\$514	\$0	\$0	\$0	\$0	\$0	\$0	\$2,228

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1901767)	2/5/2020	6/30/2027
Design/Engineering (CS-052)	6/1/2020	6/30/2020

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: Construction (Build) # 1

Phase Budget: Water

Start Date: 12/16/2023

Phase Status:

End Date: 6/30/2027

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$41,662	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$41,662

Phase Dates

Activity Name	Start Date	End Date
Construction	12/16/2023	6/30/2027

Project Title: Newburgh Road Booster Pumping Station Improvements

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$7,795	\$607	\$2,396	\$2,396	\$2,396	\$4,375	\$0	\$0	\$0	\$12,170
2020	\$7,858	\$16	\$621	\$2,396	\$2,396	\$2,429	\$4,311	\$0	\$0	\$12,169
2021	\$23,203	\$581	\$973	\$1,595	\$5,216	\$6,286	\$9,133	\$6,890	\$0	\$30,677
2022	\$36,462	\$348	\$851	\$733	\$2,366	\$8,839	\$12,525	\$12,000	\$7,380	\$45,044

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$45,083,236	\$444,073	\$542,946	\$0	\$0	\$0	\$0	\$0	\$0	\$44,096,217

Description of CIP Changes:

Updated the schedule to align with the design schedule. - AJ 7/27/2021

Project Title: North Service Center Pumping Station Improvements

Project Status: Active - Procurement - 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: Mike Garrett

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: North Service Center

Funds and Cost Center: Water - 5519-882111

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 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

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

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:** 67.40

Criteria Name	Score	Comment
Condition	5	facility has exceeded its design service life
Performance (Service Level/Reliability)	4	unchanged
Regulatory (Environmental/Legal)	2	unchanged
Operations and Maintenance	4	unchanged
Health and Safety	3	unchanged
Public Benefit	4	unchanged
Financial	2	unchanged
Efficiency and Innovation	5	unchanged

Risk Committee Weighted Score: 59.40

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

Project Title: North Service Center Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	8/17/2020
Phase Status:	Future Planned Start	End Date:	6/30/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$519	\$106	\$106	\$0	\$45	\$46	\$45	\$45	\$45	\$229	\$183

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/13/2022	6/30/2029
Capital Delivery Salary	1/13/2022	6/30/2029
Capital Delivery Salary	1/13/2022	6/30/2029
Capital Delivery Salary	1/13/2022	6/30/2029
Professional Services (CS-272 - 71019A.01)	8/17/2020	12/31/2020
Contractual Professional Services	12/10/2020	6/30/2029
Other Capital Improvement Costs	12/10/2020	6/30/2029
Capitalized Interest	12/10/2020	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:	1/13/2022
Phase Status:	Future Planned Start	End Date:	6/30/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1	\$257	\$257	\$257	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-052)	1/13/2022	7/13/2023
Design/Engineering (D&CA)	7/1/2024	6/30/2029

Project Title: North Service Center Pumping Station Improvements

Phase: Design & Construction Assistance # 2 - AECOM

Phase Title: Design & Construction Assistance # 2 - AECOM

Phase Budget: Water

Start Date: 12/10/2020

Phase Status:

End Date: 12/15/2020

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY27	5 Year Total
Design & Construction Assistance # 2 - AECOM	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	12/10/2020	12/15/2020

Project Title: North Service Center Pumping Station Improvements

Phase: Construction (Build) # 1

Phase Title: North Service Center BPS Improvements

Phase Budget:	Water	Start Date:	1/10/2024
Phase Status:	Future Planned Start	End Date:	1/1/2029
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$81,486	\$0	\$0	\$454	\$953	\$954	\$1,954	\$4,954	\$9,270	\$72,216

Phase Dates

Activity Name	Start Date	End Date
Construction	1/10/2024	1/1/2029

Project Title: North Service Center Pumping Station Improvements

Phase: Construction # 2 - AECOM

Phase Title: Construction # 2 - AECOM

Phase Budget: Water

Start Date: 7/26/2021

Phase Status:

End Date: 7/27/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Construction # 2 - AECOM	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction #2 - AECOM	7/26/2021	7/27/2021

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	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$4,526	\$0	\$6	\$4,520	\$20,394	\$0	\$0	\$0	\$24,920
2020	\$6,331	\$0	\$0	\$6	\$6,325	\$18,589	\$0	\$0	\$24,920
2021	\$4,517	\$0	\$21	\$279	\$2,385	\$1,832	\$40,825	\$0	\$45,342
2022	\$15,500	\$282	\$673	\$1,727	\$2,351	\$2,247	\$8,503	\$20,804	\$68,254

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$82,263,479	\$363,478	\$0	\$500,000	\$1,000,000	\$1,000,000	\$2,000,000	\$5,000,000	\$9,500,000	\$72,400,000

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.

Schedule updates, which in turn changed escalation of costs.

Project Title: Schoolcraft Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP

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: Water - 5519-882111

Problem Statement:

Following the Pump Station Condition Survey and Needs Assessment, significant issues were observed in the Schoolcraft Pumping Station. This needs assessment has found several significant areas of necessary improvement to the station as described in the project scope for 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:

This project is scheduled to begin in the 5-10 year time period.

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:** 57.40

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

Risk Committee Weighted Score: 58.90

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

Project Title: Schoolcraft Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	7/2/2038
Phase Status:	Future Planned Start	End Date:	7/1/2046
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	\$3,265	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/2/2038	7/1/2046
Capital Delivery Salary	7/2/2038	7/1/2046
Contractual Professional Services	7/2/2038	7/1/2046
Capitalized Interest	7/2/2038	7/1/2046

Project Title: Schoolcraft Pumping Station Improvements

Phase: Design/Engineering

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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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/Engineering	\$47	\$47	\$47

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-052)	7/2/2038	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	Total
2019	\$4,011	\$10	\$1,916	\$2,085	\$6,553	\$10,564
2020	\$7,064	\$10	\$1,958	\$2,048	\$3,048	\$10,564
2022	\$0	\$0	\$0	\$0	\$0	\$47

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Total Costs	Prior FYs
\$24,468,666	\$47,317

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, 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

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

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:** 66.60

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

Risk Committee Weighted Score: 67.20

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

Project Title: Wick Road Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWAs Salaries

Phase Budget:	Water	Start Date:	7/1/2026
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$309	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$257

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2026	6/30/2031
Capital Delivery Salary	7/1/2026	6/30/2031
Contractual Professional Services	7/1/2026	6/30/2031
Other Capital Improvement Costs	7/1/2026	6/30/2031
Capitalized Interest	7/1/2026	6/30/2031

Project Title: Wick Road Pumping Station Improvements

Phase: Design & Construction Assistance # 1 (TBD, CS-052A)

Phase Title: Wick Road Booster Pumping Station - Switchgear, Control Valves and Hydropneumatic Tank Replacement Design and Construction Assistance

Phase Budget: Water	Start Date: 6/1/2020
Phase Status: Future Planned Start	End Date: 6/30/2031
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: Yes
Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (TBD, CS-052A)	\$4,360	\$56	\$56	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,545

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2026	6/30/2031
Design/Engineering (CS-052)	6/1/2020	6/30/2020

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:	7/1/2029
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Construction (Build) # 1	\$19,990	\$0	\$0	\$2,268

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2029	6/30/2031

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	FY27	Total
2019	\$1,015	\$6	\$1,009	\$4,555	\$0	\$0	\$0	\$5,570
2020	\$5,569	\$6	\$1,009	\$4,554	\$0	\$0	\$0	\$5,569
2021	\$15	\$0	\$0	\$0	\$15	\$2,925	\$0	\$2,940
2022	\$13	\$0	\$0	\$0	\$0	\$13	\$549	\$9,358

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$24,660,878	\$56,912	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,072,323

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

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: Grant Gartrell

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: Oakland County

Lookup Location: Franklin Pump Station

Funds and Cost Center: Water - 5519-882111

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 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.

Scope of Work/Project Alternatives:

This project includes complete reconstruction of the Franklin Booster Station.

Other Important Info:

Project will include alternatives evaluation to determine building new station versus rehabilitating existing.

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

Scoring**Project Manager Weighted Score:** 78.40

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

Risk Committee Weighted Score: 77.70

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

Project Title: Franklin Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	1/4/2028
Phase Status:	Future Planned Start	End Date:	6/28/2034
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$119	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$119

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/4/2028	6/28/2034
Capital Delivery Salary	1/4/2028	6/28/2034
Contractual Professional Services	1/4/2028	6/28/2034
Other Capital Improvement Costs	1/4/2028	6/28/2034
Capitalized Interest	1/4/2028	6/28/2034

Project Title: Franklin Pumping Station Improvements

Phase: Design (TBD, CS-052A)

Phase Title: Design/Construction Administration

Phase Budget: Water

Start Date: 6/1/2020

Phase Status: Future Planned Start

End Date: 6/28/2034

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design (TBD, CS-052A)	\$4,693	\$93	\$93	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,600

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (TBD)	1/4/2028	6/28/2034
Design/Engineering (CS-052)	6/1/2020	6/30/2020

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	FY27	Total
2019	\$2,855	\$846	\$2,009	\$7,315	\$0	\$0	\$0	\$10,170
2020	\$0	\$0	\$0	\$0	\$10,109	\$0	\$0	\$10,109
2021	\$0	\$0	\$0	\$0	\$0	\$2,442	\$0	\$2,442
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$42	\$2,545

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$4,812,513	\$93,160	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,719,353

Description of CIP Changes:

Project budget updated based on CS-052A Needs Assessment Report.

Project Title: Imlay Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP

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:** 64.50

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

Risk Committee Weighted Score: 59.40

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

Project Title: Imlay Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:	Water	Start Date:	4/26/2031
Phase Status:	Future Planned Start	End Date:	6/24/2041
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/26/2031	6/24/2041
Capital Delivery Salary	4/26/2031	6/24/2041
Contractual Professional Services	4/26/2031	6/24/2041
Other Capital Improvement Costs	4/26/2031	6/24/2041
Capitalized Interest	4/26/2031	6/24/2041

Project Title: Imlay Pumping Station Improvements

Phase: Design (TBD, CS-052A)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Future Planned Start	End Date:	6/24/2041
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design (TBD, CS-052A)	\$227	\$227	\$227	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (TBD)	4/26/2031	6/24/2041
Design/Engineering (CS-052)	6/1/2020	6/30/2020

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
2022	\$0	\$0	\$0	\$0	\$0	\$750

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$227,346	\$227,346	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Description of CIP Changes:

n/a

Project Title: Joy 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)**



Inside Joy Road Pumping Station

Project Engineer/Manager: Jacob Mangum

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: Joy Rd Water Pumping Station

Funds and Cost Center: Water - 5519-882111

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 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

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

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 well as other upgrades

Project Title: Joy Road Pumping Station Improvements

Scoring**Project Manager Weighted Score:** 63.60

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

Risk Committee Weighted Score: 58.90

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

Project Title: Joy Road Pumping Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water	Start Date: 8/31/2023
Phase Status: Future Planned Start	End Date: 7/2/2030
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$367	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/31/2023	7/2/2030
Capital Delivery Salary	8/31/2023	7/2/2030
Contractual Professional Services	8/31/2023	7/2/2030
Other Capital Improvement Costs	8/31/2023	7/2/2030
Capitalized Interest	8/31/2023	7/2/2030

Project Title: Joy Road Pumping Station Improvements

Phase: Design & Construction Assistance # 1 (TBD, CS-052A)

Phase Title: Design/Construction Administration

Phase Budget:	Water	Start Date:	6/1/2020
Phase Status:	Future Planned Start	End Date:	3/31/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design & Construction Assistance # 1 (TBD, CS-052A)	\$3,536	\$71	\$71	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (TBD)	8/31/2023	3/31/2030
Design/Engineering (CS-052)	6/1/2020	6/30/2020

Project Title: Joy Road Pumping Station Improvements

Phase: Construction (Build) # 1**Phase Title:** Construction

Phase Budget:	Water	Start Date:	7/1/2026
Phase Status:	Future Planned Start	End Date:	7/2/2030
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	5 Year Total	FY28+
Construction (Build) # 1	\$35,781	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2026	7/2/2030

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	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$6	\$0	\$0	\$6	\$6,103	\$0	\$0	\$0	\$6,109
2020	\$6,109	\$0	\$0	\$6	\$6,103	\$0	\$0	\$0	\$6,109
2021	\$0	\$0	\$0	\$0	\$0	\$0	\$48	\$0	\$55
2022	\$1,527	\$57	\$277	\$527	\$527	\$122	\$74	\$1,046	\$39,613

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$39,684,595	\$71,380	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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

Project Status: Pending Closeout

CIP Type: Allowance

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: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared:
 9/24/2018

Year Project Added to CIP: 2019

CIP Budget: Water

Project Jurisdiction: Oakland County

Lookup Location: Booster Pumping Stations

Funds and Cost Center: Water - 5519-882111

Problem Statement:

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.

Scope of Work/Project Alternatives:

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.

Other Important Info:

Just in kind replacement of valves. There is another CIP for the complete rebuild of the station. CIP 132020

Primary Driver: 1 - Condition

Driver Explanation:

Current valves that require replacement are in service for over 45 years

Project Title: Franklin Pumping Station 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	
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	
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: 3/15/2019

Phase Status:
End Date: 12/31/2020

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$16	\$16	\$16	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/15/2019	12/31/2020
Capital Delivery Salary	3/15/2019	12/31/2020
Contractual Professional Services	3/15/2019	12/31/2020
Other Capital Improvement Costs	3/15/2019	12/31/2020
Capitalized Interest	3/15/2019	12/31/2020

Project Title: Franklin Pumping Station Valve Replacement

Phase: Construction (Build) # 1 (1802146, CS-166)

Phase Title: Construction (Build) # 1 (1802146, CS-166)

Phase Budget: Water

Start Date: 7/1/2018

Phase Status:

End Date: 12/31/2020

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Construction (Build) # 1 (1802146, CS-166)	\$969	\$963	\$963	\$6

Phase Dates

Activity Name	Start Date	End Date
Construction (1802146)	3/15/2019	12/31/2020
Construction (CS-166)	7/1/2018	12/31/2020

Project Title: Franklin Pumping Station Valve Replacement

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	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	FY23	FY24	FY25	FY26	FY27	Total
2021	\$962	\$449	\$613	\$349	\$0	\$0	\$0	\$0	\$0	\$1,411
2022	\$0	\$788	\$185	\$0	\$0	\$0	\$0	\$0	\$0	\$1,006

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$986,376	\$980,043	\$6,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Description of CIP Changes:

Schedule Change

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

Project Status: Project Execution - Design

CIP Type: Allowance

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: Nick Hoffman

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: 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	
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	
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: 6/17/2017
Phase Status:	End Date: 4/1/2022
Cost Allocation:	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	5 Year Total
GLWA Salaries	\$235	\$192	\$192	\$21	\$21	\$21

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/17/2017	4/1/2022
Capital Delivery Salary	6/17/2017	4/1/2022
Professional Services	7/1/2018	6/13/2020
Contractual Professional Services	6/17/2017	4/1/2022
Other Capital Improvement Costs	6/17/2017	4/1/2022
Capitalized Interest	6/17/2017	4/1/2022

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

Phase: Study # 1 (CS-187, CS-1623)

Phase Title: GLWA-CS-187: FK Eng: Raw Water Intake

Phase Budget: Water	Start Date: 7/1/2015
Phase Status: Active	End Date: 4/1/2022
Cost Allocation: CTA	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study # 1 (CS-187, CS-1623)	\$1,537	\$1,463	\$1,463	\$27	\$46	\$0	\$0	\$0	\$0	\$46	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-187)	6/17/2017	4/1/2022
Design/Engineering (CS-1623)	7/1/2015	6/16/2017

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	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,656

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$1,773,069	\$1,656,069	\$49,000	\$68,000	\$0	\$0	\$0	\$0	\$68,000	\$0

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: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

Project Status: Closed

CIP Type: Allowance

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: Peter Fromm

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: System-wide

Funds and Cost Center: Water - 5519-882111

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	
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	
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:	5/23/2018
Phase Status:	Active	End Date:	7/5/2021
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/23/2018	7/5/2021
Capital Delivery Salary	5/23/2018	7/5/2021
Contractual Professional Services	5/23/2018	7/5/2021
Other Capital Improvement Costs	5/23/2018	7/5/2021
Capitalized Interest	5/23/2018	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 (CS-201)

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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-201)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	5/23/2018	7/5/2021

Project Title: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY23	FY24	FY25	FY26	FY27	Total
2018	\$1,500	\$500	\$500	\$500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,500
2019	\$1,616	\$172	\$472	\$572	\$572	\$0	\$0	\$0	\$0	\$0	\$0	\$1,788
2020	\$1,144	\$2	\$472	\$572	\$572	\$0	\$0	\$0	\$0	\$0	\$0	\$1,618
2021	\$694	\$0	\$64	\$1,057	\$685	\$9	\$0	\$0	\$0	\$0	\$0	\$1,815
2022	\$0	\$0	\$62	(\$62)	\$1,427	\$0	\$0	\$0	\$0	\$0	\$0	\$1,427

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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 Operations

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.

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

Project Title: Water Treatment Plant Automation Program

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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Water Treatment Plant Automation Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2022

Phase Status:
End Date: 10/20/2028

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$183	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$183

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	10/20/2028
Capital Delivery Salary	7/1/2022	10/20/2028
Contractual Professional Services	7/1/2022	10/20/2028
Other Capital Improvement Costs	7/1/2022	10/20/2028
Capitalized Interest	7/1/2022	10/20/2028

Project Title: Water Treatment Plant Automation Program

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 7/1/2022

Phase Status:
End Date: 7/31/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	5 Year Total
Design/Engineering	\$9	\$9	\$9	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2022	7/31/2022

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: 7/1/2022
Phase Status:	End Date: 10/20/2028
Cost Allocation:	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$0.00

Phase Comments/Description:

Multiple Scada Projects going forth with addition of 3 new projects to be added

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	FY27	5 Year Total	FY28+
TBD / Future Allocation / General Holding TBD	\$23,065	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,065

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2022	10/20/2028

Project Title: Water Treatment Plant Automation Program

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Total
2018	\$7,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$0	\$0	\$0	\$7,500
2019	\$6,258	\$1,425	\$61	\$1,561	\$1,561	\$1,561	\$1,514	\$105	\$0	\$7,801
2020	\$6,302	\$1,377	\$61	\$1,561	\$1,561	\$1,561	\$1,514	\$105	\$0	\$7,740
2021	\$13,862	\$0	\$1,658	\$3,208	\$5,440	\$2,943	\$1,211	\$3,117	\$1,151	\$18,728
2022	\$6,151	\$0	\$0	\$0	\$7,098	\$6,151	\$0	\$0	\$0	\$13,249

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$23,257,999	\$9,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$23,248,999

Description of CIP Changes:

N/A

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

☐ **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)**



SW SCADA System Upgrade

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Managing Dept.: Water Operations

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: Southwest Water Treatment Plant

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, controllers and removal of device net for the SCADA system.

Other Important Info:

This project will also upgrade Ovation to version 3.8

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	Scores carried over from previous year
Performance (Service Level/Reliability)	1	Scores carried over from previous year
Regulatory (Environmental/Legal)	1	Scores carried over from previous year
Operations and Maintenance	1	Scores carried over from previous year
Health and Safety	1	Scores carried over from previous year
Public Benefit	1	Scores carried over from previous year
Financial	1	Scores carried over from previous year
Efficiency and Innovation	1	Scores carried over from previous year

Risk Committee Weighted Score: 20.00

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

Project Title: SW SCADA System Upgrade

Phase: Capital Delivery Salary

Phase Title: Capital Delivery Salary

Phase Budget: Water

Start Date: 7/7/2020

Phase Status:

End Date: 7/1/2023

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Capital Delivery Salary	\$180	\$74	\$74	\$53	\$52	\$0	\$52

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/7/2020	7/1/2023
Capital Delivery Salary	7/7/2020	7/1/2023
Professional Services (CS-272 - 71014A.01 / 71014B.01)	7/7/2020	5/19/2023
Contractual Professional Services	1/1/2021	6/30/2023
Other Capital Improvement Costs	1/1/2021	6/30/2023
Capitalized Interest	1/1/2021	6/30/2023

Project Title: SW SCADA System Upgrade

Phase: TBD / Future Allocation / General Holding

Phase Title: SW SCADA System Upgrade

Phase Budget:	Water	Start Date:	1/1/2021
Phase Status:	Project Execution	End Date:	6/30/2023
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$0.00

Phase Comments/Description:

DB project Contract 2001051

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	FY22	FY23	5 Year Total
TBD / Future Allocation / General Holding	\$7,798	\$0	\$0	\$3,851	\$3,947	\$3,947

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	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	5 Year Total	FY21	FY22	FY23	Total
2022	\$7,212	\$1,788	\$3,606	\$3,606	\$9,000

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
\$7,979,364	\$74,413	\$3,904,951	\$4,000,000	\$0	\$4,000,000

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: 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: Jeffrey Dorsey

Director: Terry Daniel

Managing Dept.: Water Operations

Date Original Business Case Prepared:
7/13/2020

Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Northeast, Southwest and Water Works Park

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:

Power monitoring will be installed on critical pumping units and switchgear mains.

Primary Driver: 8 - Efficiency

Driver Explanation:

This will provide valuable power data.

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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Power Monitoring Installation for Water Treatment Plants

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/13/2020

Phase Status:

End Date: 12/30/2022

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	5 Year Total
GLWA Salaries	\$136	\$52	\$52	\$61	\$22	\$22

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/23/2021	10/23/2022
Capital Delivery Salary	3/23/2021	10/23/2022
Professional Services (CS-272 - 71016A.01)	7/13/2020	12/30/2022
Contractual Professional Services	3/23/2021	10/23/2022
Other Capital Improvement Costs	3/23/2021	10/23/2022
Capitalized Interest	3/23/2021	10/23/2022

Project Title: Power Monitoring Installation for Water Treatment Plants

Phase: Design-Build

Phase Title: Power Monitoring Installation

Phase Budget:	Water	Start Date:	3/23/2021
Phase Status:	Project Execution	End Date:	10/23/2022
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$0.00

Phase Comments/Description:

DB Contract Contract #2000644

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	5 Year Total	FY28+
Design-Build	\$2,129	\$150	\$150	\$1,124	\$415	\$0	\$0	\$415	\$438

Phase Dates

Activity Name	Start Date	End Date
Design-Build	3/23/2021	10/23/2022

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	5 Year Total	FY21	FY22	Total
2022	\$514	\$1,186	\$514	\$1,700

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total	FY28+
\$2,265,627	\$203,628	\$1,186,000	\$438,000	\$0	\$0	\$438,000	\$438,000

Description of CIP Changes:

New project from program JD 8/25/2020.

Project Title: WWP Scada Infrastructure Upgrade

Project Status: Future Planned - Within 5 Year Plan

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:
4/12/2021

Year Project Added to CIP: 2022

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Water Works Park

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Of paramount concern is the need to have a reliable and secure SCADA platform that will satisfy GLWA's needs for the next 10-15 years. The purpose of this RFP is to upgrade the SCADA system to an Ovation DCS controlled network utilizing Ovation and PLC controllers and I/O (3rd part network design will be supplied) for implementation at WWP as reflected in the design governance documents (reference SCADA standards contained in CS-12 and CS-13). Included in the project objectives are the following:

A. The intent of this project is to design a complete SCADA network, replacement of all field devices at the above facility is necessary. A field investigation will be required to determine what field devices need to be replaced. Also, a 3rd party design will need to be incorporated into the overall design.

B. All field investigation, performing the complete engineering design of a new process control system, networks and communication

Scope of Work/Project Alternatives:

The scope of this project is to provide a design for SCADA upgrade of Water Works Park water treatment plant incorporating the following:

- Upgrade of all plant PLCs
 - Network extension upgrades to integrate new process areas/controllers within the process control network
 - Emerson Ovation upgrades
 - Implement alarm management.
 - Implement process improvements
 - Migrate all SCADA graphics, alarms, historical data configuration to a single platform
 - Upgrade/integration into the central Historians.
- Consider implementing a Data-Diode solution with one-way data flow out of the plant for enhanced cybersecurity.
- All graphics, alarming and historical data archiving should meet the GLWA SCADA Governance document requirements
 - Upgrade network backbone to ensure its capable with a 1Gbps data transmission rate. This network backbone link shall be redundant to provide a robust process control network and can withstand at least one communication failure without any network disruption.

Other Important Info:

This project will upgrade the SCADA network.

Primary Driver: 1 - Condition

Driver Explanation:

The primary driver for this project is the CS-108 Needs Assessment done for the 5 water treatment plants. Part of the scope for that project was to develop a 10-year CIP plan to rehab critical automation processes within the plants. 170300 Water Plant Automation Program was created to complete this objective.

Project Title: WWP Scada Infrastructure Upgrade

requirements, system integration of a complete SCADA network, identification of GLWA requirements, preparation of a final basis of design report, design and related services, engineering, management services, administration, and coordination. Provide quality control, inspections, training for operating and maintenance staff, construction close-out, documentation, operation and maintenance manuals, record documents and other documentation, perform all other work and obligations required by the Contract documents.

C. The D/B Contractor is responsible for obtaining the necessary equipment shutdown requests (ESR) from GLWA systems control as necessary to construct the proposed improvements.

- Design redundant routers
 - Administration building control room network upgrades and setup a new communication cabinet to properly accommodate all the network equipment
 - Design of network cabinets at strategic locations for future expandability of the PLC network
 - Provide a network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities
 - Utilize logical distribution of the network for an effective and secure communication solution
 - Adhere to network standards put together in the SCADA Governance document
 - Provide solutions for all communication bottlenecks for a reliable process network and minimize unnecessary points of failure such as media converters
 - Upgrade network monitoring tools/software to replicate all changes made under this project to mimic the actual process network for performance monitoring and troubleshooting
- The provided design direction is contained in attachments 3 and 4 (CS-12 &13). The selected engineering group shall provide the following:
- Kick-off meeting
 - Site Visits
 - Basis of Design Memorandum 30% Design
 - Workshop 1
 - 60% Design incorporating notes from Workshop 1
 - Workshop 2
 - 90% Design incorporating notes from Workshop 2
 - Workshop 3
 - 100% Design incorporating notes from Workshop 3•
- Cost estimate for construction
- Scope of work for construction to be used in an RFP
 - Coordination of potential shutdowns
 - Coordination of installation activities of the future construction contractor

Project Title: WWP Scada Infrastructure 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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: WWP Scada Infrastructure Upgrade

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 4/29/2021

Phase Status:

End Date: 11/1/2024

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total
GLWA Salaries	\$55	\$13	\$13	\$19	\$11	\$11	\$0	\$0	\$0	\$22

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/1/2023	11/1/2024
Capital Delivery Salary	4/1/2023	11/1/2024
Professional Services (CS-272 - 71029A.01)	4/29/2021	11/1/2024

Project Title: WWP Scada Infrastructure Upgrade

Phase: Design/Engineering**Phase Title:** Design/Engineering

Phase Budget: Water**Start Date:** 4/1/2023**Phase Status:****End Date:** 11/1/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Design/Engineering	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	4/1/2023	11/1/2024

Project Title: WWP Scada Infrastructure Upgrade

Phase: Construction**Phase Title:** Construction

Phase Budget: Water**Start Date:** 12/23/2023**Phase Status:****End Date:** 11/1/2024**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Construction	\$262	\$0	\$0	\$168	\$66	\$21	\$6	\$0	\$94

Phase Dates

Activity Name	Start Date	End Date
Construction	12/23/2023	11/1/2024
Construction Equipment / Material Purchase	2/1/2024	10/31/2024

Project Title: WWP Scada Infrastructure Upgrade

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
\$318,626	\$13,947	\$187,019	\$77,795	\$32,723	\$7,143	\$0	\$0	\$117,661

Description of CIP Changes:

N/A

Project Title: WWP SCADA Network Upgrade

Project Status: Future Planned - Within 5 Year Plan

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:
7/29/2021

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Water Works Park

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Provide a robust SCADA network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities. Adhere to network standards put together in the SGD document.

Scope of Work/Project Alternatives:

This project will be the construction phase of the design done under CIP 170304.

Other Important Info:

This project may be delayed.

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: WWP SCADA Network 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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: WWP SCADA Network Upgrade

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/31/2021

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$137	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$137

Phase Dates

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

Project Title: WWP SCADA Network Upgrade

Phase: Design/Engineering**Phase Title:** Design/Engineering

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/31/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Design/Engineering	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

Project Title: WWP SCADA Network Upgrade

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/31/2021

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY28+
Construction	\$7,198	\$0	\$0	\$0	\$7,198

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2021	7/31/2021
Construction Material / Equipment Purchase	7/1/2021	7/31/2021

Project Title: WWP SCADA Network Upgrade

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$7,336,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,336,000

Description of CIP Changes:

This is a new project to the CIP Plan FY 2023-2027. 7/29/2021 AC

Project Title: SPW SCADA PLC Network Upgrade

Project Status: Future Planned - Within 5 Year Plan

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: 7/30/2021

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Springwells Plant

Funds and Cost Center: Water - 5519-882411

Problem Statement:

This project will upgrade current plant PLCs providing Asset Center management and install network cabinets in strategic locations for future expandability.

Scope of Work/Project Alternatives:

Provide a robust SCADA network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities. Adhere to network standards put together in the SGD document.

Other Important Info:

This project will upgrade the 3rd party network.

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: SPW SCADA PLC Network 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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: SPW SCADA PLC Network Upgrade

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/31/2021

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	\$91	\$0	\$0	\$0	\$51	\$40	\$91

Phase Dates

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

Project Title: SPW SCADA PLC Network Upgrade

Phase: Design/Engineering**Phase Title:** Design/Engineering

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/31/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Design/Engineering	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

Project Title: SPW SCADA PLC Network Upgrade

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/31/2021

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Construction	\$3,054	\$0	\$0	\$0	\$1,521	\$1,532	\$3,054

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2021	7/31/2021
Construction Material / Equipment Purchase	7/1/2021	7/31/2021

Project Title: SPW SCADA PLC Network Upgrade

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
\$3,146,000	\$0	\$0	\$1,573,000	\$1,573,000	\$3,146,000

Description of CIP Changes:

New Project added to CIP Plan FY 2023-2027 7/29/2021 AC.

Project Title: NE SCADA Network Upgrade

Project Status: Future Planned - Within 5 Year Plan

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:
7/30/2021

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: Northeast Plant

Funds and Cost Center: Water - 5519-882411

Problem Statement:

Provide a robust SCADA network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities. Adhere to network standards put together in the SGD document.

Scope of Work/Project Alternatives:

This project will update the 3rd party network for this site.

Other Important Info:

This project may be delayed.

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: NE SCADA Network 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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: NE SCADA Network Upgrade

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/31/2021

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$91	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$91

Phase Dates

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

Project Title: NE SCADA Network Upgrade

Phase: Design/Engineering**Phase Title:** Design/Engineering

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/31/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Design/Engineering	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

Project Title: NE SCADA Network Upgrade

Phase: Construction**Phase Title:** Construction

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 7/31/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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	FY28+
Construction	\$2,825	\$0	\$0	\$0	\$2,825

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2021	7/31/2021
Construction Material / Equipment Purchase	7/1/2021	7/31/2021

Project Title: NE SCADA Network Upgrade

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$2,917,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,917,000

Description of CIP Changes:

New Project added to CIP FY 2023-2027 7/29/2021 AC.

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

☐ **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:
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	
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	
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:	7/1/2022
Phase Status:	Active	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$413	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$228

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2022	6/30/2031
Capital Delivery Salary	7/1/2022	6/30/2031

Project Title: Water Transmission Improvement Program

Phase: Design/Engineering

Phase Title: SAR Package 1

Phase Budget:	Water	Start Date:	7/26/2027
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Design/Engineering	\$96	\$0	\$0	\$53

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/26/2027	6/30/2031

Project Title: Water Transmission Improvement Program

Phase: Design/Engineering

Phase Title: Water Transmission Improvement Program

Phase Budget:	Water	Start Date:	7/1/2022
Phase Status:	Future Planned Start	End Date:	7/1/2025
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design/Engineering	\$2,974	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,951

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2022	7/1/2025

Project Title: Water Transmission Improvement Program

Phase: Construction (Build) # 2

Phase Title: ANR Package 1

Phase Budget:	Water	Start Date:	7/1/2028
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total	FY28+
Construction (Build) # 2	\$10,900	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2028	6/30/2031

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:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Construction (Build) # 6	\$17,664	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	7/26/2028	6/30/2031

Project Title: Water Transmission Improvement Program

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2018	\$50,000	\$10,000	\$11,000	\$9,000	\$11,000	\$9,000	\$0	\$0	\$0	\$0	\$0	\$50,000
2019	\$8,500	\$229	\$1,000	\$1,500	\$2,000	\$2,000	\$2,000	\$2,000	\$0	\$0	\$0	\$11,804
2020	\$9,500	\$156	\$1,000	\$1,500	\$2,000	\$2,000	\$2,000	\$2,000	\$100,000	\$0	\$0	\$110,656
2021	\$8,155	\$0	\$1,643	\$1,781	\$1,776	\$1,776	\$1,776	\$1,781	\$1,046	\$16,578	\$0	\$28,157
2022	\$4,175	\$0	\$34	(\$34)	\$49	\$1,034	\$1,034	\$1,034	\$1,034	\$39	\$72	\$33,171

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$32,048,609	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,232,457

Description of CIP Changes:

No changes per Todd K. 8/1/2021. AC

Project Title: Transmission System Valve Rehabilitation and Replacement 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: Todd King

Director: Todd King

Managing Dept.: Field Services

Date Original Business Case Prepared:
7/29/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Transmission System Gate Valves

Funds and Cost Center: Water - 5519-882111

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	
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	
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:	10/16/2018
Phase Status:	Active	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$100	\$0	\$0	\$9	\$9	\$10	\$9	\$9	\$9	\$49	\$40

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/16/2018	6/30/2031
Capital Delivery Salary	10/16/2018	6/30/2031
Contractual Professional Services	10/16/2018	6/30/2031
Other Capital Improvement Costs	10/16/2018	6/30/2031
Capitalized Interest	10/16/2018	6/30/2031

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Design/Engineering

Phase Title: SAR Package 1

Phase Budget:	Water	Start Date:	7/26/2027
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY26	FY27	5 Year Total	FY28+
Design/Engine ering	\$1,230	\$0	\$0	\$84	\$40	\$125	\$1,105

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/26/2027	6/30/2031

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Design/Engineering

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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design/Engineering	\$1,172	\$0	\$0	\$266	\$266	\$267	\$266	\$104	\$0	\$905	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	10/16/2018	2/25/2026
Construction	10/28/2022	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:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY28+
Construction (Build) # 3	\$2,824	\$0	\$0	\$2,824

Phase Dates

Activity Name	Start Date	End Date
Construction	7/26/2028	6/30/2031

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$15,330	\$2,930	\$3,100	\$3,100	\$3,100	\$3,100	\$0	\$0	\$0	\$0	\$0	\$15,330
2019	\$16,000	\$2,000	\$4,000	\$4,000	\$3,274	\$726	\$4,000	\$4,000	\$0	\$0	\$0	\$22,000
2020	\$19,274	\$3,430	\$4,000	\$4,000	\$3,274	\$4,000	\$4,000	\$4,000	\$10,000	\$0	\$0	\$36,704
2021	\$13,884	\$0	\$7,159	\$642	\$1,177	\$3,119	\$3,175	\$3,210	\$3,203	\$4,784	\$0	\$26,469
2022	\$1,080	\$0	\$316	(\$316)	\$281	\$232	\$232	\$232	\$232	\$151	\$45	\$5,350

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$5,327,411	\$0	\$276,826	\$276,826	\$277,584	\$276,826	\$199,328	\$50,531	\$1,081,094	\$3,969,490

Description of CIP Changes:

Project Title: Transmission System Valve Rehabilitation and Replacement 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: Todd King

Director: Todd King

Managing Dept.: Field Services

Date Original Business Case Prepared:
7/29/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Transmission System Gate Valves

Funds and Cost Center: Water - 5519-882111

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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Capital Delivery Salary**Phase Title:** Capital Delivery Salary

Phase Budget: Water**Start Date:** 8/20/2019**Phase Status:****End Date:** 10/13/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Capital Delivery Salary	\$391	\$391	\$391	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	10/13/2021
Capital Delivery Salary	7/1/2021	10/13/2021
Professional Services (CS-272 - 71003A.02)	8/20/2019	10/13/2021

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Construction (Build) # 1 (CON-181)**Phase Title:** Construction (Build) # 1 (CON-181)

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 10/13/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Construction (Build) # 1 (CON-181)	\$15,000	\$5,218	\$5,218	\$9,781

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-181)	7/1/2021	10/13/2021

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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

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Total Costs	Prior FYs	FY22
\$15,391,758	\$5,609,759	\$9,781,999

Description of CIP Changes:

Project Title: Transmission System Valve Replacement

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: Todd King

Director: Todd King

Managing Dept.: Field Services

Date Original Business Case Prepared:
 7/29/2016

Year Project Added to CIP: 2017

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Transmission System Gate Valves

Funds and Cost Center: Water - 5519-882111

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 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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Transmission System Valve Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:
Start Date: 5/1/2020

Phase Status:
End Date: 6/30/2022

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total
GLWA Salaries	\$43	\$0	\$0	\$7	\$7	\$7	\$7	\$7	\$7	\$35

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/1/2020	6/30/2022
Capital Delivery Salary	5/1/2020	6/30/2022

Project Title: Transmission System Valve Replacement

Phase: Construction (Build) (1802745)

Phase Title: Construction (Build)

Phase Budget:

Start Date: 5/1/2020

Phase Status:

End Date: 6/30/2022

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total
Construction (Build) (1802745)	\$15,000	\$2,110	\$2,110	\$2,146	\$2,146	\$2,152	\$2,146	\$2,146	\$2,152	\$10,743

Phase Dates

Activity Name	Start Date	End Date
Construction (1802745)	5/1/2020	6/30/2022

Project Title: Transmission System Valve Replacement

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

CIP	5 Year Total	FY21	FY22	Total
2022	\$1,305	\$8,373	\$1,305	\$10,072

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
\$15,043,120	\$2,110,241	\$2,153,513	\$2,153,513	\$2,159,413	\$2,153,513	\$2,153,513	\$2,159,413	\$10,779,366

Description of CIP Changes:

Project Title: Transmission Mains Valves and Urgent

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Program

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: Todd King

Director: Todd King

Managing Dept.: Field Services

Date Original Business Case Prepared:
9/30/2021

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Multiple Locations

Funds and Cost Center: Water - 5519-882431

Problem Statement:

Ongoing project to address water main transmission mains, valves, pumping stations, and plants on an emergency or urgent basis.

Scope of Work/Project Alternatives:

Work shall be as directed by GLWA Field Services to address and support maintenance and repairs and capital improvements to the water main, valves, booster stations, and/or other urgent tasks as directed.

Other Important Info:

Primary Driver: Varies

Driver Explanation:

As needed work

Project Title: Transmission Mains Valves and Urgent**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	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Transmission Mains Valves and Urgent

Project Title: Transmission Mains Valves and Urgent

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
\$15,000,000	\$0	\$1,338,485	\$2,729,312	\$2,736,790	\$2,729,312	\$2,729,312	\$2,736,790	\$13,661,515

Description of CIP Changes:

Added project as part of ongoing program

Project Title: Water Transmission Main Asset Assessment Program

Project Status: Project Execution - Design

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: Ashley Jacqmain

Director: Suzanne Coffey

Managing Dept.: AM/CIP

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	
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	
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: 2/27/2023

Phase Status: Active

End Date: 12/31/2037

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$242	\$0	\$0	\$0	\$9	\$29	\$29	\$29	\$29	\$125	\$116

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/27/2023	12/31/2037
Capital Delivery Salary	2/27/2023	12/31/2037
Contractual Professional Services	2/27/2023	12/31/2037
Other Capital Improvement Costs	2/27/2023	12/31/2037
Capitalized Interest	2/27/2023	12/31/2037

Project Title: Water Transmission Main Asset Assessment Program

Phase: Design/Engineering**Phase Title:** Unallocated Water Transmission Main Asset Assessment Program

Phase Budget:	Water	Start Date:	2/27/2023
Phase Status:	Active	End Date:	12/31/2037
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total
Design/Engineering	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	2/27/2023	12/31/2037
Construction	10/27/2024	12/31/2037

Project Title: Water Transmission Main Asset Assessment Program

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$10,626	\$2,626	\$2,000	\$2,000	\$2,000	\$2,000	\$0	\$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	\$0	\$26,133
2020	\$21,000	\$0	\$2,500	\$3,000	\$4,000	\$4,000	\$5,000	\$5,000	\$25,000	\$0	\$0	\$48,500
2021	\$7,249	\$0	\$0	\$54	\$54	\$54	\$775	\$2,183	\$4,183	\$23,450	\$0	\$30,753
2022	\$5,627	\$0	\$0	\$0	\$52	\$24	\$525	\$525	\$2,025	\$2,525	\$2,553	\$8,438

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$242,054	\$0	\$0	\$9,854	\$29,085	\$29,005	\$29,005	\$29,005	\$125,954	\$116,100

Description of CIP Changes:

New LSIP Project was implemented in FY22. 7/30/21 AC

Project Title: Linear System Integrity Program

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: Ashley Jacqmain

Director: Suzanne Coffey

Managing Dept.: AM/CIP

Date Original Business Case Prepared: 2/14/2020

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Entire Linear System - Water & Wastewater

Funds and Cost Center: Water - 5519-882431

Problem Statement:

GLWA seeks to apply asset management principles to proactively evaluate and manage the linear system (water transmission and sewer interceptor systems). Because the water transmission system is intentionally closed, getting into it to assess the condition of the pipes is challenging. It requires coordination with operations and member partners, and in many cases, the construction of access points to introduce and extract equipment. LSIP is a data and risk-based approach.

Scope of Work/Project Alternatives:

Scope of work is broken into 6 Tasks: Task 1 - Program Management - Water; Task 2 - Development of Water Program Framework; Task 3 - Planning of Water Pipeline Condition Assessments; Task 4 - Implementation of Water Pipeline Condition Assessments; Task 5 - Wastewater Program Planning and Implementation; Task 6 - Program Management - Wastewater

Other Important Info:

None

Primary Driver: 1 - Condition

Driver Explanation:

Need to develop framework and program to prioritize condition assessment and renewal strategies for GLWA's linear system. Doing this work will prioritize condition assessments based on probability and consequence of failure and plan for replacement of only specific lengths of pipe.

Project Title: Linear System Integrity Program

Scoring**Project Manager Weighted Score:** 78.80

Criteria Name	Score	Comment
Condition	3	
Performance (Service Level/Reliability)	5	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	4	
Health and Safety	3	
Public Benefit	4	
Financial	5	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Linear System Integrity Program

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

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 6/30/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
GLWA Salaries	\$223	\$0	\$0	\$44	\$44	\$44	\$44	\$44	\$179

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	6/30/2026
Capital Delivery Salary	7/1/2021	6/30/2026

Project Title: Linear System Integrity Program

Phase: Design/Engineering**Phase Title:** Design/Engineering

Phase Budget: Water**Start Date:** 7/1/2021**Phase Status:****End Date:** 6/30/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Design/Engine ering	\$8,857	\$0	\$0	\$1,770	\$1,770	\$1,775	\$1,770	\$1,770	\$7,087

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (1902659)	7/1/2021	6/30/2026

Project Title: Linear System Integrity Program

Phase: Construction**Phase Title:** Construction

Phase Budget: Water**Start Date:** 8/16/2021**Phase Status:****End Date:** 6/30/2026**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Construction	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	8/16/2021	6/30/2026

Project Title: Linear System Integrity Program

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

CIP

Reporting Period 33: Ending FY21 M12 Jun

Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
\$9,081,824	\$0	\$1,815,370	\$1,815,370	\$1,820,344	\$1,815,370	\$1,815,370	\$7,266,454

Description of CIP Changes:

Previous versions of CIP had CIP budget for FY2022 and FY2023. Contract budget has CIP work starting in FY2024.

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Project Status: Future Planned - Ten-Year CIP

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)**



Lake Huron Plant Reservoir No. 3: Interior concrete repair.

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/12/2016

Year Project Added to CIP: 2016

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: LHP, SPP, SWP, NEP, WWP, Booster Stations

Funds and Cost Center: Water - 5519-882111

Problem Statement:

This program CIP merges former reservoir inspection and repair programs and umbrella's all subsequent CIP's associated with the program in the 17080X category. This program manages the perpetual inspection and repair required to all 31 active reservoirs on a 5 year year cycle. The program manages the overall repair schedule to mitigate conflicts in the transmission system to minimize the impact for EGLE mandated inspections and repairs to GLWA Reservoirs at Booster Stations and Water Treatment Plants.

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 program will provide inspection, rehabilitation, and maintenance for all 31 finished (potable) reservoirs in the GLWA system on a ELGE mandated five year revolving inspection cycle.

Other Important Info:

The CIP 170800 program is broken down into subset CIP numbers starting at 170801. CIP 170801 is currently in construction and is supported by two contracts. Engineering contract CS-151A and construction contract 1900744. The second phase of the program CIP 170802 is in the procurement phase and the engineering contract number will be 2100236. The third phase of the program CIP 170803 will begin pre-procurement activities in 2022.

Primary Driver: 3 - Regulatory

Driver Explanation:

EGLE requires inspection of potable water storage tanks on a fixed five year revolving schedule.

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Scoring

Project Manager Weighted Score: 93.20

Criteria Name	Score	Comment
Condition	5	Increased, The majority of the system reservoirs over 50 years old and are requiring extensive repair work that is challenging to complete within a 9 month low demand season. For example \$3.5M was spent on rehabilitating one 10M gallon steel tank reservoir at SWP. A new reservoir is 8M.
Performance (Service Level/Reliability)	3	No change
Regulatory (Environmental/Legal)	5	EGLE mandates inspection every five years
Operations and Maintenance	2	Reservoir are not typically taken out of service for maintenance until the five year inspection under this CIP. Minimal impact to maintenance.
Health and Safety	4	no change
Public Benefit	5	no change
Financial	5	Increased, The cost to GLWA for this program will continue to increase for FY 23 to FY 27 and then decline as GLWA completes at least one inspection and rehab on all reservoirs, then starts a new cycle.
Efficiency and Innovation	1	no change

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	
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:	7/1/2021
Phase Status:	Active	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$127	\$0	\$0	\$12	\$12	\$12	\$12	\$12	\$12	\$63	\$50

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	6/30/2031
Capital Delivery Salary	7/1/2021	6/30/2031
Contractual Professional Services	7/1/2021	6/30/2031
Other Capital Improvement Costs	7/1/2021	6/30/2031
Capitalized Interest	7/1/2021	6/30/2031

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Phase: Study & Design & Construction Assistance # 1 (CS-151)

Phase Title: Engineering

Phase Budget:	Water	Start Date:	7/1/2021
Phase Status:	Active	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Study & Design & Construction Assistance # 1 (CS-151)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	6/30/2031

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget:	Water	Start Date:	7/1/2022
Phase Status:	Future Planned Start	End Date:	6/30/2031
Cost Allocation:	CTA	Fund:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	Yes
		Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Construction (Build) # 1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2022	6/30/2031

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$10,950	\$50	\$3,300	\$2,550	\$2,550	\$2,550	\$0	\$0	\$0	\$0	\$0	\$0	\$11,000
2019	\$14,415	\$0	\$39	\$472	\$753	\$4,510	\$4,340	\$4,340	\$4,645	\$0	\$0	\$0	\$19,099
2020	\$24,904	\$0	\$0	\$482	\$5,128	\$5,211	\$5,182	\$3,888	\$5,495	\$33,778	\$0	\$0	\$59,164
2021	\$33,727	\$0	\$0	\$457	\$2,160	\$6,087	\$6,087	\$6,087	\$4,100	\$11,366	\$22,732	\$0	\$59,076
2022	\$12,581	\$0	\$0	\$457	(\$457)	\$46	\$322	\$2,322	\$3,321	\$3,317	\$3,300	\$3,600	\$23,827

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$127,340	\$0	\$12,727	\$12,727	\$12,762	\$12,727	\$12,727	\$12,727	\$63,670	\$50,943

Description of CIP Changes:

Redirected to J. McCallum 7/19/2019 -- ECK

CIP projected funding requirements updated to reflect actual bid pricing obtained for CS-151A (170801) JPM 8/8/2019, JPM 7/21/2021

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)**



Imlay Booster Station: Sealing interior wall cracks

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/12/2016

Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: LHP, SPP, SWP, WWP, North Service Center, Imlay Booster Station

Funds and Cost Center: Water - 5519-882111

Problem Statement:

CIP 170801 is the first in a series of facility improvements 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 specific 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 closed in January of 2025.

Other Important Info:

Inspection, design, and RPR services are performed under contract CS-151A with Hazen and Sawyer as the Engineer.
Construction of improvements are performed under contract 1900744 with Pullman SST, Inc. as the prime contractor.
WWP reservoir 2A and North Service Center reservoirs have been added to contract 1900744 to perform emergency repairs.

Primary Driver: 3 - Regulatory

Driver Explanation:

Program is a requirement of the State of Michigan Department of Environment, Great Lakes and Energy.

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: 93.20

Criteria Name	Score	Comment
Condition	5	scoring matches the parent CIP 170800
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Health and Safety	4	
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	
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: 12/7/2018
Phase Status:	End Date: 1/19/2025
Cost Allocation:	Fund: N/A - Not Applicable
Funding Source: Capital Funding Plan (CFP)	Usefull Life > Yrs: No
	Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$2,480	\$251	\$251	\$1,066	\$1,066	\$96	\$0	\$0	\$0	\$1,162	\$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/7/2018	1/19/2025
Capital Delivery Salary	12/7/2018	1/19/2025
Contractual Professional Services	12/7/2018	1/19/2025
Other Capital Improvement Costs	12/7/2018	1/19/2025
Capitalized Interest	12/7/2018	1/19/2025

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 (CS-151A, 1900744)

Phase Title: Design/Engineering & Construction

Phase Budget:	Start Date:	12/7/2018
Phase Status:	End Date:	1/19/2025
Cost Allocation:	Fund:	N/A - Not Applicable
Funding Source:	Usefull Life > Yrs:	No
	Tot. Federal Loan Amount:	\$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	FY27	5 Year Total	FY28+
Design/Engineering & Construction (CS-151A, 1900744)	\$22,276	\$11,205	\$11,205	\$4,938	\$5,763	\$368	\$0	\$0	\$0	\$6,132	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-151)	12/7/2018	1/19/2025
Construction (1900744)	11/21/2019	1/19/2025

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: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	5 Year Total	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$5,538	\$8,420	\$463	\$2,075	\$1,000	\$1,000	\$1,000	\$1,000	\$15,090

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$24,757,639	\$11,457,639	\$6,005,000	\$6,830,000	\$465,000	\$0	\$0	\$0	\$7,295,000	\$0

Description of CIP Changes:

Financial forecasting, change order forecasted to increase the engineering contract. WWP and North Services Center were added to the scope of contract 1900744.

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

Project Status: Active - 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: John McCallum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/12/2016

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: LHP, SPP, SWP, WWP, North Service Center, Imlay Booster Station

Funds and Cost Center: Water - 5519-882411

Problem Statement:

CIP 170802 is the second in a series of facility improvements to reservoirs at the water treatment plants and booster stations assigned to the System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation under the umbrella CIP 170800 program.

Scope of Work/Project Alternatives:

CIP 170802 is specific to the inspection, design/engineering, and construction improvements to 15 reservoirs. CIP170802 is currently in the procurement phase and is expected to be started in 2021.

Other Important Info:

Inspection and design of improvements is being executed under Contract future contract 2100236

Primary Driver: 3 - Regulatory

Driver Explanation:

Program is a requirement of the State of Michigan department of department of Environment, Great Lake and Energy (EGLE)

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

Scoring**Project Manager Weighted Score:** 93.20

Criteria Name	Score	Comment
Condition	5	Scoring is same for 170800, 170801 as all these CIP's address the same work needed on the reservoirs..
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Health and Safety	4	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 11/30/2021

Phase Status:

End Date: 1/31/2028

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total
GLWA Salaries	\$275	\$0	\$0	\$31	\$54	\$54	\$54	\$54	\$26	\$244

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/30/2021	1/31/2028
Capital Delivery Salary	11/30/2021	1/31/2028

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 11/30/2021

Phase Status:

End Date: 1/31/2028

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design/Engineering	\$5,252	\$0	\$0	\$468	\$1,065	\$1,068	\$1,065	\$1,065	\$516	\$4,783	\$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	11/30/2021	1/31/2028

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 1/31/2028

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction	\$35,972	\$0	\$0	\$0	\$6,879	\$7,876	\$6,879	\$6,879	\$7,456	\$35,972	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction	5/30/2023	1/31/2028
Construction - Materials / Equipment Purchase	7/1/2021	7/31/2021

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

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

CIP

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$41,500,000	\$0	\$500,000	\$8,000,001	\$9,000,000	\$8,000,001	\$8,000,001	\$8,000,000	\$41,000,000	\$0

Description of CIP Changes:

New CIP added to FY 2023-2027 7/28/2021 AC.

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

Project Status: Future Planned - Ten-Year CIP

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: John McCallum

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 10/16/2016

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: City of Detroit

Lookup Location: LHP, SPP, SWP, WWP, North Service Center, Imlay Booster Station

Funds and Cost Center: Water - 5519-882411

Problem Statement:

CIP 170803 is the third 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 CIP 170800.

Scope of Work/Project Alternatives:

CIP 170803 is specifically related to inspection, design, and construction of improvements to the reservoirs in our system as delineated in future contracts.

Other Important Info:

n/a

Primary Driver: 3 - Regulatory

Driver Explanation:

The program is driven by the requirement to inspect reservoirs every five years as mandated by the State of Michigan department of Environment, Great Lakes and Energy (EGLE)

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

Scoring**Project Manager Weighted Score:** 93.20

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	5	
Operations and Maintenance	2	
Health and Safety	4	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 6/1/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$333	\$0	\$0	\$0	\$0	\$46	\$46	\$238

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	6/1/2031
Capital Delivery Salary	7/1/2021	6/1/2031

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 1/1/2024

Phase Status:

End Date: 6/1/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design/Engineering	\$16,213	\$0	\$0	\$0	\$0	\$0	\$453	\$453	\$14,101

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	1/1/2024	6/1/2031

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 9/15/2025

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Construction	\$77,368	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$65,348

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2021	9/15/2025
Construction - Materials / Equipment Purchase	7/1/2021	7/31/2021

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

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

CIP

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$93,916,000	\$0	\$0	\$0	\$0	\$0	\$0	\$500,000	\$500,000	\$79,688,001

Description of CIP Changes:

New CIP project added to FY 2023-2027 CIP Plan. 7/30/2021 AC

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

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: Chandan Sood

Director: Chandan Sood

Managing Dept.: Systems Planning

Date Original Business Case Prepared:
 1/26/2016

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Various meter locations in Transmission System

Funds and Cost Center: Water - 5519-882111

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, 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.

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

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	
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	
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: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$229	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$114

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2020	6/30/2031
Capital Delivery Salary	7/1/2020	6/30/2031
Contractual Professional Services	7/1/2020	6/30/2031
Other Capital Improvement Costs	7/1/2020	6/30/2031
Capitalized Interest	7/1/2020	6/30/2031

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: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
TBD / Future Allocation / General Holding TBD	\$43,806	\$0	\$0	\$4,036	\$0	\$0	\$0	\$0	\$0	\$0	\$19,885

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2020	6/30/2031

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY27	Total
2018	\$20,000	\$500	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$0	\$0	\$0	\$0	\$0	\$20,500
2019	\$20,090	\$0	\$410	\$4,613	\$3,690	\$3,690	\$3,997	\$4,100	\$0	\$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	\$0	\$43,797
2021	\$6,450	\$0	\$0	\$1,238	\$2,542	\$2,535	\$2,535	\$1,139	\$121	\$120	\$71	\$0	\$10,301
2022	\$17,610	\$0	\$0	\$0	\$0	\$2,535	\$1,159	\$4,112	\$4,113	\$4,113	\$4,113	\$4,115	\$40,719

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$44,036,507	\$0	\$4,036,507	\$0	\$0	\$0	\$0	\$0	\$0	\$20,000,000

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

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: Chandan Sood

Director: Chandan Sood

Managing Dept.: Systems Planning

Date Original Business Case Prepared:
 1/26/2016

Year Project Added to CIP: 2014

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Various meter locations in Transmission System

Funds and Cost Center: Water - 5519-882111

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, 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.

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

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	
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	
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: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
GLWA Salaries	\$47	\$1	\$1	\$45

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2018	5/23/2022
Capital Delivery Salary	1/1/2018	5/23/2022
Contractual Professional Services	1/1/2018	5/23/2022
Other Capital Improvement Costs	1/1/2018	5/23/2022
Capitalized Interest	1/1/2018	5/23/2022

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Phase: Construction (Build) (CON-285)

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:	N/A - Not Applicable
Funding Source:	Capital Funding Plan (CFP)	Usefull Life > Yrs:	No
		Tot. Federal Loan Amount:	\$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Construction (Build) (CON-285)	\$10,589	\$8,529	\$8,529	\$2,059	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
Construction (CON-285)	1/1/2018	5/23/2022

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Phase: Miscellaneous

Phase Title: Miscellaneous

Phase Budget: Water

Start Date: 7/1/2020

Phase Status:

End Date: 6/30/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$2,838	\$3,249	\$2,838	\$0	\$0	\$0	\$0	\$0	\$10,616

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$10,636,620	\$8,531,114	\$2,105,506	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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:** 63.80

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	4	
Regulatory (Environmental/Legal)	2	
Operations and Maintenance	4	
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	
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: 5/31/2023

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	5 Year Total
GLWA Salaries	\$55	\$7	\$7	\$24	\$23	\$23

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/8/2018	5/31/2023
Capital Delivery Salary	8/8/2018	5/31/2023
Professional Services (CS-272 - 71007A.01)	2/3/2020	9/30/2022
Contractual Professional Services	8/8/2018	5/31/2023
Other Capital Improvement Costs	8/8/2018	5/31/2023
Capitalized Interest	8/8/2018	5/31/2023

Project Title: Brownstown Meter Pit

Phase: Design & Construction Assistance (CS-201)

Phase Title: Design & Construction Assistance

Phase Budget:

Start Date: 8/8/2018

Phase Status:

End Date: 7/29/2022

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	5 Year Total
Design & Construction Assistance (CS-201)	\$166	\$78	\$78	\$43	\$43	\$43

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering (CS-201)	8/8/2018	7/29/2022

Project Title: Brownstown Meter Pit

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

Phase Budget:**Start Date:** 3/1/2022**Phase Status:****End Date:** 5/31/2023**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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	5 Year Total
Construction (Build)	\$799	\$0	\$0	\$321	\$477	\$477

Phase Dates

Activity Name	Start Date	End Date
Construction	3/1/2022	5/31/2023

Project Title: Brownstown Meter Pit**Project Total Expenses by FY Compared to Prior CIPs (All figures are in \$1,000's)**

CIP	5 Year Total	FY21	FY22	FY23	Total
2022	\$599	\$570	\$594	\$5	\$1,246

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Total Costs	Prior FYs	FY22	FY23	5 Year Total
\$1,021,567	\$86,567	\$390,000	\$545,000	\$545,000

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

Project Status: Active - Pre-Procurement
- Design

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: Nick Hoffman

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared:
1/5/2018

Year Project Added to CIP: 2018

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: All Water Facilities

Funds and Cost Center: Water - 5519-882111

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

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:** 0.00

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

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	
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: 6/2/2022

Phase Status:

End Date: 5/31/2033

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
GLWA Salaries	\$367	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$211

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/2/2022	5/31/2033
Capital Delivery Salary	6/2/2022	5/31/2033
Contractual Professional Services	6/2/2022	5/31/2033
Other Capital Improvement Costs	6/2/2022	5/31/2033
Capitalized Interest	6/2/2022	5/31/2033

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: 7/3/2023

Phase Status:

End Date: 6/30/2027

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design & Bid Assistance	\$1,692	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,692

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/3/2023	6/30/2027

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: Design-Build # 1 (1803483)

Phase Title: Design-Build Contract No. 1803483

Phase Budget: Water

Start Date: 3/10/2023

Phase Status:

End Date: 2/7/2025

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design-Build # 1 (1803483)	\$32	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$32

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	3/10/2023	1/16/2024
Construction	1/17/2024	2/7/2025

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: Design/Engineering

Phase Title: Design Build - Contract TBD

Phase Budget: Water

Start Date: 6/2/2022

Phase Status:

End Date: 5/31/2033

Cost Allocation: CTA

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: Yes

Tot. Federal Loan Amount: \$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	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
Design/Engineering	\$13,816	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$8,191

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	6/2/2022	6/3/2030
Construction	6/3/2024	5/31/2033

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Phase: Miscellaneous**Phase Title:** Miscellaneous

Phase Budget: Water**Start Date:** 7/1/2020**Phase Status:****End Date:** 6/30/2021**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** Yes**Tot. Federal Loan Amount:** \$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
Miscellaneous	\$0	\$0	\$0

Phase Dates

Activity Name	Start Date	End Date
FY21 Baseline	7/1/2020	6/30/2021

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	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
2019	\$2,490	\$111	\$986	\$210	\$24	\$1,159	\$24,756	\$0	\$0	\$0	\$27,246
2020	\$4,657	\$0	\$2,657	\$0	\$0	\$0	\$2,000	\$2,000	\$0	\$0	\$6,707
2021	\$8,778	\$71	\$2,828	\$173	\$317	\$2,907	\$3,126	\$2,255	\$11,996	\$0	\$23,673
2022	\$8,199	\$21	(\$21)	\$386	\$11	\$3,091	\$1,808	\$370	\$2,921	\$3,961	\$22,711

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$15,908,438	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,128,317

Description of CIP Changes:

Project 171502 cost have been pulled from CIP 171500 Program

Project Title: Lake Huron and Southwest Roof Replacement

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: Nick Hoffman

Director: Grant Gartrell

Managing Dept.: Water Eng

Date Original Business Case Prepared: 7/1/2021

Year Project Added to CIP: 2021

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Wayne County outside of Detroit/
Saint Clair County

Funds and Cost Center: Water - 5519-882411

Problem Statement:

This Design-Bid-Build project will replace identified roofing systems at GLWA Water Treatment Plants: Lake Huron and Southwest which were determined to need replacement over the next 6 to 8 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 treatment and distribution operations.

Scope of Work/Project Alternatives:

Tear off existing roofing system and replace with new roofing systems as follows:
Lake Huron Water Treatment Plant: Flocculator Building A & B, built-up roof, Chlorine Room, built-up roof, Low Lift Building, built-up roof, Chemical Building A & B, built-up roof.
Southwest Water Treatment Plant: Lab and Office Building A & B, built-up roof, Administration Building A & B, built-up roof.

Other Important Info:

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:

Identified roofs are well past their useful service life and showing significant deterioration, and in some places leaking.

Project Title: Lake Huron and Southwest Roof Replacement

Scoring**Project Manager Weighted Score:** 60.80

Criteria Name	Score	Comment
Condition	5	
Performance (Service Level/Reliability)	3	
Regulatory (Environmental/Legal)	1	
Operations and Maintenance	3	
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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Lake Huron and Southwest Roof Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:
End Date: 7/31/2021

Cost Allocation:
Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
GLWA Salaries	\$91	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$91

Phase Dates

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

Project Title: Lake Huron and Southwest Roof Replacement

Phase: Design/Engineering

Phase Title: Design/Engineering

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 7/31/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
Design/Engineering	\$400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$400

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2021	7/31/2021

Project Title: Lake Huron and Southwest Roof Replacement

Phase: Construction

Phase Title: Construction

Phase Budget: Water

Start Date: 7/1/2021

Phase Status:

End Date: 7/31/2021

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY28+
Construction	\$2,211	\$0	\$0	\$0	\$2,211

Phase Dates

Activity Name	Start Date	End Date
Construction	7/1/2021	7/31/2021

Project Title: Lake Huron and Southwest Roof Replacement

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

CIP

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$2,703,038	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,703,038

Description of CIP Changes:

New CIP added to FY 2023-2027 7/27/2021. AC

Project Title: Masonry Replacement and Rehabilitation

Project Status: Future Planned - Ten-Year CIP

CIP Type: Program

Class Lvl 1: Water

Class Lvl 2: General Purpose

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)**



Northeast Facility

Project Engineer/Manager: Douglas Atkinson

Director: Paula Anderson

Managing Dept.: Fleet and Facilities

Date Original Business Case Prepared:
Year Project Added to CIP: 2020

CIP Budget: Water

Project Jurisdiction: Multiple Counties

Lookup Location: Multiple Counties

Funds and Cost Center: Water - 5519-882111

Problem Statement:

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

Scope of Work/Project Alternatives:

For NE WTP: Assess, solve the movement and moisture penetration problem, rebuild portions of masonry and concrete walls, floors, roof parapets and deck elements.

For SW WTP: Assess the panels and support structure, replace panels, repair/restore rusted steel members.

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

Other Important Info:

3 sites have been identified for this project all have some failing concrete.

- 1) Northeast WTP
- 2) Southwest WTP
- 3) Imlay City Pumping Station

Primary Driver: 1 - Condition

Driver Explanation:

Poor condition.

Project Title: Masonry Replacement and Rehabilitation

Scoring**Project Manager Weighted Score:** 0.00

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

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	
Health and Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Title: Masonry Replacement and Rehabilitation

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

Phase Budget: Water**Start Date:** 7/1/2026**Phase Status:****End Date:** 6/30/2031**Cost Allocation:****Fund:** N/A - Not Applicable**Funding Source:** Capital Funding Plan (CFP)**Usefull Life > Yrs:** No**Tot. Federal Loan Amount:** \$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	FY28+
GLWA Salaries	\$229	\$0	\$0	\$229

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2026	6/30/2031
Capital Delivery Salary	7/1/2026	6/30/2031
Contractual Professional Services	7/1/2026	6/30/2031
Other Capital Improvement Costs	7/1/2026	6/30/2031
Capitalized Interest	7/1/2026	6/30/2031

Project Title: Masonry Replacement and Rehabilitation

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Start Date: 7/1/2026

Phase Status:

End Date: 6/30/2031

Cost Allocation:

Fund: N/A - Not Applicable

Funding Source: Capital Funding Plan (CFP)

Usefull Life > Yrs: No

Tot. Federal Loan Amount: \$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	FY27	5 Year Total	FY28+
TBD / Future Allocation / General Holding	\$24,770	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,770

Phase Dates

Activity Name	Start Date	End Date
TBD/Unallocated	7/1/2026	6/30/2031

Project Title: Masonry Replacement and Rehabilitation

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

CIP	5 Year Total	FY22	FY23	FY24	FY25	FY26	FY27	Total
2022	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000	\$25,000

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Total Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28+
\$25,000,001	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000,001

Description of CIP Changes:

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

