PRELIMINARY DRAFT NO. 1

October 19, 2020

APPENDIX B

WASTEWATER BUSINESS CASE EVALUATIONS

CIP

CAPITAL IMPROVEMENT PLAN

2022 - 2026

GLWA

Great Lakes Water Authority

CIP Number: 211001

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 6/23/2005

Year Project Added to CIP: 1999

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Rehabilitation for meeting NPDES Permit and NEC requirements

Scope of Work/Project Alternatives:

The work to be completed under this project will include installing ventilation and atmospheric control for the pipe gallery, providing new lights and installing new fire alarm system. Rehabilitation of the twelve rectangular primary clarifiers and rehabilitation of circular primary clarifiers 15 and 16 are also part of the scope of this project.

Other Important Info:

Challenges: N/A - Active

Primary Driver: N/A - Active

Driver Explanation:

N/A - Active

CIP Number: 211001

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 211001

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Federal Loan Programs

Start Date: 7/18/2016

End Date: 12/31/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 7/31/2019

Cost Est. Source:

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$767	$740	$740	$27	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/18/2016	12/31/2020

CIP Number: 211001

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Phase: Construction Assistance # 1

Phase Title: CS-1484 Construction Assistance

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/18/2016

End Date: 12/31/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction Assistance # 1	$1,790	$741	$741	$1,049	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction Assistance - Project Execution	7/18/2016	12/31/2020

CIP Number: 211001

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Phase: Construction (Build) # 1

Phase Title: PC-757 Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Federal Loan Programs

Start Date: 7/18/2016

End Date: 12/31/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date:

Cost Est. Source: Contract

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$51,504	$49,704	$49,704	$1,800	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	7/18/2016	12/31/2020
Construction - Closeout	10/2/2020	12/31/2020

CIP Number: 211001

Project Title: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	Total
2018	$41,055	$10,848	$12,097	$20,990	$7,968	$0	$51,903
2019	$30,811	$10,243	$12,983	$16,107	$8,671	$6,033	$54,037
2020	$11,036	$0	$25,098	$18,724	$7,982	$3,054	$54,858
2021	$3,775	$0	$0	$45,069	$6,225	$3,775	$55,069

Description of CIP Changes:

The construction cash flow projection was adjusted based on the latest schedule update/actual progress of work and provided to AECOM team.

CIP Number: 211002

Project Title: WRRF PS No. 2 Pumping Improvements - Phase 1

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 4/30/2003

Year Project Added to CIP: 2003

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Correct drifting issues of pumps and meet long term wet weather capacity needs

Scope of Work/Project Alternatives:

This project involves evaluating and recommending alternatives for providing more reliable pumping capacity at Pump Station No. 2 for Pumps Nos. 11 and 14.

Other Important Info:

Challenges: Unable to improve the drift issues experienced at pump station 2.

Primary Driver: N/A - Active

Driver Explanation:

N/A - Active

CIP Number: 211002

Project Title: WRRF PS No. 2 Pumping Improvements - Phase 1

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 211002

Project Title: WRRF PS No. 2 Pumping Improvements - Phase 1

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 7/20/2010
End Date: 6/30/2021
Fund: Construction Bond Fund
Usefull Life > Yrs: No
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3
Cost Est. Date: 9/17/2018
Cost Est. Source:
Cost Est. Prepared By: P. Kora

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$174	$174	$174	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/20/2010	6/30/2021

CIP Number: 211002

Project Title: WRRF PS No. 2 Pumping Improvements - Phase 1

Phase: Design & Construction Assistance # 1

Phase Title: CS-1444 Pump Station No. 2 Pumping Improvements

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 9/11/2017

End Date: 5/30/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 2

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$241	$241	$241	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/20/2010	6/9/2016
Construction Assistance - Project Execution	9/11/2017	5/30/2020

CIP Number: 211002

Project Title: WRRF PS No. 2 Pumping Improvements - Phase 1

Phase: Construction (Build) # 1

Phase Title: PC-795, Pump Station No. 2 Pumping Improvements

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Federal Loan Programs

Start Date: 10/17/2016
End Date: 6/30/2021
Fund: Improvement and Extension Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1
Cost Est. Date: 7/31/2019
Cost Est. Source: Contract
Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$2,925	$1,599	$1,599	$1,326	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	10/17/2016	6/30/2021
Construction - Closeout	4/1/2021	6/30/2021

CIP Number: 211002

Project Title: WRRF PS No. 2 Pumping Improvements - Phase 1

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

CIP	5 Year Total	FY16	FY17	FY18	FY19	FY20	Total
2018	$1,920	$456	$1,157	$1,304	$616	$0	$3,533
2019	$3,075	$0	$109	$599	$2,454	$621	$3,783
2020	$1,222	$0	$0	$322	$2,268	$1,222	$3,812
2021	$0	$0	$0	$0	$1,912	$1,860	$3,772

Description of CIP Changes:

The project is delayed because of the field performance issues associated with new pump # 11.

CIP Number: 211004

Project Title: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 3/17/2008

Year Project Added to CIP: 2008

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Rehabilitate aging rack and grit system for efficient removal of grit to reduce loading on downstream process areas

Scope of Work/Project Alternatives:

The scope of work includes modifications and improvements of the existing grit and screening handling system at Pump Station 1 and MPI Sampling Station 1.

Other Important Info:

Challenges: N/A - Active

Primary Driver: N/A - Active

Driver Explanation:

N/A - Active

CIP Number: 211004

Project Title: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 211004

Project Title: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 11/18/2013

End Date: 6/30/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 9/17/2018

Cost Est. Source:

Cost Est. Prepared By: P. Kora

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$813	$798	$798	$15	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/18/2013	6/30/2021

CIP Number: 211004

Project Title: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

Phase: Construction (Build) # 1

Phase Title: PC-789 Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 11/18/2013
End Date: 6/30/2021
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1
Cost Est. Date: 7/31/2019
Cost Est. Source: Contract
Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$22,180	$9,935	$9,935	$12,245	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	11/18/2013	6/30/2021
Construction - Closeout	6/11/2019	6/30/2021

CIP Number: 211004

Project Title: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

Phase: TBD / Future Allocation / General Holding TBD

Phase Title: construction Asistance

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2017

End Date: 6/30/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs
TBD / Future Allocation / General Holding TBD	$302	$302	$302

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2017	6/30/2021

CIP Number: 211004

Project Title: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements

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

CIP	5 Year Total	FY16	FY17	FY18	FY19	FY20	Total
2018	$5,304	$13,887	$2,303	$2,652	$2,652	$0	$21,494
2019	$3,055	$0	$20,944	$3,648	$2,752	$303	$27,647
2020	$869	$0	$0	$24,505	$1,824	$869	$27,198
2021	$0	$0	$0	$0	$26,502	$1,771	$28,273

Description of CIP Changes:

GLWA has decided to delete the grit system rehab work of channels 2 and 3 from the project. And the anticipated credit amount is reflected in the revised cash flow projection. Final completion date may need to be extended again because the outstanding fire alarm work was impacted by COVID-19

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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)**

Main Raw Sewage Pumps at Pump Station 2

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2014

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

This project will improve the pump reliability of PS-2 to meet the NPDES permit flow capacity requirements.

Scope of Work/Project Alternatives:

The preliminary scope of this project is to provide basis of design (study) report for rehabilitation/rebuilding plan for existing pump and its control and any associated equipment. The study will look into the addition of VFD to the three constant speed pumps. The study will not be limited to increasing the capacity of existing pumps to meet the long-term goal for wet weather capacity. The Scope also include: Provide engineering design for rehabilitation/rebuilding of the pumps, replacement of HVAC System, I&C Improvements (i.e. automation, etc.), structural, architectural and electrical improvement, provide design for any recommendation made by the study report. The services during construction are: provide construction assistance, such as review of shop drawings, respond to RFIs, attending progress meetings, verify and assist GLWA with any changes requested by the contractor, etc.

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Construction will follow after the completion of design.

Other Important Info:

Challenges: Shutdowns of the pumps to be rehabilitated will require co-ordination with operations and careful planning to meet NPDES permit requirements for the flow capacity during the construction phase.

Project History: Pump Station No. 2 was built in 1994. Seven out of eight pumps were running since 1994. These pumps never attained the design capacity due to an unidentified drifting problem. The eighth pump (Pump No. 10) was installed under PC-740 with a modified suction elbow that provided better pumping capacity. The VFDs for five (5) pumps were also replaced in 2005 under PC-744 contract.
A new impeller was installed on Pump No. 9 and a rebuilt impeller was installed on Pump No. 16 in 2008, which provided sufficient improvements in pumping capacity. To mitigate the declining of pumping capacity, DWSD initiated a CS-1444/PC-795 PS-2 Pumping Improvements project to rehabilitate Pump No. 11 and Pump No. 14 to solidify the long-term wet weather capacity of 1700 MGD.
It was recommended to rehabilitate the remaining pumps with energy efficient, and more reliable control systems that require less maintenance.

Primary Driver: 2 - Performance

Driver Explanation:

The advantage of rehabilitating Pump Station No. 2 is to increase the long-term rated capacity, operational efficiency, and reliability of the pumping system. Replacement of the existing VFDs and adding new VFDs to constant speed pumps would also provide

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Scoring

Project Manager Weighted Score: 67.40

Criteria Name	Score	Comment
Condition	4	We have started stocking spare parts for the VFD. Mitigation measures also include looking at an interim project to replace the existing outdated VFDs.
Performance (Service Level/Reliability)	3	With spare parts on hand, trips per quarter are down from an average of 25.25 in 2018 and 20.25 in 2019 to 8 in 2020
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	3	Pump Station equipment remain the same, O&M risks remain the same
Public Health and Safety	4	Pump Station equipment remain the same, O&M risks remain the same
Public Benefit	3	Pump Station equipment remain the same, Public Health risks remain the same
Financial	2	Pump Station equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 71.00

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

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$348	$0	$0	$10	$0	$0	$0	$57	$57	$115	$223

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2031

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Phase: Study # 1

Phase Title: CS-130 Pump Station No. 2 Improvements Phase II at Wastewater Treatment Plant (WRRF)

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 6/1/2020
End Date: 6/30/2031
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4
Cost Est. Date: 10/2/2017

Cost Est. Source:
Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study # 1	$3,449	$0	$0	$0	$0	$404	$404	$808	$2,641

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design/Engineering	7/1/2024	6/30/2031
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Phase: Construction (Build) # 1

Phase Title: Pump Station No. 2 Improvements Phase II at Wastewater Treatment Plant (WRRF)

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2026

End Date: 6/30/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$10,000	$0	$0	$0	$0	$0	$10,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2026	6/30/2026
Construction - Project Execution	7/1/2026	6/30/2031
Construction - Closeout	4/1/2031	6/30/2031

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$10,800	$600	$1,700	$4,800	$3,700	$0	$0	$0	$0	$0	$10,800
2019	$19,025	$7	$0	$515	$115	$9,294	$9,101	$3,055	$0	$0	$22,087
2020	$10,674	$0	$0	$0	$684	$711	$611	$8,668	$10,925	$0	$21,599
2021	$3,665	$0	$1	$0	$0	$0	$471	$2,245	$949	$30,384	$34,050

Description of CIP Changes:

Added additional detail and re-scored project

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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)**

Pump Station 1

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 4/13/2017

Year Project Added to CIP: 2016

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Condition assessment and rehabiliation of all pumps at Pump Station No. 1 to increase efficiency and reliability.

Scope of Work/Project Alternatives:

The study/design work will identify all major parts including impellers and wear rings to be refurbished for each pump and all related appurtenances. The construction services will provide rehabilitation and/or replacement as determined in the study and design along with the sequencing of pump shutdown throughout the rehabilitation period.
Investigation and evaluation of all the inlet gates, outlet gates and associated actuators, Motor Control Centers (MCCs) and other related equipment, HVAC system, Control System and provide recommendation and design for rehabilitation or replacement are also part of the scope.

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Other Important Info:

Challenges: Maintaining the adequate pumping capacity during construction.

Project History: GLWA operate two raw sewage pumping stations: PS-1 and PS-2, at the Water Resources Recovery Facility. Raw wastewater (influent) from the collection system flows to the Influent Pumping Station through the Detroit River Interceptor (16 feet in diameter), Oakwood Interceptor (12.5 feet in diameter) and North Interceptor East Arm (NIEA). The main Influent Pumping Station No. 1 (PS-1) was constructed in the 1930s. PS-1 has eight constant speed pumps of various capacities (six were installed in the 1940s and two more were added in 1956) and has a Firm Capacity (largest pump out of service) of 1,225 MGD during wet weather event. The Influent Pumping Station No. 2 (PS-2) has eight raw sewage pumps (combination of variable and constant speed pumps) with a Firm Capacity of 805 MGD during wet weather event.
The pumps at PS-1 were rehabilitated in 2004 and 2005 under PC-744 project (DWP 1007).

Primary Driver: 1 - Condition

Driver Explanation:

The station has exceeded its service life and should be rehabilitated. The station plays a key role in plant operations and if left untouched would decrease the ability for the plant to process wastewater.

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Scoring

Project Manager Weighted Score: 75.00

Criteria Name	Score	Comment
Condition	5	Major equipment has been down for repair for extended periods of time this calendar year. In 2019 the main lift pumps had 199 PMs and 116 Correctives (that is about one every day)
Performance (Service Level/Reliability)	4	Trips are down from last year (31 last year, 3 through August of this year). 2018 had 112 trips for the year. Equipment requires significant maintenance.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Pump Station equipment remain the same, O&M risks remain the same
Public Health and Safety	4	Pump Station equipment remain the same, Public Health risks remain the same
Public Benefit	3	Pump Station equipment remain the same, Public Benefit risks remain the same
Financial	2	Pump Station equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 75.00

Criteria Name	Score	Comment
Condition	5	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	4	Scored in 2019
Public Benefit	3	Scored in 2019
Financial	2	Scored in 2019
Efficiency and Innovation	3	Scored in 2019

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 5/2/2019

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$321	$30	$30	$90	$45	$26	$26	$26	$26	$149	$52

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/2/2019	6/30/2028
Capital Delivery Salary	5/2/2019	6/30/2028

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Rehabilitation of Main Lift Pumps at Pump Station No. 1

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 5/2/2019

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/1/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$4,986	$1,254	$1,254	$533	$533	$533	$534	$533	$533	$2,666	$533

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	5/2/2019	6/30/2027
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of Main Lift Pumps at Pump Station No. 1

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 3/1/2022
End Date: 6/30/2028
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3
Cost Est. Date:
Cost Est. Source: Contract
Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$63,402	$0	$0	$2,483	$7,428	$7,449	$6,640	$7,000	$31,000	$32,402

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	9/1/2021	2/28/2022
Construction - Project Execution	3/1/2022	6/30/2027
Construction - Closeout	4/1/2028	6/30/2028

CIP Number: 211006

Project Title: WRRF PS No. 1 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	Total
2018	$13,129	$600	$5,350	$5,125	$2,054	$0	$0	$0	$0	$13,129
2019	$23,401	$0	$500	$1,800	$2,462	$9,394	$9,245	$719	$0	$24,120
2020	$21,733	$0	$498	$1,803	$2,325	$8,424	$8,370	$811	$84	$22,315
2021	$25,841	$0	$6	$929	$645	$551	$8,532	$12,772	$3,341	$26,776

Description of CIP Changes:

Added additional details. Increased the construction amount. Construction amount is being estimated by the consultant.

CIP Number: 211007

Project Title: WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Project Status: Active - Procurement - Board Approved - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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)**

Pump Station 2, Grit channels

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 10/12/2016

Year Project Added to CIP: 2016

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Replacement of all bar racks and associated equipment and addition of fine screens (1/4 inch) for more reliable and efficient screenings removal. Addition of screenings washing and compaction to reduce truck traffic and cost of disposal. Improvement of grit collection system with more efficient, state-of-the-art, grit collection and pumping system, and grit washing and classification to reduce truck traffic and cost of disposal. Improvements to the grit screenings and grit removal and handling systems will improve the performance of all downstream processes, reduce maintenance costs and increase life of downstream equipment.

Scope of Work/Project Alternatives:

The work consists of evaluation, design and construction of the replacement of the existing bar racks and ancillary equipment and gates, addition of new fine screens (1/4 inch) downstream of the bar racks, addition of screenings washing and compaction, inclusion of stacked tray grit removal or other technology within the aerated grit tank and grit washing and/or classification. Work also includes the upgrade and expansion as necessary of the existing building that houses the screens and the screenings and grit handling and load out, including all lighting, HVAC, plumbing, electrical, and architectural work. New instrumentation and controls for operations and monitoring will also be provided. System shall be designed to meet long-term wet weather capacity requirements at PS2.

Other Important Info:

*Innovation note: Include new grit removal equipment rather than replacement in kind (cyclonic).
The CIP Project Proposal – CIP 1314 – "Replacement of Bar Racks at Pump Station No. 2" and CIP Project Proposal – CIP 1223 – "Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WWTP" are combined into one project under CIP 1314. That combined new budget for CIP 1314 (CIP 1223 and 1314) has a total amount of $11,617,000. The design of "Rehabilitation of Sampling Sites" is completed and will be bid separately for construction. The previous design for Bar Rack System by Sigma under As Needed Engineering Services Contact task order will not proceed for construction as designed. An engineering decision to have a fresh look and start new study, design and construction project through this CIP project will proceed. The original budget for CIP-1314 is $3.667M. The $6.0M CIP budget transfer was made

from CIP-1223. The new revised CIP-1314 budget is $9.667

Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Project History: The Pump Station No. 2 Rack and Grit Collection system have been in service for almost twenty years. The equipment is near the end of its useful life. Improper transport of collected screenings has been ongoing problem and rags and other floatable materials are not screened thoroughly.
The condition and reliability of the Pump Station No. 2 Grit System was inspected, and the grit crane was upgraded in 2002 by PC-744/DWP-1006.
? The HVAC system was found in good condition but needs some rehabilitation due to its ending life cycle.
? Modifications are needed to the existing Grit removal system because of the draining issues. Grit Chambers cannot be emptied due to clogged drains.
? Grit carry over cause deterioration of the downstream process and equipment
? Rehabilitation/Replacement of screening belt since the equipment is nearing to its useful life.
? Rehabilitation of Grit Channel Drain Gate stems.
The bar screen foundations, screen frames, and conveyance chutes in PS-2 have been in service for approximately twenty years.

Primary Driver: 2 - Performance

Driver Explanation:

Plant operations report on the failure of shear pins and accelerated wearing and tearing of the bar racks causing downtime for the maintenance and violation of the permit

CIP Number: 211007

Project Title: WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Scoring

Project Manager Weighted Score: 70.60

Criteria Name	Score	Comment
Condition	3	System continues to exhibit moderate deterioration.
Performance (Service Level/Reliability)	4	Plant continues to experience poor performance from the system (large amounts of rags and grit are being found downstream)
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Pump Station Grit and Screening equipment remain the same, O&M risks remain the same
Public Health and Safety	3	Pump Station Grit and Screening equipment remain the same, Public Health risks remain the same
Public Benefit	3	Pump Station Grit and Screening equipment remain the same, Public Benefit risks remain the same
Financial	3	Pump Station Grit and Screening equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Projects goals were modified to include new advancements in screening and grit removal. Project could also include a wet weather side stream. project will utilize a new construction method to have lessons learned from the first channel incorporated into the design.

Risk Committee Weighted Score: 65.20

Criteria Name	Score	Comment
Condition	3	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	3	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	1	Scored in 2019

CIP Number: 211007

Project Title: WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$329	$5	$5	$57	$57	$57	$47	$46	$46	$254	$12

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2027

CIP Number: 211007

Project Title: WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: Replacement of Bar Racks at Pump Station No.2

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 6/1/2020
End Date: 4/29/2026
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4
Cost Est. Date: 10/2/2017

Cost Est. Source:
Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$15,501	$0	$0	$2,266	$2,246	$2,246	$2,252	$2,246	$1,864	$10,853	$2,382

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	9/2/2020	4/29/2026
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211007

Project Title: WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements

Phase: Construction (Build) # 1

Phase Title: Replacement of Bar Racks at Pump Station No.2

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 3/15/2023
End Date: 6/30/2027
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4
Cost Est. Date: 10/2/2017

Cost Est. Source:
Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$60,399	$0	$0	$4,684	$15,874	$15,831	$13,142	$49,530	$10,869

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	9/15/2022	3/14/2023
Construction - Project Execution	3/15/2023	4/29/2026
Construction - Closeout	4/1/2027	6/30/2027

CIP Number: 211007

Project Title: WRRF PS #2 Bar Racks Replacements and Grit Collection 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	Total
2018	$9,667	$650	$2,900	$3,300	$2,817	$0	$0	$0	$0	$0	$9,667
2019	$11,749	$0	$7	$402	$1,980	$2,404	$6,956	$8,814	$0	$0	$20,563
2020	$17,781	$0	$6	$269	$1,329	$2,039	$6,306	$7,838	$49	$0	$17,836
2021	$67,697	$0	$1	$256	$3,098	$7,546	$2,120	$20,899	$34,034	$8,642	$76,596

Description of CIP Changes:

Updated status and pictures

CIP Number: 211008

Project Title: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Project Status: Active - Pre-Procurement - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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)**

Ferric Chloride Storage and Containment Area

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The Ferric Chloride Systems at PS-1 is used to reduce phosphorus to the required permit levels. The system, which includes chemical storage tanks, secondary containment, valves, and piping is in need of rehabilitation. The Complex B sludge lines are clogged due to Struvite and need rehabilitation/replacement.

Scope of Work/Project Alternatives:

The scope of work will include study design and construction for the ferric chloride feed system at PS-1. Specifically it will include: a study to evaluate alternative locations for application of ferric chloride, a pilot study to test alternative application points, and inspection of the existing chemical feed systems, a study to provide recommendations for system modifications and improvements, design of recommended system improvements, and construction of chemical feed system improvements. Evaluation and recommended design and construction of the sludge lines in Complex B is also included in the scope.

Other Important Info:

*Innovation note: Align sizing & design with U of M phosphorus & enhanced carbon capture studies, as well as improved mixing of the ferric with primary influent.

Challenges: Maintaining capacity of the existing feed system during construction will be a challenge. Also, determining the simplest system that will meet current and future phosphorous limits for both primary and secondary effluent will be a challenge.

Project History: There are phosphorous effluent permit limits for both primary effluent (during wet weather) and for secondary effluent. Effluent limits for phosphorous were lowered again in 2016 and now stand at 1.5 mg/l for primary effluent and 0.7 mg/l (October – March) and 0.6 mg/l (April – September) for secondary effluent. GLWA has historically been able to meet the phosphorous limits for both primary and secondary effluent by adding ferric chloride to the primary clarifier influent. The physical/chemical removal in the primary clarifiers lowered the phosphorous concentrations to meet the primary effluent limits. However, GLWA has begun to experience some difficulty with the settling of the secondary biomass in the final clarifiers. Preliminary investigations have indicated that this settling ability issue could be caused by low phosphorous concentrations in the secondary influent wastewater. This is because the biomass in the secondary system requires a certain ratio of carbon (CBOD), nitrogen, and phosphorous to reduce the pollutant concentrations and then settle in the final clarifiers. As such, in addition to rehabilitating the ferric chloride system at PS-1, there also needs to be a study and possibly pilot test conducted to review the best location for ferric chloride addition to the wastewater.

Primary Driver: 1 - Condition

Driver Explanation:

The current chemical feed systems at PS-1 has

deteriorated to the point where this need to be rehabilitated.

CIP Number: 211008

Project Title: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Scoring

Project Manager Weighted Score: 74.20

Criteria Name	Score	Comment
Condition	4	Ferric equipment continues to degrade, and the SCB-30 line continues to see issues with meeting capacity.
Performance (Service Level/Reliability)	4	Current equipment for Ferric system is temporary and has confused operations leading to unintended events
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	3	Ferric equipment and transfer line remain the same, O&M risks remain the same
Public Health and Safety	4	Ferric equipment and transfer line remain the same, Public Health risks remain the same
Public Benefit	3	Ferric equipment and transfer line remain the same, Public Benefit risks remain the same
Financial	3	Ferric equipment and transfer line remain the same, Financial risks remain the same
Efficiency and Innovation	4	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 74.20

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	3	Scored in 2019
Public Health and Safety	4	Scored in 2019
Public Benefit	3	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	4	Scored in 2019

CIP Number: 211008

Project Title: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 9/16/2019

End Date: 9/4/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/1/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$397	$136	$136	$204	$46	$11	$0	$0	$0	$57	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/16/2019	9/4/2022
Capital Delivery Salary	9/16/2019	9/4/2022

CIP Number: 211008

Project Title: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Phase: Study & Design & Construction Assistance # 1

Phase Title: Rehabilitation of Ferric Chloride Feed Systems

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 9/16/2019

End Date: 9/4/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$2,357	$1,494	$1,494	$396	$396	$72	$0	$0	$0	$467	$0

Phase Dates

Activity Name	Start Date	End Date
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	9/16/2019	9/4/2022
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211008

Project Title: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of Ferric Chloride Feed Systems

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 12/3/2020

End Date: 9/4/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Construction (Build) # 1	$8,634	$0	$0	$2,829	$4,916	$889	$5,805

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	6/5/2020	12/2/2020
Construction - Project Execution	12/3/2020	9/4/2022
Construction - Closeout	6/6/2022	9/4/2022

CIP Number: 211008

Project Title: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	$9,633	$400	$1,400	$5,200	$2,000	$633	$0	$0	$9,633
2019	$9,650	$0	$7	$115	$1,259	$2,732	$5,537	$2,363	$12,013
2020	$9,533	$12	$1,021	$2,950	$4,983	$1,600	$0	$0	$10,566
2021	$9,408	$0	$178	$1,239	$5,522	$3,886	$0	$0	$10,825

Description of CIP Changes:

This project was moved forward due to SRF funding Source to begin in FY 2019.

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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)**

Primary Circular Scum House, Inside

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The circular clarifiers scum removal system is over 10 years old and need to be rehabilitated. They will help protect the secondary treatment process by preventing scum from entering the aeration tanks.

Scope of Work/Project Alternatives:

This project will provide for the study, design, and construction of new scum equipment in the Scum Buildings for the circular clarifiers. The study will consist of an evaluation of the existing process and simplified alternative systems for scum removal including the scum removal from the buildings. Future alternatives for scum disposal, such as addition to an anaerobic digestion process, will be considered. All alternatives will be evaluated for energy efficiency (reduction of electrical usage). The scum removal system at the rectangular PCs will also be evaluated to determine which aspects can be applied to the circular SBs. Design and construction services will be included for the selected scum removal system.

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Other Important Info:

*Innovation note: See project write-up -- evaluate alternatives for energy efficiency.

Project History: There are 12 rectangular PCs (1-12) and 6 circular PCs (13-18) clarifiers at the WRRF. PCs remove TSS, BOD, and phosphorous through a chemically enhanced settling process. The clarifiers also remove fats, oils, and grease (FOG or scum) by skimming the surface of the clarifiers and transporting the scum to a SB where it can be concentrated and pumped again to be hauled off site. The SBs for the rectangular clarifiers were recently rehabilitated. They have a fairly simple system and appear to be operating well. The SBs for the circular clarifiers utilize a somewhat complex transport and concentration system. New SBs were installed for PCs 17 and 18 when they were constructed. Since their installation, the equipment in the circular clarifier SBs has been complicated to operate and difficult to maintain. Much of the equipment is out of service for extended periods of time.

Challenges: Each of the scum removal facility serves two circular clarifiers, so two circular clarifiers at a given time needs to be out of services during rehabilitation, this will limit the primary capacity to minimum to meet NPDES permit requirements.

Primary Driver: 1 - Condition

Driver Explanation:

The condition of the existing equipment is old and complicated, this results in significant down time and maintenance challenges.

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Scoring

Project Manager Weighted Score: 65.60

Criteria Name	Score	Comment
Condition	4	Performance continues to decline. (we had 143 PMs and correctives for 2019 and from January to August of 2020 we have had 266)
Performance (Service Level/Reliability)	5	Performance of the system is still poor, it does not run in automatic.
Regulatory (Environmental/Legal)	3	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	System does not run in automatic, system requires extensive maintenance to keep it in operation
Public Health and Safety	2	Scum collection equipment remain the same, Public Health risks remain the same
Public Benefit	2	Scum collection equipment remain the same, Public Benefit risks remain the same
Financial	3	Scum collection equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 61.20

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	5	Scored in 2019
Regulatory (Environmental/Legal)	3	Scored in 2019
Operations and Maintenance	2	Scored in 2019
Public Health and Safety	2	Scored in 2019
Public Benefit	2	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	3	Scored in 2019

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/12/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/1/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	$258	$3	$3	$62	$52	$51	$46	$44	$193

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	3/12/2025

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase: Study & Design & Construction Assistance # 1

Phase Title: Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/12/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Study & Design & Construction Assistance # 1	$1,750	$0	$0	$181	$424	$424	$425	$296	$1,569

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	1/26/2021	3/12/2025
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 1/21/2023
End Date: 3/12/2025
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3
Cost Est. Date:
Cost Est. Source:
Cost Est. Prepared By: Engineer

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	5 Year Total
Construction (Build) # 1	$11,000	$0	$0	$2,265	$5,148	$3,587	$11,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	7/24/2022	1/20/2023
Construction - Project Execution	1/21/2023	3/12/2025
Construction - Closeout	12/12/2024	3/12/2025

CIP Number: 211009

Project Title: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

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	$7,801	$266	$324	$1,870	$2,671	$2,670	$2,679	$0	$0	$10,480
2019	$7,234	$0	$0	$7	$859	$572	$5,796	$5,005	$0	$12,239
2020	$11,359	$0	$0	$0	$778	$619	$5,237	$4,725	$35	$11,394
2021	$13,228	$0	$0	$21	$313	$1,254	$802	$8,715	$2,144	$13,249

Description of CIP Changes:

Minor changes to the timing of projected expenses.

CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

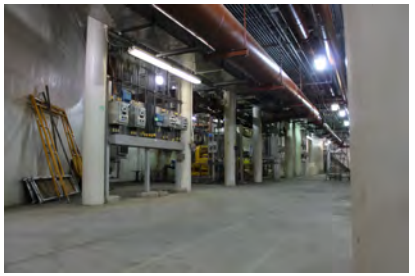
☐ **Water Master Plan Right Sizing**

☑ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**



Complex B, Basement

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/21/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Both Complex A and Complex B have reached the end of their design life. The majority of the equipment for the two processes are located below grade in areas prone to flooding. Tanks are located above grade and have little to no access around the perimeter, this limits and reduces cleaning effectiveness. Both the valves and the pumps used to transfer sludge to the BDF are past their design life. Equipment breakage affects the plant ability to process sludge.

Scope of Work/Project Alternatives:

The work consists of evaluation, design and rehabilitation of both Complex A and Complex B. Scope to include tank repair to improving tank access and increase life, building and process repair to including structural, mechanical, process, electrical, and instrumentation replacement. Scope should focused on relocating the sludge pumps from below grade to above grade which could include new above grade structures and cross connecting pumps to allow for additional flexibility in feeding the BDF process.

Other Important Info:

Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Primary Driver: 8 - Efficiency

Driver Explanation:

Equipment has exceeded its design life.

CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

Scoring

Project Manager Weighted Score: 65.00

Criteria Name	Score	Comment
Condition	2	WRRF staff continues to support the system. Cleaning of pipes and piping modifications are helping to extend the life of this system.
Performance (Service Level/Reliability)	2	The system continues to operate and provide service. With the completion of 211008 the system should be able to meet catch-up demands.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	5	Process equipment remain the same, Public Health risks remain the same
Public Benefit	4	Process equipment remain the same, Public Benefit risks remain the same
Financial	2	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	2	Process and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 65.00

Criteria Name	Score	Comment
Condition	2	Scored in 2019
Performance (Service Level/Reliability)	2	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	5	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	2	Scored in 2019
Efficiency and Innovation	2	Scored in 2019

CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

Phase: GLWA Salaries

Phase Title: Project Mgt

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2030

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$446	$42	$42	$64	$42	$42	$42	$42	$167	$173

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

CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

Phase: Study # 1

Phase Title: TBD

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 10/15/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	5 Year Total	FY27+
Study # 1	$1,370	$0	$0	$70	$245	$245	$560	$810

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	3/19/2024	10/15/2028
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 1/8/2026

End Date: 6/30/2030

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Construction (Build) # 1	$12,118	$0	$0	$1,709	$1,709	$10,409

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	7/11/2025	1/7/2026
Construction - Project Execution	1/8/2026	10/15/2028
Construction - Closeout	4/1/2030	6/30/2030

CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

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

CIP	5 Year Total	FY24	FY25	FY26	Total
2021	$926	$178	$748	$13,113	$14,039

Description of CIP Changes:

Updated scoring

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Primary Treatment

☐ **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: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/7/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Addition of fine screens (1/4 inch) for more reliable and efficient screenings removal. Addition of screenings washing and compaction to reduce truck traffic and cost of disposal. Improvement of grit collection system with more efficient, state-of-the-art, grit collection and pumping system, and grit washing and classification to reduce truck traffic and cost of disposal. Improvements to the grit screenings and grit removal and handling systems will improve the performance of all downstream processes, reduce maintenance costs and increase life of downstream equipment.

Scope of Work/Project Alternatives:

The work consists of evaluation, design and construction of the addition of new fine screens (1/4 inch) downstream of the bar racks, addition of screenings washing and compaction, inclusion of stacked tray grit removal within the aerated grit tank and grit washing and/or classification. Work also includes the upgrade and expansion as necessary of the existing building that houses the screens and the screenings and grit handling and load out, including all lighting, HVAC, plumbing, electrical, and architectural work. New instrumentation and controls for operations and monitoring will also be provided. System shall be designed to meet long-term wet weather capacity requirements at PS1.

Other Important Info:

Maintaining the MDEQ-NPDES required capacity during the construction phase of the project. Coordination with the CIP Number 211006

Primary Driver: 2 - Performance

Driver Explanation:

Grit and screen system is not capturing enough material and its being found in downstream processes.

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

Scoring

Project Manager Weighted Score: 58.60

Criteria Name	Score	Comment
Condition	3	WRRF staff continue to improve on the existing system. Materials are being exchanged out for better materials.
Performance (Service Level/Reliability)	4	Improvement are being made to improve capture rates
Regulatory (Environmental/Legal)	2	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	2	Process equipment remain the same, Public Health risks remain the same
Public Benefit	2	Process equipment remain the same, Public Benefit risks remain the same
Financial	4	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 64.00

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	5	Scored in 2019
Regulatory (Environmental/Legal)	2	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	2	Scored in 2019
Public Benefit	2	Scored in 2019
Financial	4	Scored in 2019
Efficiency and Innovation	3	Scored in 2019

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 2/28/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$303	$0	$0	$42	$57	$100	$203

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	2/28/2031

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Addition of Fine Screens, New Grit Collection System

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 2/28/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$18,000	$0	$0	$75	$75	$17,925

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	2/3/2025	5/4/2025
Design - Procurement	5/5/2025	12/31/2025
Design - Project Execution	1/1/2026	2/28/2031
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

Phase: Construction (Build) # 1

Phase Title: Addition of Fine Screens, New Grit Collection System

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 1/1/2028

End Date: 2/28/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	$75,000	$0	$0	$75,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	7/4/2027	12/31/2027
Construction - Project Execution	1/1/2028	2/28/2031
Construction - Closeout	11/30/2030	2/28/2031

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

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

CIP	5 Year Total	FY25	FY26	Total
2021	$14	$14	$100,733	$100,747

Description of CIP Changes:

Updated Scoring

CIP Number: 212003

Project Title: WRRF Aeration System Improvements

Project Status: Closed

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 4/25/2008

Year Project Added to CIP: 2008

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Improve aeration system and provide necessary inter-connections

Scope of Work/Project Alternatives:

The scope of work includes study, design, and construction assistance for the oxygen baffle on Bay 10 of A1 & A2 decks, replacement of influent, Return Activated Sludge (RAS) piping, isolation gate and valves for decks Nos. 3 & 4, replace RAS and influent magmeters for Intermediate Lift Pumps (ILP) Nos. 3, 4 & 7. The work also includes replacement of influent gates and operators on Aeration Deck No. 1 & 2.

Other Important Info:

Challenges: N/A

Primary Driver: N/A - Under Procurement

Driver Explanation:

N/A - Under Procurement

CIP Number: 212003

Project Title: WRRF Aeration System Improvements

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 212003

Project Title: WRRF Aeration System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Federal Loan Programs

Start Date: 2/21/2012

End Date: 7/1/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 7/31/2019

Cost Est. Source:

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$355	$355	$355	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/21/2012	7/1/2020

CIP Number: 212003

Project Title: WRRF Aeration System Improvements

Phase: Study & Design & Construction Assistance # 1

Phase Title: CS-157 Aeration System Improvements

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Federal Loan Programs

Start Date: 2/21/2012

End Date: 7/1/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date: 9/17/2019

Cost Est. Source: Contract

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$447	$405	$405	$42	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	2/21/2012	7/1/2020

CIP Number: 212003

Project Title: WRRF Aeration System Improvements

Phase: Construction (Build) # 1

Phase Title: PC-796 Aeration System Improvements

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Federal Loan Programs

Start Date: 10/3/2016

End Date: 7/1/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date: 9/17/2018

Cost Est. Source: Contract

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$13,841	$13,883	$13,883	($42)	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	10/3/2016	7/1/2020
Construction - Closeout	4/2/2020	7/1/2020

CIP Number: 212003

Project Title: WRRF Aeration 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	Total
2018	$13,855	$2,348	$11,197	$2,658	$0	$16,203
2019	$5,242	$3,805	$9,273	$2,719	$2,523	$18,320
2020	$0	$0	$11,851	$4,831	$0	$16,682
2021	$0	$0	$0	$16,356	$136	$16,492

Description of CIP Changes:

This project is complete, final payment is made and is closed out.

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 8/8/2016

Year Project Added to CIP: 2010

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The disinfection complex equipment condition has deteriorated because of the corrosive characteristics of the chemicals utilized in the operations of the area. This project is needed to restore equipment performance to OEM levels.

Scope of Work/Project Alternatives:

Scope of Work is to refurbish evaporators, chlorinators/sulfonators, replace regulating check valves, ejectors, process water valves, gas safety panels, compressors, gas flow meters, and all accessories and appurtenances. This proposed CIP budget is for construction only. The design and construction assistance services are budgeted through "As Needed Engineering Services Contract CS-1481, Task #23".

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Other Important Info:

*Innovation note: Align with considerations of alternative disinfection.
The maintenance of the equipment hasn't been performed at the recommended intervals. Rebuilding the equipment and maintaining them according to OEM specifications would provide reliable performance.

Challenges: Chlorine and sulfur dioxide are both extremely hazardous toxic chemicals that can impact staff and the public if an uncontrolled gas release occurs. Maintaining staff safety, regulatory compliance, and meeting production requirements is a challenge.

Project History: The DMT Disinfection Complex was commissioned in 2003 and was expected to operate until 2023 without any major projects. However budget and staffing reductions caused the scheduled maintenance to be reduced so the equipment condition has deteriorated.

Primary Driver: 1 - Condition

Driver Explanation:

Non-compliance with the manufacturers recommended maintenance schedule has caused the disinfection equipment condition to deteriorate.

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/27/2017

End Date: 6/21/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$109	$64	$64	$45	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/27/2017	6/21/2021

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Phase: Construction Assistance # 1

Phase Title: CS-301 Task 23 - General Eng Serves (Sigma)

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/27/2017

End Date: 6/21/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Existing DWSD contract coverted over to new GLWA contract.

Cost Est. Class: Class 5

Cost Est. Date: 9/12/2018

Cost Est. Source: Contract

Cost Est. Prepared By: WRRF Eng Design

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction Assistance # 1	$351	$238	$238	$113	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction Assistance - Project Execution	6/27/2017	6/21/2021

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Phase: Construction (Build) # 1

Phase Title: Chlorination and Dechlorination Process Equipment Improvements

Phase Budget: Wastewater

Phase Status: Under Procurement

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 9/30/2019

End Date: 6/20/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction (Build) # 1	$5,282	$3,501	$3,501	$1,782

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	12/2/2018	4/1/2019
Construction - Procurement	4/2/2019	9/29/2019
Construction - Project Execution	9/30/2019	6/20/2021
Construction - Closeout	3/22/2021	6/20/2021

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	Total
2018	$5,000	$0	$400	$2,800	$1,800	$0	$5,000
2019	$5,184	$86	$0	$2,101	$2,422	$661	$5,270
2020	$4,015	$0	$117	$913	$2,345	$1,670	$5,045
2021	$1,850	$0	$0	$190	$3,726	$1,850	$5,766

Description of CIP Changes:

This project is in active construction phase and is progressing ahead of schedule

CIP Number: 212006

Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Project Status: Pending Closeout

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 2/11/2015

Year Project Added to CIP: 2014

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Rouge River Outfall

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Provide project oversight and design build services for alternative disinfection services to meet NPDES Permit requirements at existing Rouge River Outfall

Scope of Work/Project Alternatives:

The consultant shall provide comprehensive professional services for project oversight and Owner's representation for the PC-797 RRO Disinfection Progressive Design-Build Contract. The scope of work consists of completing basis of design, design and construction services to develop and implement a solution that will result in 100% disinfection of wet weather flow discharged from WRRF to Detroit River outfall and Rouge River Outfall in order to meet NPDES Permit requirements.

Other Important Info:

Challenges: N/A - Under Procurement.

Project History: The DR0-2 Outfall was originally designed in 1998 under CS-1150, and construction began in 1999 under PC-709. Some surface construction work and substantial underground work were performed, including construction of the entrance shaft, two access shafts, six diffuser riser shafts in the Detroit River, and about half of the length of the tunnel. On April 23, 2003, uncontrollable high rates of ground water mixed with Hydrogen Sulfide (H2S) inflow flooded the tunnel, and it has remained so since that time.
After the tunnel flooded, GLWA (then DWSD) terminated the PC-709 contract and looked for other alternative to complete the work. After further study of the tunnel construction a different alternative was considered and thus, scope for the Modified Detroit River Outfall No. 2 (MOD DR0-2) under CS-1448 design was established. This contract called for a design to construct a new rock tunnel at a higher

elevation with Slurry Shield Tunnel Boring Machine (TBM). The design of the MOD DR0-2 was completed on December 2007 and the construction of the DR0-2 project under PC-771 was started on November 2008. Due to economic hardship during the fiscal year 2008/2009, DWSD requested MDEQ to terminate this contract. After further discussion an agreement reached with GLWA (then DWSD) and MDEQ to allow termination of this Contract and look for feasible and cost effective solutions to meet the wet-weather discharge to Rouge River Outfall. Therefore, on April 2009, GLWA (then DWSD) terminated the PC-771, MOD DR0-2 Contract.

The Rouge River Outfall No. 2 (RR0-2) proposal was first developed in 2009. The RR0-2 was to be a ground level conduit extending approximately 2,500 feet to the intersection of the Rouge River and the Rouge Shipping canal. The RR0-2 conduit was to be used during the wet-weather events and primary effluent to the river shall be disinfected by mixing of Chlorine and De-chlorination. The Basis of Design (BOD) for the RR0-2 project was issued on November 6, 2009. GLWA (then DWSD) performed a RR0-2 Segment- 1 contract to do the ancillary work such as modification of gates, stop logs and chlorine tank shut off valves at WRRF.

In 2012/2013 the WRRF commissioned a study of the feasibility of alternative disinfection methods for meeting the requirements of the Rouge River Disinfection. The results of this study and a subsequent hydraulic study came to the conclusion that the existing conduits to the Rouge River had sufficient contact time to properly disinfect and dechlorinate the secondary effluent from the WRRF. If a method could be designed to shunt secondary flows to the Rouge

River during wet weather and send primary effluent through the longer DRO, then a substantial savings would result from a new design approach. This approach was further explored and discussed with the MDEQ. The result is a NPDES permit modification allowing for the construction of the proposed Rouge River Outfall Disinfection project,

keeping the April 2019 project completion date that had been in the NPDES permit.

Primary Driver: N/A - Under Procurement

Driver Explanation:

N/A - Under Procurement

CIP Number: 212006

Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 212006

Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Federal Loan Programs

Start Date: 2/19/2016

End Date: 6/30/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 7/31/2019

Cost Est. Source:

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$594	$594	$594	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/19/2016	6/30/2020

CIP Number: 212006

Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase: Construction (Build) # 1

Phase Title: PC-797 Rouge River Outfall (RRO) Disinfection (Alternative)

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Federal Loan Programs

Start Date: 7/1/2016
End Date: 6/30/2020
Fund: Improvement and Extension Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1
Cost Est. Date: 7/31/2019
Cost Est. Source: Contract
Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$40,702	$40,702	$40,702	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	7/1/2016	6/30/2020
Construction - Closeout	4/1/2020	6/30/2020

CIP Number: 212006

Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase: Construction Management # 1

Phase Title: CS-1781 Rouge River Outfall (RRO) Disinfection (Alternative)

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Federal Loan Programs

Start Date: 2/19/2016
End Date: 6/30/2020
Fund: Improvement and Extension Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1
Cost Est. Date: 7/31/2019
Cost Est. Source: Contract
Cost Est. Prepared By: P. Kora

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction Management # 1	$2,493	$2,493	$2,493	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Project Execution - Construction Management (RPR) Services	2/19/2016	6/30/2020

CIP Number: 212006

Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

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

CIP	5 Year Total	FY16	FY17	FY18	FY19	FY20	Total
2018	$40,340	$729	$6,530	$15,800	$15,520	$9,020	$47,599
2019	$19,974	$0	$6,873	$20,619	$15,817	$4,157	$47,466
2020	$4,583	$0	$0	$26,441	$17,009	$4,583	$48,033
2021	$0	$0	$0	$0	$41,692	$2,748	$44,440

Description of CIP Changes:

This project is complete and waiting for the close out documentation to release the retention.

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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)**

Secondary Clarifier

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The secondary clarifiers need to be inspected and rehabilitated for certain components such as the rake arms.

Scope of Work/Project Alternatives:

This project will provide for inspection, study, design, and construction for refurbishing the secondary clarifiers. A key component will be the inspection of the concrete and the rake arms. Once the condition of these components is determined, alternatives will be evaluated, and the selected alternative will be designed and constructed. The scope will also include evaluating and designing isolation gates for the individual clarifiers. The B Houses have energy intensive HVAC units. These will be evaluated for potential payback with alternative, energy efficient units.

Other Important Info:

Challenges: This will be a long-term project because only one or two clarifiers can be taken out of service at a time. Also, there may be different levels of rehabilitation for each clarifier depending upon the results of the inspection.

Project History: There are 25 secondary clarifiers at the GLWA WRRF. They have been rehabilitated in the past for other components such as RAS pumps, troughs and weirs, and center drives. It is time to refurbish some of the other key components.

Primary Driver: 1 - Condition

Driver Explanation:

Some of the key components are approaching the end of their useful life.

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Scoring

Project Manager Weighted Score: 53.20

Criteria Name	Score	Comment
Condition	4	System continues to exceed its design life and is in poor condition.
Performance (Service Level/Reliability)	3	WRRF staff continues to maintain the system and allows the system to perform adequately.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	3	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	1	Process equipment remain the same, Public Health risks remain the same
Public Benefit	4	Process equipment remain the same, Public Benefit risks remain the same
Financial	1	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	1	Process and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 53.20

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	3	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	3	Scored in 2019
Public Health and Safety	1	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	1	Scored in 2019
Efficiency and Innovation	1	Scored in 2019

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/1/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$402	$0	$0	$10	$47	$47	$47	$50	$201	$200

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2031

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Phase: Study & Design & Construction Assistance # 1

Phase Title: Rehabilitation of the Secondary Clarifiers

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$1,974	$0	$0	$77	$193	$193	$193	$655	$1,319

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	2/5/2023	6/30/2031
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of the Secondary Clarifiers

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 5/25/2025

End Date: 6/30/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By: Engineer

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$47,495	$0	$0	$0	$3,073	$3,073	$44,422

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2025	6/30/2025
Construction - Project Execution	5/25/2025	6/30/2031
Construction - Closeout	4/1/2031	6/30/2031

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$20,500	$301	$3,576	$5,543	$5,540	$5,540	$10,499	$0	$0	$0	$30,999
2019	$15,129	$0	$0	$859	$1,374	$3,680	$9,216	$19,676	$0	$0	$34,805
2020	$1,004	$0	$0	$0	$0	$0	$71	$933	$29,114	$0	$30,118
2021	$1,853	$0	$0	$0	$0	$15	$427	$879	$532	$28,288	$30,141

Description of CIP Changes:

Project schedule was adjusted to begin construction after we estimate PS No. 1 rack and grit improvements project to take place.

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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)**

Aeration Basin 1 and ILP's 1 and 2

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 9/14/2017

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen and chemical use resulting in a more sustainable treatment system, and implementation of step feed will improve high flow management through the secondary system increasing the volume of flow that can be treated through the secondary system thus minimizing the volume of flow discharged without secondary system. Hydraulic improvements

Scope of Work/Project Alternatives:

The work consists of evaluation, design and construction of the replacement of ILPs 1 & 2, conversion of aeration decks 1 & 2 to incorporate biological phosphorus removal, including replacement of mixers in Bays 1, 2 and 3, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. Weir length will be increased to reduce the variation in the hydraulic grade line across the tank to maintain adequate submergence of mixer/aerators and reduce the frequency of mixer/aerators tripping out on surge. Replacement of Mixer/aerators in Decks 4 through 10 will be evaluated and could be included as an add-alternate to the contract.

ease operations and minimize the operator attention on the numerous surface aerators.

Other Important Info:

Opportunity for a common header system to allow for any ILP to supply any bioreactor. If feasible provide ILPs that can meet the regulatory and dry weather needs without the need for speed control.

Challenges: Maintaining the required wet weather secondary capacity of 930 MGD while operating efficiently during dry weather flows.

Project History: ILP Station No. 1 houses ILP Nos. 1 and 2. The pumps are vertical turbine type each with a maximum capacity of 365 MGD and a motor size of 2,500 hp. The pumps are equipped with variable frequency drives (VFDs) to vary the pump speed. ILP Nos. 1 and 2 can feed Aeration Deck Nos. 1 and 2.

ILP Station No. 2 houses ILP Nos. 3, 4, and 7. The pumps are vertical turbine pumps with a maximum rated design capacity of 350 MGD each and a motor size of 2,500 hp. The pumps are also equipped with VFDs. ILP Nos. 3 and 4 feed Aeration Deck Nos. 3 and 4, while ILP No. 7 is a swing pump and can be used to transfer wastewater to Aeration Deck Nos. 2, 3, or 4.

Primary Driver: 3 - Regulatory

Driver Explanation:

System is required to meet permit

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Scoring

Project Manager Weighted Score: 67.80

Criteria Name	Score	Comment
Condition	4	Equipment continues to require extensive maintenance and is considered to be in poor condition. During 2019 the mixers tripped off 1,854 times (averaging once every 5 hours) with the ILP's tripping off 16 times (these are large 2500 HP motors)
Performance (Service Level/Reliability)	3	WRRF staff continue to improve on operational and maintenance procedures.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	3	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	3	Process equipment remain the same, Public Health risks remain the same
Public Benefit	3	Process equipment remain the same, Public Benefit risks remain the same
Financial	3	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 67.80

Criteria Name	Score	Comment
Condition	4	Scored in 2020
Performance (Service Level/Reliability)	3	Scored in 2020
Regulatory (Environmental/Legal)	4	Scored in 2020
Operations and Maintenance	3	Scored in 2020
Public Health and Safety	3	Scored in 2020
Public Benefit	3	Scored in 2020
Financial	3	Scored in 2020
Efficiency and Innovation	4	Scored in 2020

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 10/1/2018

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$1,163	$16	$16	$828	$82	$47	$47	$47	$47	$272	$47

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2027
Capital Delivery Salary	6/1/2020	6/30/2027

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Phase: Study & Design & Construction Assistance # 1

Phase Title: WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/15/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$16,467	$0	$0	$1,436	$2,484	$2,484	$2,491	$2,484	$2,382	$12,326	$2,705

Phase Dates

Activity Name	Start Date	End Date
212008 Study - Pre-Procurement	6/1/2020	6/30/2020
212008 Study - Procurement	6/1/2020	6/30/2020
212008 Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	1/9/2021	6/15/2026
212008 Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Phase: Construction (Build) # 1

Phase Title: WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 4/30/2023

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$64,301	$0	$0	$2,860	$16,885	$16,839	$16,147	$52,730	$11,571

Phase Dates

Activity Name	Start Date	End Date
212008 Construction - Procurement	10/31/2022	4/29/2023
Construction - Project Execution	4/30/2023	6/15/2026
212008 Construction - Closeout	4/1/2027	6/30/2027

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

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

CIP	5 Year Total	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2019	$13,707	$230	$1,141	$6,569	$5,767	$6,809	$0	$0	$20,516
2020	$14,022	$229	$500	$656	$6,727	$5,910	$6,811	$0	$20,833
2021	$76,182	$183	$4,612	$7,977	$7,619	$40,638	$15,336	$5,149	$81,514

Description of CIP Changes:

Changes made to planned projected expenditures by year. Total project cost estimate went up by $300K.

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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)**

Aeration Basin 4, and ILP's 3, 4, and 7

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/7/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen and chemical use resulting in a more sustainable treatment system, and implementation of step feed will improve high flow management through the secondary system increasing the volume of flow that can be treated through the secondary system thus minimizing the volume of flow discharged without secondary system. Hydraulic improvements

Scope of Work/Project Alternatives:

The work consists of evaluation, design and construction of the replacement of ILPs 3, 4 & 7, conversion of aeration decks 3 & 4 to incorporate biological phosphorus removal, including replacement of mixers in Bays 1 and 2, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. An assessment of reconfiguring decks 3 and 4 to four independent decks will also be assessed. Weir length will be increased to reduce the variation in the hydraulic grade line across the tank to maintain adequate submergence of mixer/aerators and reduce the frequency of mixer/aerators tripping out on surge. Replacement of Mixer/aerators in Decks 3 through 8 will be evaluated and could be included as an add-alternate to the contract or included as a separate contract.

Other Important Info:

Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Primary Driver: 3 - Regulatory

Driver Explanation:

System required to meet permit

will ease operations and minimize the operator attention on the numerous surface aerators.

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

Scoring

Project Manager Weighted Score: 67.80

Criteria Name	Score	Comment
Condition	4	Equipment continues to require extensive maintenance and is considered to be in poor condition.
Performance (Service Level/Reliability)	3	WRRF staff continue to improve on operational and maintenance procedures.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	3	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	3	Process equipment remain the same, Public Health risks remain the same
Public Benefit	3	Process equipment remain the same, Public Benefit risks remain the same
Financial	3	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 67.80

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

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/31/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$356	$0	$0	$52	$57	$110	$246

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	3/31/2031

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

Phase: Design & Construction Assistance # 1

Phase Title: WRRF Rehabilitation of Intermediate Lift Pumps (ILPs) 3,4 and 7

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/31/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$15,250	$0	$0	$1,181	$1,181	$14,069

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	2/3/2025	5/4/2025
Design - Procurement	5/5/2025	12/31/2025
Design - Project Execution	1/1/2026	3/31/2031
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

Phase: Construction (Build) # 1

Phase Title: WRRF Rehabilitation of Intermediate Lift Pumps (ILPs) 3,4 and 7

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 1/1/2028

End Date: 3/31/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	$57,983	$0	$0	$57,983

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	7/4/2027	12/31/2027
Construction - Project Execution	1/1/2028	3/31/2031
Construction - Closeout	12/31/2030	3/31/2031

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

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

CIP	5 Year Total	FY25	FY26	Total
2021	$14	$14	$73,749	$73,763

Description of CIP Changes:

Updated scoring

CIP Number: 212010

Project Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Secondary Treatment and Disinfection

☐ **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)**

Chlorination Building, Inside

Project Engineer/Manager: TBD

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/7/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

With the completion of the RRO Disinfection Project (CIP 212006), storage and feed of sodium hypochlorite to the primary effluent bypass with sodium bisulfite for dechlorination has been enabled. Elimination of the use of gaseous chlorine for disinfection of the secondary effluent and replacement with sodium hypochlorite will increase operator and public safety in and around the plant site.

Scope of Work/Project Alternatives:

The work consists of evaluation of sodium hypochlorite and sodium bisulfite usage over the first three years of operation of the new system to assess actual dosage required to achieve permit compliance and storage available with the existing system. The assessment will include preliminary design of modifications required to enable sodium hypochlorite feed to the secondary treatment effluent and an assessment of the storage requirements at varying sodium hypochlorite concentrations. The assessment will also include the appetite for a chemical manufacturer to own and operate a sodium hypochlorite generation facility in close proximity to the facility that would allow piping of sodium hypochlorite to the site (in lieu of providing additional storage, if required, on-site).

Other Important Info:

None

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

Inherently, the system is hazardous to operate and maintain.

CIP Number: 212010

Project Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Scoring

Project Manager Weighted Score: 65.00

Criteria Name	Score	Comment
Condition	2	
Performance (Service Level/Reliability)	2	
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	5	Process equipment remain the same, Public Health risks remain the same
Public Benefit	4	Process equipment remain the same, Public Benefit risks remain the same
Financial	2	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	2	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 65.00

Criteria Name	Score	Comment
Condition	2	Scored in 2019
Performance (Service Level/Reliability)	2	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	5	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	2	Scored in 2019
Efficiency and Innovation	2	Scored in 2019

CIP Number: 212010

Project Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/1/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$309	$0	$0	$52	$57	$110	$200

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	3/1/2031

CIP Number: 212010

Project Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Phase: Design & Construction Assistance # 1

Phase Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/1/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$947	$0	$0	$75	$75	$872

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	2/3/2025	5/4/2025
Design - Procurement	5/5/2025	12/31/2025
Design - Project Execution	1/1/2026	3/1/2031
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 212010

Project Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Phase: Construction (Build) # 1

Phase Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 1/1/2028

End Date: 3/1/2031

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	$4,509	$0	$0	$4,509

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	7/4/2027	12/31/2027
Construction - Project Execution	1/1/2028	3/1/2031
Construction - Closeout	12/1/2030	3/1/2031

CIP Number: 212010

Project Title: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite

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

CIP	5 Year Total	FY25	FY26	Total
2021	$14	$14	$5,972	$5,986

Description of CIP Changes:

Updates scoring

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Residuals Management

☐ **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)**

Sludge Feed pump in Complex A

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2016

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Improved sludge feed pumping system will provide wide range of operating conditions. Variable Frequency drive and Hydraulic drive units for SFP 1 and 2 are located below grade and the area has flooded. A single recycle valve for SFP 3 and 4 puts the plant at a higher risk for system outages.

Scope of Work/Project Alternatives:

The scope of work includes study, design, and construction for the replacement of sludge feed pumps SFP 1, 2, 3, 4, 5 and 6 and other modifications to the pumping system at the WRRF.

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Other Important Info:

Challenges: Maintaining Plant Operational Capacity during construction.

Project History: Water Resource Recovery Facility (WRRF) has six (6) Sludge Storage Tanks (SST-1, 2, 3, 4, 5 &6), which feed sludge to the dewatering facilities (i.e. belt filter presses complexes and complex II centrifuges.) Typically, sludge from Storage Tanks 1 & 2 supplies the centrifuges on dewatering complex II upper level; sludge from Storage Tanks 3 & 4 supplies the centrifuges on the lower level of Dewatering Complex II; and sludge from Storage Tanks 5 & 6 supplies the belt filter presses in Dewatering Complex I. However, control valves in the Dewatering Complex II basement allow sludge from any storage tanks to supply any Dewatering area.
Under Contract PC-792, Storage Tanks SST-3 & 4 along with Sludge Feed Pumps SFP-3 & 4 are to be dedicated to BDF Facility.

Primary Driver: 2 - Performance

Driver Explanation:

Location of pumps have proven to be problematic due to flooding.

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Scoring

Project Manager Weighted Score: 69.20

Criteria Name	Score	Comment
Condition	4	Equipment continues to exceed its design life. We have started to break this CIP up into parts, with the first part was to install a bypass line, next will be to right size the feed pumps, and finally working on the pumping system.(trips have been around 120 a year)
Performance (Service Level/Reliability)	3	The system continues to operate and provide service. With the completion of 211008 the system should be able to meet catch-up demands.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	5	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	2	Process equipment remain the same, Public Health risks remain the same
Public Benefit	2	Process equipment remain the same, Public Benefit risks remain the same
Financial	4	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 69.20

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

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/23/2024

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$211	$6	$6	$67	$57	$47	$33	$0	$0	$138	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	3/23/2024

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase: Study & Design & Construction Assistance # 1

Phase Title: Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 3/23/2024

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	5 Year Total
Study & Design & Construction Assistance # 1	$820	$0	$0	$41	$285	$285	$209	$779

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	5/9/2021	3/23/2024
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase: Construction (Build) # 1

Phase Title: Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 8/2/2022

End Date: 3/23/2024

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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 (Build) # 1	$3,459	$0	$0	$0	$1,920	$1,539	$3,459

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	2/2/2022	8/1/2022
Construction - Project Execution	8/2/2022	3/23/2024
Construction - Closeout	12/24/2023	3/23/2024

CIP Number: 213006

Project Title: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Total
2018	$1,152	$33	$402	$750	$0	$0	$0	$0	$0	$0	$1,185
2019	$3,853	$4	$0	$0	$57	$275	$2,391	$1,130	$0	$0	$3,857
2020	$1,390	$0	$5	$0	$0	$0	$0	$24	$1,366	$2,331	$3,726
2021	$4,646	$0	$0	$5	$0	$174	$385	$3,371	$716	$0	$4,651

Description of CIP Changes:

Schedule was delayed by 3 years to accommodate funding for CIP No. 232002.

CIP Number: 213007

Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Residuals Management

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2016

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

GLWA have an ongoing study and design of sludge cake conveyance system improvements project after the March 4, 2016 fire incident in Complex –II Incinerators building. The construction of this project will provide a cleaner, fire resistant, reliable and safe sludge feed to the incinerators.

Scope of Work/Project Alternatives:

The restoration of sludge conveying capacity, which was lost due to the fire damage and to provide improved sludge conveyance from each dewatering facility to the incinerators. Replacement of 19 MCCs and Replacement of the Unit Substation EB-26 in Incineration Complex II.

Other Important Info:

Challenges: Maintaining the sludge conveyance capacity to meet permit requirements during the construction of these improvements, will be the most significant challenge on this project.

Project History: The C-II Incineration complex is over 40 years old. Major rehabilitation had been deferred over the years in anticipation of an alternative Biosolids disposal solution to handle all the solids. The Complex-II have many major pieces of equipment that are nearing the end of their useful life and require replacement or major rehabilitation in order to be used as the primary long-term solids disposal method. GLWA approved a PC-774 and PC -791 contract to rehabilitate some of the aging problem of the incineration and to meet the new air permit requirements. GLWA just completed the construction of a Biosolids Dryer Facility (BDF) with a firm capacity of 316 dry tons per day. The BDF facility is currently in operation under an in-term agreement with NEFCO. The current GLWA plan for

Biosolids disposal is to utilize BDF to its capacity first, then send the additional load to Complex-II Incinerators and anything beyond that to the land fill. This Biosolids Disposal Plan requires investment in the Complex-II Incinerators to process the sludge loads on a regular basis for the daily and wet weather events to avoid the highest cost of land fill. The sludge from Dewatering Complex II travels through a series of conveyor belts (i.e., conveyors G, H and J) before it reaches Incineration Complex II. The sludge from Dewatering Complex II Lower Level was transported by Conveyor G to Conveyor H. In Incinerator Complex II, Conveyor H branches to Conveyors K and L then continue to various conveyors to feed incinerators. The sludge from Dewatering C-II Upper Level was transported by Conveyor J which branches to Conveyors M and N in Incineration C-II then continue to various Conveyors to feed incinerators. The conveyor belt structures in Incineration C-II are old, have been modified, rebuilt or repaired several times that might have altered the overall integrity of the structures. The existing “Dusseau” hopper oftentimes plugged resulting to sludge spillage. The existing feed system to the incinerator from the hoppers should be redesigned and replaced. New control systems, safeguards, provision of SFE water, run time meter or tie to ovation system and poor lighting system in the complex needs improvement.

Drainage problems had historically existed within the basement of Complex II Incineration and C-II Dewatering having to do with both building drainage, and filtrate drainage. These problems led to excessive demands on operations and maintenance staff, shutdown of process-related equipment, and safety concerns for WWTP personnel.

Improvements to the C-II Incinerators building drainage system were completed in 2003 under contract DWP-1028. However, the drainage problems were not completely eliminated and still continue to exist and further Improvements to the C-II Dewatering are in design for improvements. In order to have an effective sludge conveyer’s wash

system, a key requirement for safe operation of sludge conveyance system, the drainage improvements in the Complex-II Dewatering and Incinerators building are essential.

Primary Driver: 3 - Regulatory

Driver Explanation:

The existing sludge conveyance system is very old and is critical to disposal of biosolids to meet permit requirements (e.g. incinerator air permit requirements). The disposal of biosolids to meet allowable permitted inventory of biosolids at the WRRF, s

CIP Number: 213007

Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 213007

Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 8/22/2016

End Date: 1/31/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 7/31/2019

Cost Est. Source:

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$539	$391	$391	$93	$55	$0	$0	$0	$0	$55	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/22/2016	1/31/2022

CIP Number: 213007

Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study/Design of upgraded sludge conveyance system and lighting improvement

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 8/22/2016

End Date: 1/31/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

CS-060 is funded from this CIP. Could not add it to the choice list. Move this phase to 213007

Cost Est. Class: Class 5

Cost Est. Date: 7/31/2019

Cost Est. Source: Contract

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$2,086	$797	$797	$811	$478	$0	$0	$0	$0	$478	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	8/22/2016	1/31/2022
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 213007

Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase: Construction (Build) # 1

Phase Title: CON-197 Modification to Incinerator Sludge Feed Systems at Complex -II

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 4/2/2018

End Date: 1/31/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date: 7/31/2019

Cost Est. Source: Contract

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$19,537	$14,231	$14,231	$3,339	$1,967	$0	$0	$0	$0	$1,967	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	4/2/2018	1/31/2022
Construction - Closeout	11/2/2021	1/31/2022

CIP Number: 213007

Project Title: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	Total
2018	$17,422	$1,500	$9,600	$7,822	$0	$0	$18,922
2019	$21,620	$0	$567	$6,787	$11,356	$3,477	$22,187
2020	$12,019	$0	$871	$7,159	$8,711	$3,308	$20,049
2021	$2,258	$0	$0	$9,352	$8,336	$2,258	$19,946

Description of CIP Changes:

Rehabilitation of incinerators 7-10 are almost complete and expected to perform the start up services likely in October 2020.

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Residuals Management

☐ **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)**

Incineration Complex II, Ash System

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The ash systems convey and store ash for ultimate disposal. The incinerators cannot be used if both the systems are not working.

Scope of Work/Project Alternatives:

The scope of work will include study, design, and construction for the rehabilitation of the wet and dry ash systems. The scope will also include the piping, valves, isolation gates, vacuum pumps, air filters, HVAC, boilers, miscellaneous silo repairs (concrete, access, etc.) site work and drainage, and miscellaneous structural repairs (foot bridge, spalling concrete, etc.) at the dry ash handling system. It will also include the pumps, piping, and sluicing system at the wet ash system.

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Other Important Info:

*Innovation note: Due to only 10-15 years remaining useful life on Complex I, reconsider recommissioning wet ash. Recom.

Project History: The C-I and C-II Incinerators have been the primary source for processing Biosolids at the GLWA WRF since the plant was first built. The original ash handling system was a wet ash/sluicing process. The dry ash system was constructed in the 1960s and expanded with the construction of the C-II Incinerators in the 1970s. The wet ash system has not been in use for over five years and there is no backup if the dry ash system goes down. The C-I Incinerators are planned to be decommissioned in the next year or two and there is a potential to link the C-I ash handling system to the C-II system to provide extra storage.

Primary Driver: 1 - Condition

Driver Explanation:

The wet ash system has been out of service for over five years and the dry ash system is nearing the end of its useful life.

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Scoring

Project Manager Weighted Score: 57.80

Criteria Name	Score	Comment
Condition	4	Still waiting for final study report. Appears that this system may be maintained through O&M and not CIP
Performance (Service Level/Reliability)	3	WRRF Staff have been maintaining the equipment and it has been performing its function. Leaks in the system reduce process bandwidth.
Regulatory (Environmental/Legal)	3	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	3	Process equipment remain the same, Public Health risks remain the same
Public Benefit	1	Process equipment remain the same, Public Benefit risks remain the same
Financial	3	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	1	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 57.80

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	3	Scored in 2019
Regulatory (Environmental/Legal)	3	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	1	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	1	Scored in 2019

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 4/18/2019

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date: 10/1/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$272	$17	$17	$40	$40	$40	$33	$33	$33	$181	$33

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/18/2019	6/30/2026

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Phase: Study # 1

Phase Title: Rehabilitation of the Ash Handling Systems

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 10/16/2019

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date: 9/12/2018

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study # 1	$1,960	$94	$94	$311	$255	$255	$256	$255	$255	$1,275	$280

Phase Dates

Activity Name	Start Date	End Date
Study - Procurement	4/18/2019	10/15/2019
Design/Engineering	10/16/2019	6/30/2026

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of the Ash Handling Systems

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2023

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$6,200	$0	$0	$0	$0	$164	$1,230	$3,690	$5,084	$1,116

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2023	6/30/2023
Construction	7/1/2023	6/30/2026
Construction - Closeout	4/1/2026	6/30/2026

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	$18,316	$530	$1,045	$6,225	$5,725	$4,791	$0	$0	$18,316
2019	$11,286	$0	$0	$687	$916	$3,614	$6,069	$9,330	$20,616
2020	$18,505	$0	$0	$111	$1,111	$5,525	$9,574	$2,184	$18,505
2021	$18,377	$0	$0	$166	$1,338	$636	$11,061	$5,342	$18,543

Description of CIP Changes:

Study phase was added on its own to evaluate options prior to design. The schedule was delayed by 1 FY.

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

Class Lvl 3: Industrial Waste Control

☐ **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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 10/12/2016

Year Project Added to CIP: 2014

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: System Wide

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Laboratory Optimization, Continued operation of IWC and Lab, lease termination for analytical laboratory, and utilization of available space in WRRF NAB

Scope of Work/Project Alternatives:

Relocate Industrial Waste Control Division and Analytical Lab to New Administration Building at WRRF. Consolidate the existing Operations Lab with Analytical Lab.

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Other Important Info:

Challenges: Maintaining the laboratory operations during relocation.

Project History: In accordance with the NPDES Permit, GLWA implements and enforces an Industrial Pretreatment Program (IPP), and regulates the discharge of wastewater from commercial and industrial sources throughout the service area. A key component of the IPP includes the performance of analytical testing on wastewater samples collected from industrial and commercial sources, in-system samples from the sewer system and other sources including groundwater and septage.
The Industrial Waste Control Division (IWC) is responsible for implementation of the IPP, and analytical services are obtained from the Analytical Laboratory located at the MCHT facility. IWC activities are housed at the Livernois Center Building (LCB) located at 303 S. Livernois, while the Analytical Laboratory leases space at the MCHT on Second Avenue.
The State of Michigan Department of Transportation and the Govt. of Canada have proposed to construct a new bridge crossing across the Detroit River, with a completion date of 2020. The Livernois Center Building lies within the area designated for the Bridge and support services and need to be relocated. It would be desirable to relocate the laboratory facilities at the same time to optimize the operations and make use of underutilized GLWA facilities rather than lease space from a 3rd party.

Primary Driver: 3 - Regulatory

Driver Explanation:

Length and reorganization is yet established.

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 10/12/2016

End Date: 6/30/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
GLWA Salaries	$202	$133	$133	$69

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/12/2016	6/30/2021

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Phase: Design & Construction Assistance # 1

Phase Title: General Engineering Services for design of CON-280 and Analytical Lab (Sigma)

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 10/12/2016
End Date: 3/8/2021
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1
Cost Est. Date: 9/12/2018
Cost Est. Source: Contract
Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$950	$950	$950	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	10/12/2016	3/8/2021

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Phase: Construction (Build) # 2

Phase Title: Relocation of Analytical Lab

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/25/2018

End Date: 6/30/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 9/12/2018

Cost Est. Source: Eng Est.

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction (Build) # 2	$11,499	$9,501	$9,501	$1,998

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	6/25/2018	6/30/2021
Construction - Closeout	4/1/2021	6/30/2021

CIP Number: 214001

Project Title: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	Total
2018	$7,000	$0	$5,000	$2,000	$0	$0	$7,000
2019	$12,765	$182	$0	$4,001	$7,764	$1,000	$12,947
2020	$7,567	$0	$573	$2,828	$7,567	$0	$10,968
2021	$1,331	$0	$0	$2,301	$10,369	$1,331	$14,001

Description of CIP Changes:

Reallocated engineering services from CIP No. 380901 (contact was moved from as-needed to appropriate CIP). Separated IWC and Lab construction phases due to GHIB project schedule. IWC was relocated to WRRF. Relocation of analytical lab construction is progressing and is expected to be completed by end of 2020.

CIP Number: 216004

Project Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 8/1/2016

Year Project Added to CIP: 2010

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Rehabilitation of the sampling facilities will improve system reliability and allow for consistent and accurate sampling. This will help to submit an accurate report to MDEQ. The rehabilitation of Ferric Chloride system will improve the phosphorous removal to comply with the Permit.

Scope of Work/Project Alternatives:

The scope of work includes:
Replacement of existing sampling equipment, installing new samplers, pumps, piping, housing and support equipment such as I&C, HVAC, etc. at the various sampling sites.
The scope also include:
Replacement of existing two steel Ferric Chloride tanks at PS#2 with four (4) smaller tanks.
Provide new piping layout, gravity feed, and self-cleaning strainer.
Rehabilitate Ferric Chloride Unloading station, associated Valves and Appurtenances.
Provide Flow meters and new control strategies to meet future demands of Ferric Chloride at Pump Station # 2.
The CIP is for construction only.

Other Important Info:

*Innovation note: Rehab may include alternative online/real-time sampling & analysis, as well as improved mixing of the ferric with primary influent.
The original CIP Project Proposal CIP-1223, “Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WWTP” included two major scope items; Rehabilitation of Grit & Bar Screening System and Sampling Stations. That construction budget for CIP-1223 amount $11 M was set aside in CIP. The design for Grit & Screening System and Sampling Station were complete under As Needed Engineering Services Contract, CS-1481 Task 18. The construction for “Rehabilitation of Sampling Sites” will move forward and be bid out separately for construction without Grit & Bar Screening System. The Bar Rack System and Grit System designed under As Needed Engineering Services Contact CS-1481, Task 18 will not proceed for construction as designed. An engineering decision to have a fresh look and start a new study, design and construction project through

CIP-1314 will proceed. The proposed CIP budget is for construction cost only. The original budget for CIP-1223 was $11M and has been reduced to $5M. The remaining $6M budget has been transferred to CIP-1314 to complete study, design and construction of Grit and Screening System at PS#2.

Challenges: Maintaining the MDEQ-NPDES required capacity during the construction phase of the project.

Project History: The Sampling sites are located at Oakwood, MPI-2, NEIA, PEAS1, 3 & 4, ML1 thru 4, and RAS1 thru 4, C2SE 3& 4. Sampling is performed to monitor permit compliance and process performance. Samples are also collected and analyzed on composite samples. The above sampling stations are required to be rehabilitated or replaced for meeting the permit sampling requirements. These sampling stations regularly fails to collect samples due to the clogging problem in the sample line. Replacement of existing sampling equipment, installing new samplers, pumps, HVAC, etc. were also proposed through Need Assessment 2010 – 2016 for these sampling stations.
The WRRF sampling station rehabilitation design is completed under an As Needed Engineering Services. The WRRF PS# 2 Ferric Chloride rehabilitation design is completed under another As Needed Engineering Services Contact. These two projects are combined together for construction under the revised CIP #1223 in the 2018 CIP.

Primary Driver: 2 - Performance

Driver Explanation:

Plant operations report on the failure of shear pins and accelerated wearing and tearing of the bar racks causing downtime for the maintenance and violation of the permit.

CIP Number: 216004

Project Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 216004

Project Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 5/27/2017

End Date: 12/27/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$162	$105	$105	$29	$29	$0	$0	$0	$0	$29	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/27/2017	12/27/2021

CIP Number: 216004

Project Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Phase: Construction Assistance # 1

Phase Title: Engineering Services for the Rehab of Various Sampling Stations

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 5/27/2017
End Date: 12/27/2021
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1
Cost Est. Date: 9/12/2018
Cost Est. Source: Contract
Cost Est. Prepared By: Eng

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction Assistance # 1	$921	$778	$778	$96	$47	$0	$0	$0	$0	$47	$0

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	5/27/2017	12/27/2021

CIP Number: 216004

Project Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 2/18/2019

End Date: 2/7/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 10/2/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$5,562	$755	$755	$4,807	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction	2/18/2019	2/7/2021
Construction - Closeout	11/9/2020	2/7/2021

CIP Number: 216004

Project Title: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	Total
2018	$5,000	$0	$2,500	$2,500	$0	$0	$0	$5,000
2019	$5,073	$312	$40	$551	$3,957	$565	$0	$5,425
2020	$4,528	$0	$439	$609	$3,921	$607	$0	$5,576
2021	$1,421	$0	$0	$815	$3,493	$1,300	$121	$5,729

Description of CIP Changes:

Reallocated as-needed contracts from CIP No. 380901 (Sigma-Sampling Sta.) and CIP No. 380501 (Metco-Ferric). Pump station No.2 ferric chloride system re-design is completed and the contractor started the work at site. Re-design of various sampling sites will be completed in few months.

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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)**

Secondary Area

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Yard piping and underground utilities are vital to the operations of the WRRF. The integrity of these systems will be maintained with this project. The Secondary Water system needs to be relocated or completely refurbished to provide uninterrupted water for fire protection and process applications such as seal water to the pumps. Some of the yard piping is original to the plant and requires a condition assessment.

Scope of Work/Project Alternatives:

This project will include the study, design, and construction for the needed improvements to yard piping and underground utilities. This includes right sizing, as-built confirmation and condition assessment of our yard piping and underground utilities. It is possible that the secondary water system may need to be relocated. The distribution models for the water systems will also be updated. A redundant potable water feed to the WRRF will also be evaluated.

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

Other Important Info:

Reliable utility is a critical aspect of O&M for the facility and to avoid outages.

Project History: Some of the pipe lines at the WRRF have been inexistence since the plant was built and have been found on record dating back to 1938. As the plant has grown, so have the systems. In general, the majority of the changes to the multiple systems occurred when the specific buildings or components to the plant were built or renovated. Therefore, an evaluation and necessary replacement of these pipelines are needed to make sure the integrity of these pipelines.

Challenges: Maintaining the adequate supply of our water systems required for treatment processes during assessment and rehabilitation of underground utilities will be the most significant challenge on this project. Temporary power, air, water, natural gas system shutdowns may also be required to perform the work.

Primary Driver: 1 - Condition

Driver Explanation:

Some of the underground utilities are original to the plant and are critical to the plant treatment processes (e.g. incinerator air permit requirements).

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

Scoring

Project Manager Weighted Score: 76.40

Criteria Name	Score	Comment
Condition	5	Condition continues to deteriorate.
Performance (Service Level/Reliability)	4	Performance remains at a poor level. Piping corrosion is continuing and is requiring continual repair.
Regulatory (Environmental/Legal)	4	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	3	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	4	Process equipment remain the same, Public Health risks remain the same
Public Benefit	4	Process equipment remain the same, Public Benefit risks remain the same
Financial	3	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	3	Process and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 76.40

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

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 11/13/2019

End Date: 7/8/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 10/1/2017

Cost Est. Source:

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$467	$44	$44	$218	$57	$55	$46	$46	$1	$205	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/13/2019	7/8/2025
Capital Delivery Salary	11/13/2019	7/8/2025

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

Phase: Design & Construction Management # 1

Phase Title: Assessment and Rehabilitation of WRFF yard piping and underground utilities

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 11/13/2019

End Date: 7/8/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date: 9/12/2018

Cost Est. Source: Eng

Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Management # 1	$2,408	$29	$29	$362	$501	$501	$502	$501	$11	$2,016	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	11/13/2019	2/11/2020
Design - Procurement	2/12/2020	10/9/2020
Design - Project Execution	10/10/2020	7/8/2025

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

Phase: Construction (Build) # 1

Phase Title: Assessment and Rehabilitation of WRFF yard piping and underground utilities

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 4/1/2023

End Date: 7/8/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
Construction (Build) # 1	$21,000	$0	$0	$0	$0	$2,302	$9,260	$9,235	$202	$21,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	10/2/2022	3/31/2023
Construction - Project Execution	4/1/2023	7/8/2025
Construction - Closeout	4/9/2025	7/8/2025

CIP Number: 216006

Project Title: Assessment and Rehabilitation of WRRF yard piping and underground utilities

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$47,579	$1,700	$2,000	$12,000	$15,600	$16,279	$4,141	$0	$0	$0	$51,720
2019	$30,430	$0	$0	$1,718	$4,008	$7,174	$17,530	$24,026	$0	$0	$54,456
2020	$17,430	$0	$0	$323	$5,258	$3,849	$4,500	$3,500	$7,423	$0	$24,853
2021	$23,966	$0	$3	$270	$4,291	$4,754	$4,754	$4,767	$5,400	$273	$24,512

Description of CIP Changes:

This project was separated from of SFE PS rehabilitation and the schedule was advanced by 1 FY.

CIP Number: 216007

Project Title: DTE Primary Electric 3rd Feed Supply to WRRF

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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: Phillip Kora

Director: Philip Kora

Managing Dept.: WW Construction Eng

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The scope of this project includes design and construction of 3rd 120 KV primary electric supply transmission line (design, build and maintain by DTE) tapping into the 120 kv waterman-Zug line in the vicinity of Dearborn St. and Copland St right of way at Tower 1368 per the agreement between DTE and GLWA dated May 2, 2019. GLWA is responsible to secure the property right-of-way from the property owners as well as environmental remediation and cleanup including hauling and disposal of any soil.

Scope of Work/Project Alternatives:

GLWA also is responsible to provide the connection from the service point (last steel pole installed by DTE) to GLWA's equipment on GLWA's property. This primary transmission power line will energize the already installed new 120-13.8 industrial substation owned by GLWA near EB-1.

Other Important Info:

Challenges: Negotiation with private property owners and testing of the automatic switch over will require co-ordination with operations.
Keep everything in this section except the last sentence 'In order to speed design and construction GLWA is proposing a design-build project'. Delete that last sentence and replace with 'GLWA and DTE has renegotiated the agreement and executed the new agreement on May 2, 2019'.

Primary Driver: 3 - Regulatory

Driver Explanation:

GLWA's WWTP requires a reliable and redundant primary electrical power supply in order to be in compliance with its NPDES permit requirements. The disconnection and removal of backup power supply line and substation from PLD leaves GLWA very vulnerable in

CIP Number: 216007

Project Title: DTE Primary Electric 3rd Feed Supply to WRRF

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 216007

Project Title: DTE Primary Electric 3rd Feed Supply to WRRF

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/3/2019

End Date: 6/30/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 7/31/2019

Cost Est. Source:

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
GLWA Salaries	$77	$31	$31	$31	$15	$15

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/3/2019	6/30/2022
Capital Delivery Salary	6/3/2019	6/30/2022

CIP Number: 216007

Project Title: DTE Primary Electric 3rd Feed Supply to WRRF

Phase: Design & Construction Assistance # 1

Phase Title: DTE Primary Electric 3rd Feed Supply to WRRF

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4

Cost Est. Date: 7/31/2019

Cost Est. Source: Estimate

Cost Est. Prepared By: Engineering

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Design & Construction Assistance # 1	$40	$40	$40	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 216007

Project Title: DTE Primary Electric 3rd Feed Supply to WRRF

Phase: Construction (Build) # 1

Phase Title: DTE Primary Electric 3rd Feed Supply to WRRF

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 12/1/2019

End Date: 6/30/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 7/31/2019

Cost Est. Source:

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Construction (Build) # 1	$4,427	$2,827	$2,827	$1,222	$378	$378

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	6/3/2019	11/30/2019
Construction - Project Execution	12/1/2019	6/30/2022
Construction - Closeout	4/1/2022	6/30/2022

CIP Number: 216007

Project Title: DTE Primary Electric 3rd Feed Supply to WRRF

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	Total
2018	$7,000	$0	$3,500	$3,500	$0	$0	$0	$7,000
2019	$6,654	$15	$0	$2,002	$1,326	$3,326	$0	$6,669
2020	$4,755	$0	$584	$2,108	$1,381	$3,374	$0	$7,447
2021	$2,023	$0	$0	$738	$3,062	$1,296	$727	$5,823

Description of CIP Changes:

DTE is expected to start the construction activities in the month of October 2020.

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Project Status: Active - Procurement - Negotiation Phase - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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)**

SFE Building, Basement

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 6/21/2017

Year Project Added to CIP: 2018

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The SFE Pump Station provides SFE water to many of the GLWA WRRF treatment processes and needs to be completely rehabilitated to maintain uninterrupted supply of SFE water to these processes.

Scope of Work/Project Alternatives:

This project will include the study, design, and construction for the needed improvements to the SFE pump station. This includes required capacity, pumps, strainers, piping, controls, building improvements, and electrical supply. This will also include a study to evaluate the potential for replacing the secondary water utilization with SFE utilization where feasible and an alternative analysis to the existing carrier water at chlorination/dechlorination facility, seal water, recovery needs which may include additional SFE treatment such as chemical addition to accommodate process needs.

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Other Important Info:

*Innovation note: optimize of a valuable resource recovered for facility needs. Project History: The SFE pump station has eight pumps with a total capacity of approximately 135 MGD. Pumps 1,2,4, and 6 were installed in 1973, pumps 3 and 5 in 1980, and pumps 7 and 8 in 1998. The older pumps were rebuilt in 1998. Strainers have been reconditioned as necessary over time. Due to the critical nature of the SFE pump station and the elapsed time since a major rehabilitation (over 15 years), a significant upgrade/rehabilitation is required. In addition, the two 5 kV transformers that supply power from EB-3 are approximately 40 years old and are in need of replacement.

Challenges: Maintaining the adequate supply of SFE to the plant treatment processes during construction of the SFE improvements.

Primary Driver: 1 - Condition

Driver Explanation:

The SFE pump station is very old and is critical to other treatment processes meeting permit requirements (e.g. incinerator air permit requirements). The Secondary Water System is very corroded and needs to be rehabilitated or relocated.

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Scoring

Project Manager Weighted Score: 61.80

Criteria Name	Score	Comment
Condition	5	Equipment continues to exceed its design life.
Performance (Service Level/Reliability)	4	Equipment exceeds what is required to run the facility (over-sized), Redundancy provides performance reliability. Strainers plug and are hard to maintain.
Regulatory (Environmental/Legal)	2	Both upstream and downstream process trains remain the same, Regulatory risks remains the same
Operations and Maintenance	4	Process equipment remain the same, O&M risks remain the same
Public Health and Safety	1	Process equipment remain the same, Public Health risks remain the same
Public Benefit	2	Process equipment remain the same, Public Benefit risks remain the same
Financial	4	Process equipment remain the same, Financial risks remain the same
Efficiency and Innovation	4	Projects goals and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 55.80

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

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 3

Cost Est. Date: 10/1/2018

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$327	$6	$6	$57	$57	$41	$41	$41	$41	$222	$41

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2027

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Phase: Study # 1

Phase Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 6/1/2020
End Date: 6/30/2027
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4
Cost Est. Date: 9/12/2018
Cost Est. Source: Eng
Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study # 1	$2,540	$0	$0	$443	$349	$349	$349	$349	$349	$1,747	$349

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	8/17/2020	6/30/2027
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 6/16/2022
End Date: 6/30/2027
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5
Cost Est. Date: 9/12/2018
Cost Est. Source: Eng
Cost Est. Prepared By: Ali Khraizat

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$37,954	$0	$0	$500	$6,114	$6,114	$6,114	$6,114	$24,954	$13,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	12/17/2021	6/15/2022
Construction - Project Execution	6/16/2022	6/30/2027
Construction - Closeout	4/1/2027	6/30/2027

CIP Number: 216008

Project Title: Rehabilitation of Screened Final Effluent (SFE) Pump Station

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	Total
2020	$24,897	$51	$1,091	$991	$9,475	$7,805	$5,535	$24,948
2021	$24,364	$0	$590	$1,362	$1,507	$15,571	$5,924	$24,954

Description of CIP Changes:

This project is separated from 2019 CIP 216006 and will label as a new project

CIP Number: 216009

Project Title: LM Facilities Assessment and Rehabilitation/Replacement

Project Status: Closed

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/6/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The warehouse buildings that stores equipment and supplies for GLWA are located at different facilities. The physical condition of the existing buildings, specifically the McKinstry warehouse (SSS), seems to be in poor condition with extensive roof leaking and other issues. There is an assessment of the L&M Facilities going on to determine whether it makes economic sense to continue to operate these facilities at the existing sites or if these facilities can be downsized into one central site.

Scope of Work/Project Alternatives:

Evaluate the existing conditions of the warehouse facilities throughout GLWA. Provide recommendations to improve the facility environment to store the assets safely and efficiently. The various building systems, including heating, ventilation, electrical, and lighting shall be evaluated to be in compliance with applicable building codes and regulations. Design and Construction of the suggested modifications, based on the evaluation, shall follow.

Other Important Info:

None

Primary Driver: 1 - Condition

Driver Explanation:

Poor building condition

CIP Number: 216009

Project Title: LM Facilities Assessment and Rehabilitation/Replacement

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 216009

Project Title: LM Facilities Assessment and Rehabilitation/Replacement

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 11/7/2018

End Date: 3/31/2023

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
GLWA Salaries	$162	$162	$162	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/7/2018	3/31/2023
Capital Delivery Salary	11/7/2018	3/31/2023

CIP Number: 216009

Project Title: LM Facilities Assessment and Rehabilitation/Replacement

Phase: Study & Design & Construction Assistance # 1

Phase Title: BLANK

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 11/7/2018

End Date: 3/31/2023

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Study & Design & Construction Assistance # 1	$3	$3	$3	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	11/7/2018	2/5/2019
Study - Procurement	2/6/2019	8/5/2019
Study - Project Execution	8/6/2019	3/31/2023
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 216009

Project Title: LM Facilities Assessment and Rehabilitation/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	Total
2021	$2,541	$227	$253	$1,318	$970	$2,768

Description of CIP Changes:

None

CIP Number: 216010

Project Title: WRRF Facility Optimization

Project Status: Active - Pre-Procurement - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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: Beena Chackunkal

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/7/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The existing WRRF is a product of countless construction projects over nearly 90 years and consists of numerous process and non-process buildings with varying levels of use and practicality. As WRRF across the nation come out of the shadows and into the light of the public and elected officials it is critical to convey an image that reflects the pride and importance of the work that is done every day at this facility. As such, this project will work on the softer side of the facility, create a visitor center focusing on public education to entice the next generation of wastewater engineers, scientists and operators, and to beautify the image of the facility creating a more welcoming environment for the public and staff alike.

Scope of Work/Project Alternatives:

The work consists of extending the evaluation performed as a part of Master Planning to design and construct site modifications including but not limited to a new visitor center, demolition or repurposing of existing structures that are no longer used, consolidation and or reconfiguration of administration, operations and maintenence staff and spaces, vehicle and equipment storage spaces, shops, etc. The project also includes site modifications to include improved site circulation, parking and fencing, green infrastructure, improved landscaping, wallking paths around the site and site features, including but not limited to educational signage and benches.

Other Important Info:

None

Primary Driver: 2 - Performance

Driver Explanation:

Improving plant operations by re-organizing work flow paths and space utilization.

CIP Number: 216010

Project Title: WRRF Facility Optimization

Scoring

Project Manager Weighted Score: 63.60

Criteria Name	Score	Comment
Condition	4	Some of the facilities/buildings on the site have aged beyond there expected life, and require additional O&M costs to maintain the systems. While others are not being used effectively.
Performance (Service Level/Reliability)	3	WRRF staff continues to work on site optimization, and improve staff work flows. Plant still requires major overhaul in some areas to improve work flow.
Regulatory (Environmental/Legal)	1	Site remains the same, Regulatory risks remains the same
Operations and Maintenance	3	Site remains the same, O&M risks remain the same
Public Health and Safety	4	Site remains the same, Public Health risks remain the same
Public Benefit	5	Site remains the same, Public Benefit risks remain the same
Financial	3	Site remains the same, Financial risks remain the same
Efficiency and Innovation	4	Process and scope have not changed significantly, Efficiency and Innovation remain the same

Risk Committee Weighted Score: 63.60

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

CIP Number: 216010

Project Title: WRRF Facility Optimization

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$271	$4	$4	$25	$57	$46	$46	$46	$46	$241

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2026
Capital Delivery Salary	6/1/2020	6/30/2026

CIP Number: 216010

Project Title: WRRF Facility Optimization

Phase: Design & Construction Assistance # 1

Phase Title: WRRF Visitor Center and Site Beautification

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 8/31/2024

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
Design & Construction Assistance # 1	$1,000	$0	$0	$0	$181	$547	$93	$180	$1,000

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2020	6/30/2020
Design - Procurement	6/1/2020	6/30/2020
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	3/2/2023	8/31/2024

CIP Number: 216010

Project Title: WRRF Facility Optimization

Phase: Construction (Build) # 1

Phase Title: WRRF Visitor Center and Site Beautification

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 3/2/2023

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total
Construction (Build) # 1	$9,000	$0	$0	$1,627	$4,920	$833	$1,620	$9,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	9/2/2022	3/1/2023
Construction - Project Execution	3/2/2023	8/31/2024
Construction - Closeout	4/1/2026	6/30/2026

CIP Number: 216010

Project Title: WRRF Facility Optimization

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	$10,338	$14	$657	$987	$7,999	$681	$10,338

Description of CIP Changes:

Updated Scoring

CIP Number: 216011

Project Title: WRRF Structural Improvements

Project Status: Active - Pre-Procurement - Design

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: WRRF

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)**

Incineration Building

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Managing Dept.: WW Design Eng

Date Original Business Case Prepared: 8/24/2020

Year Project Added to CIP: 2020

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: WRRF

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The WRRF facilities are some of the oldest facilities within the GLWA infrastructure and are outside the initial design lives. In order to assure the safety of GLWA personnel working at the WRRF and to increase operational reliability, GLWA is initiating a long-term structural maintenance program. The program will start with a full structural needs assessment, inclusive of a four-year program of implementing the highest priority repairs in successive order.

Scope of Work/Project Alternatives:

The program will include a complete field assessment and structural condition report, classification of recommended repairs into levels of urgency, estimating quantities and the costs of repairs, developing a three-year repair program to address high priority repairs, design and implementation of repairs, preparation of as-built's and final project report, in connection with the Work. The Work includes improvements to be designed, administered, and constructed by the D/B Contractor, inclusive of civil/site, architectural, and structural, engineering disciplines and construction trades, as may be applicable to complete the work.

Other Important Info:

None

Primary Driver: 1 - Condition

Driver Explanation:

Many older structures around the site are at there end of life and are requiring additional cost to maintain them.

CIP Number: 216011

Project Title: WRRF Structural Improvements

Scoring

Project Manager Weighted Score: 55.60

Criteria Name	Score	Comment
Condition	4	Some structures are beyond the intended life and are experiencing water infiltration, spalling, cracking, crumbling, and sagging.
Performance (Service Level/Reliability)	4	Condition of leaking water has resulted in equipment damage, pipe corrosion, and building/tank deterioration.
Regulatory (Environmental/Legal)	3	Structural components can lead to moderate environmental issues
Operations and Maintenance	4	Structural deterioration has increased maintenance cost around the plant.
Public Health and Safety	1	Minimal Impact
Public Benefit	2	Low impact to public
Financial	3	Non-corrected structural issues can lead to increase future repair cost and repair time
Efficiency and Innovation	1	Minimal innovation

Risk Committee Weighted Score: 0.00

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

CIP Number: 216011

Project Title: WRRF Structural Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 9/2/2020

End Date: 6/30/2027

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$333	$0	$0	$52	$52	$46	$46	$46	$46	$235	$46

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/2/2020	6/30/2027

CIP Number: 216011

Project Title: WRRF Structural Improvements

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 7/1/2021

End Date: 6/30/2027

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding	$12,000	$0	$0	$2,000	$2,000	$2,000	$2,000	$2,000	$10,000	$2,000

Phase Dates

Activity Name	Start Date	End Date
Design-Build/Other - Project Execution	7/1/2021	6/30/2027

CIP Number: 216011

Project Title: WRRF Structural Improvements

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

CIP

Description of CIP Changes:

New Project

CIP Number: 222001

Project Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Project Status: Active - Procurement - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Field Services

Class Lvl 3: Interceptor

☐ **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 Plan for NWI Diversion to Oakwood Facilities

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2014

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Oakwood District

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Improvements to the Oakwood District Sanitary Sewer system and implementation of various projects as recommended in report by Applied Sciences, Inc. Dated 2/26/16. Projects to include: 1) Clean & Inspect Trunk Sewers, 2) Analysis and improvement of Oakwood PS/RTB operations, 3) Second influent sewer to Oakwood PS, and 4) NWI Diversion for CSO Control. Projects to be prioritized and validated as part of Wastewater Master Plan Project (GLWA CS-036).

Scope of Work/Project Alternatives:

The work includes basis of design (study) report on alternative solution to proposed Oakwood District Intercommunity Relief Sewer, diversion of storm water flow, and construction assistance during construction phase of emerging projects. Coordinate with DWSD projects including catch basin restrictions and green spaces.

Other Important Info:

Refer to linked aerial photo of Oakwood District with overlay of proposed new sewers, as built drawings of recent construction in the District for PCS-79, PCS-80 and PC-755; map of Intercommunity Collection System including portion of Oakwood District shown above—and other select resources linked below.

Challenges: Maintaining the wet weather contract capacities and adequate CSO treatment during extreme storm events and mitigate basement and street flooding in the District and intercommunity regional districts are the most significant challenges for the project to address. Other Important Info: The Oakwood District is located in the southwest portion of the City of Detroit covering an area of 1,520 acres. In general, it's bound within by a continuous stretch of the northerly and westerly bank of the Rouge River, thence stretches of the city limits of River Rouge and Ecorse to the south, thence a stretch of the city limits of Lincoln Park to the far

lower west (abutting a stretch of Outer Drive near the adjacent watercourse of Ecorse Creek further west), thence a stretch of the city limits of Melvindale to the north near I-75 (between Outer Drive and Schaefer Hwy), thence a continued stretch of city limits of Melvindale to the upper west abutting Schaefer Hwy (between I-75 and the point of beginning along southerly embankment of the Rouge River adjacent Mellon Ave.

Much of the District was originally platted as Oakwood Village, later annexed to the City of Detroit. Some areas of the District are situated in relatively low-lying, flood prone topographies. Much of the combined sewer drainage system was originally designed and built since the 1930's with laterals and larger trunk and intercepting sewers tributary to the former (and present replacement) Oakwood Pumping Station situated near the intersection of Sanders and Liddesdale Street. In early years, combined sanitary and intercepted storm runoff flow drained to that pump station was coarsely screened, pumped (lifted) and, in turn, conveyed though two discharge conduits tributary to a segment of O'Brien Drain--a natural and man-made (modified) stream confluent to the Rouge River--without further treatment.

Whereas much of the remaining area of the District, predominantly that north of Fort Street and east of Schaefer highway (a/k/a Oakwood Heights), is situated on relatively higher terrain. Originally, good portions of this area4 connected to public sewers drained to other streams or outfalls tributary to the Rouge and otherwise drained to the original municipal wastewater treatment plant in Detroit via other lateral, trunk and intercepting sewers tributary to an original 24" siphon connection constructed beneath the Rouge River just south of the Fort Street bridge to the city's 12'-9" Oakwood Interceptor also constructed in the 1930's extending from the WWTP, largely paralleling the Rouge River to a point ending just north of Fort Street beneath Miller Road.

In the 1940's, a 3'-0" sewer was constructed from

the original pump station's discharge channel which proceeded northerly beneath Sanders St and thence easterly beneath Fort St to a drop shaft hydraulic structure at below intersection at Bayside St in turn connected with a 24" siphoned sewer running easterly beneath the Rouge River and connecting with a downstream hydraulic connection to the City's 12'-9" Oakwood Interceptor (later renamed Oakwood Northwest Interceptor, or ONWI) tributary to the WWTP (originally built in the 30's and placed into operation in early 40's) to primarily convey pumped sanitary (dry weather) flow from the southerly portion of the District to the treatment plant. Continued sewer modifications in the District promoted the interception and routing of combined flows in other areas underserved to the pump station via larger intercepting sewers constructed along Pleasant, Sanders and elsewhere connecting with the main Liddesdale Interceptor—the primary influent sewer to pump station.
In the

Primary Driver: 2 - Performance

Driver Explanation:

Preferred alternative wet weather relief sewer modifications to mitigate historical basement and street flooding in impacted districts and otherwise provide increased flow transport and treatment for economic, ecologic and societal benefit of customers in

CIP Number: 222001

Project Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Scoring

Project Manager Weighted Score: 55.40

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

Risk Committee Weighted Score: 53.60

Criteria Name	Score	Comment
Condition	1	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	2	Scored in 2019
Operations and Maintenance	1	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	4	Scored in 2019

CIP Number: 222001

Project Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$397	$0	$0	$57	$57	$53	$46	$46	$46	$248	$92

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2028

CIP Number: 222001

Project Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase: Study & Design & Construction Assistance # 1

Phase Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Budget: Wastewater

Phase Status: Active - Procurement

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 6/1/2020

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Solicitation is in Bonfire. Contract # 2002655

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By: Consultant

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$6,000	$0	$0	$868	$733	$733	$733	$733	$733	$3,666	$1,466

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	6/1/2020	6/30/2020
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	10/1/2020	6/30/2028
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 222001

Project Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase: Construction (Build) # 1

Phase Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2024

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$47,000	$0	$0	$0	$0	$4,091	$15,695	$19,786	$27,214

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/2/2024	6/30/2024
Construction - Project Execution	7/1/2024	6/30/2028
Construction - Closeout	4/1/2028	6/30/2028

CIP Number: 222001

Project Title: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

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

CIP	5 Year Total	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$11,000	$550	$2,750	$5,500	$2,200	$0	$0	$0	$0	$11,000
2019	$17,635	$0	$10	$1,372	$5,961	$10,292	$20,365	$0	$0	$38,000
2020	$23,954	$0	$0	$0	$3,800	$10,077	$10,077	$14,077	$0	$38,031
2021	$32,147	$0	$0	$975	$3,128	$3,371	$11,234	$13,439	$21,365	$53,512

Description of CIP Changes:

Project is made active.

CIP Number: 222002

Project Title: Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Field Services

Class Lvl 3: Interceptor

☐ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

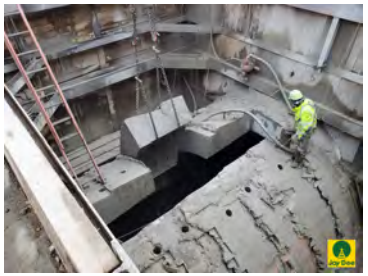
☐ **Water Master Plan Right Sizing**

☑ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**



DRI Shaft Construction

Project Engineer/Manager: Mini Panicker

Director: Todd King

Managing Dept.: SCC

Date Original Business Case Prepared: 10/11/2016

Year Project Added to CIP: 2016

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Detroit River Interceptor

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Evaluation of the existing condition of the Detroit River interceptor (DRI), and rehabilitation/replacement of portions based on the evaluation results are essential to optimize the transportation capacity of the GLWA collection system and to increase its service life.

Scope of Work/Project Alternatives:

Preliminary Scope of Work of the Project is as follows: Review the existing records, investigate the existing conditions , provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

Other Important Info:

Challenges: DRI may have flow control challenges for both inspection and rehabilitation. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

Project History: The installation of some of the GLWA interceptors and sewers are dated back to 1912 under various contracts.
Detroit River Interceptor inspection was completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity.

Primary Driver: 1 - Condition

Driver Explanation:

Recent inspections revealed portions with encrustation and deterioration.

CIP Number: 222002

Project Title: Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Scoring

Project Manager Weighted Score: 76.80

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

Risk Committee Weighted Score: 65.40

Criteria Name	Score	Comment
Condition	5	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	3	Scored in 2019
Operations and Maintenance	1	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	5	Scored in 2019
Efficiency and Innovation	1	Scored in 2019

CIP Number: 222002

Project Title: Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/3/2017

End Date: 6/30/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$373	$56	$56	$46	$46	$41	$46	$46	$46	$225	$46

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/3/2017	6/30/2025

CIP Number: 222002

Project Title: Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase: Design-Build # 2

Phase Title: Repair/Rehab of DRI from Alter Rd to WRRF

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 7/3/2017
End Date: 5/24/2023
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Pool for future projects

Cost Est. Class: Class 1
Cost Est. Date: 8/31/2017
Cost Est. Source: Contractor
Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 2	$52,402	$20,095	$20,095	$11,146	$11,146	$10,016	$0	$0	$0	$21,162	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	6/1/2020	6/30/2020
Design - Procurement	6/1/2020	6/30/2020
Construction - Project Execution	7/3/2017	5/24/2023
Construction - Closeout	2/23/2023	5/24/2023

CIP Number: 222002

Project Title: Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase: TBD / Future Allocation / General Holding # 1

Phase Title: Future Condition Assessment/Rehab

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2023

End Date: 6/30/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
This is for the condition assessment of DRI.

Cost Est. Class: Class 4

Cost Est. Date:

Cost Est. Source: Engineering

Cost Est. Prepared By: Mini Panicker

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

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding # 1	$20,000	$0	$0	$5,650	$5,189	$3,599	$14,438	$5,562

Phase Dates

Activity Name	Start Date	End Date
TBD / Project Allocation	7/1/2023	6/30/2025

CIP Number: 222002

Project Title: Detroit River Interceptor (DRI) Evaluation 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	Total
2018	$20,000	$321	$10,000	$5,000	$5,000	$0	$0	$0	$0	$0	$20,321
2019	$39,697	$5	$2,232	$1,084	$8,052	$10,187	$10,187	$10,187	$2,491	$0	$44,425
2020	$32,000	$0	$2,647	$9,424	$10,000	$10,000	$10,000	$1,000	$1,000	$5,000	$49,071
2021	$54,885	$0	$0	$10,592	$16,199	$23,634	$9,786	$1,465	$10,014	$9,986	$81,676

Description of CIP Changes:

Funds increased due to anticipated DB-226 scope increase.

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: Field Services

Class Lvl 3: Interceptor

☐ **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: Todd King

Managing Dept.: SCC

Date Original Business Case Prepared: 7/28/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: VRs, ISDs, Access Hatches, Backwater Gates

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

VR-Gates, ISDs, and backwater gates are operational elements in the collection system that help in minimizing the untreated overflows and maximizing the flows to the WRRF and CSO control facilities. They have reached their life expectancy and needs rehabilitation.

Scope of Work/Project Alternatives:

Evaluate the existing conditions of the VR-Gates, ISDs, Backwater Gates and Access Hatches, provide the necessary design and the Construction Assistance for their replacement/rehabilitation.

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Other Important Info:

Google map of VR-3 and VR-9 are included. VR-4, 5, 6, 10, 11 &13 are also part of the project.

Project History: GLWA interceptors and sewers were constructed in the early 1900s. The hatches and access covers secure operations and maintenance access points throughout the system for items such as the backwater gates, ISD, and VR. The backwater gates, ISD, and VR are all critical elements that control and divert flows throughout the system. Most of them have reached their life expectancy and are hard to operate properly. These structures play vital roles in controlling the flow, increasing the storage capacity, and in meeting the NPDES permits.

Challenges: These are operational elements, so flow control may be a challenge.

Primary Driver: 1 - Condition

Driver Explanation:

These structures have reached their life expectancy and some of the operating technology is outdated.

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Scoring

Project Manager Weighted Score: 76.20

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

Risk Committee Weighted Score: 68.20

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	3	Scored in 2019
Operations and Maintenance	5	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	2	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	3	Scored in 2019

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 10/14/2019

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$543	$10	$10	$72	$87	$87	$57	$57	$57	$346	$115

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/14/2019	6/30/2026

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Phase: Study & Design & Construction Assistance # 1

Phase Title: Conveyance System InfrastructureImprovements

Phase Budget: Wastewater
Phase Status: Under Procurement
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 10/14/2019
End Date: 7/13/2023
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This contract is to provide design and construction phase services to perform repairs and replace existing equipment throughout the GLWA Conveyance System Sewers. Work will include rehabilitation/ replacement of chamber hatches and access covers throughout the system, rehabilitation/ replacement of inflatable storage dams, rehabilitation, or replacement of remote operated gates and remote gate operators, and rehabilitation/ replacement of outfall gates.

Cost Est. Class: Class 4
Cost Est. Date: 8/31/2017
Cost Est. Source: Engineering
Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Study & Design & Construction Assistance # 1	$4,576	$459	$459	$1,356	$1,356	$1,356	$48	$0	$2,761

Phase Dates

Activity Name	Start Date	End Date
Study - Procurement	6/1/2020	6/30/2020
Study - Project Execution	6/1/2020	6/30/2020
Design - Project Execution	10/14/2019	7/13/2023
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Phase: Construction (Unallocated)

Phase Title: Backwater Gates, In-Systems Storage Devices, Regulators, and Valve Remotes Rehabilitation

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 7/1/2020
End Date: 6/30/2025
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
For next version of Req/Contract 1803709 plus assoicated construction

Cost Est. Class: Class 2
Cost Est. Date: 8/31/2017
Cost Est. Source: Contractor
Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Construction (Unallocated)	$17,500	$0	$0	$1,331	$0	$5,390	$5,390	$5,390	$16,169

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/2/2020	6/30/2020
Construction (3 Projects)	7/1/2020	6/30/2023
Construction - Closeout	4/1/2025	6/30/2025

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

Phase: Study/Design/C.A./Construction (Unallocated)

Phase Title: Pump Station Allowance & (2 Study and Design)

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 7/1/2020
End Date: 6/30/2026
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
This phase was added by Wastewater Master Plan

Cost Est. Class: Class 2
Cost Est. Date: 7/1/2019
Cost Est. Source: Wastewater Master Plan
Cost Est. Prepared By: Carl Johnson- CDM Smith

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study/Design/C.A./Construction (Unallocated)	$18,538	$0	$0	$669	$3,574	$3,574	$3,574	$1,787	$1,787	$14,295	$3,574

Phase Dates

Activity Name	Start Date	End Date
Pump Station Allowance (2 Study & Design Projects)	7/1/2020	6/30/2026

CIP Number: 222004

Project Title: SEWER SYSTEM INFRASTRUCTURE IMPROVEMENTS and Pumping Stations

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$2,763	$341	$1,000	$1,422	$0	$0	$0	$0	$0	$0	$2,763
2019	$2,033	$341	$1,019	$1,014	$0	$0	$0	$0	$0	$0	$2,374
2020	$26,014	$0	$1,019	$3,500	$3,514	$6,000	$5,000	$8,000	$60,000	$0	$87,033
2021	$37,711	$0	$4	$1,459	$2,701	$5,433	$16,434	$9,864	$3,279	$1,952	$41,126

Description of CIP Changes:

Title Changed to "Sewer System Infrastructure and Pumping Stations Improvements" and made it a program in 2021 CIP update.

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Stations

☐ **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: 3/9/2011

Year Project Added to CIP: 2011

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Fairview Pumping Station

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Replacement and upgrade of pumping equipment's to improve transportation of waste water to the treatment plant

Scope of Work/Project Alternatives:

The scope of work consists of the study, design, and construction for four new pumping systems including inlet and discharge valves and wet well hydraulics. This will also include enlarging doorways, revamping roadways, and upgrading electrical and control systems.

Other Important Info:

Schedule delay due to Abnormally and excessively high dry weather flows exceed the planned design capacity of the temporary sewage by-pass pumping station. Delaying the installation of the new pumping units at Fairview Station while waiting for dry weather flows to subside to normal flows poses the risk of not being able to pump dry weather flows in the event that another sewage pump permanently fails at Fairview Station. Increasing the capacity of the temporary by-pass sewage pumping station, which is the scope of this proposed change order, will allow the project to continue to progress uninterrupted and see that the new pumping units are installed. o

Primary Driver: 1 - Condition

Driver Explanation:

N/A - Active

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Scoring

Project Manager Weighted Score: 72.80

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 5/29/2015

End Date: 7/5/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$250	$159	$159	$46	$45	$0	$0	$0	$0	$45	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/29/2015	7/5/2022
Capital Delivery Salary	5/29/2015	7/5/2022

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Phase: Design & Construction Assistance # 1

Phase Title: CS-1747 Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Budget: Wastewater

Phase Status:

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 4/25/2016

End Date: 7/5/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Amendment needed for post bid construction services and RPR that was deleted during negotiations.

Cost Est. Class: Class 3

Cost Est. Date:

Cost Est. Source: consultant

Cost Est. Prepared By: Consultant Brown and Caldwell

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$7,278	$3,107	$3,107	$2,071	$2,071	$28	$0	$0	$0	$2,100	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	5/29/2015	8/27/2015
Design - Procurement	8/28/2015	4/24/2016
Design - Project Execution	4/25/2016	7/5/2022
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Phase: Construction (Build) # 1

Phase Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Budget: Wastewater

Phase Status:

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 1/1/2019

End Date: 6/23/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Now CS-201?

Cost Est. Class: Class 4

Cost Est. Date:

Cost Est. Source: consultant

Cost Est. Prepared By: Consultant Brown and Caldwell

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$32,546	$11,007	$11,007	$10,873	$10,665	$0	$0	$0	$0	$10,665	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	3/5/2018	7/3/2018
Construction - Procurement	7/4/2018	12/31/2018
Construction - Project Execution	1/1/2019	6/23/2022
Construction - Closeout	3/25/2022	6/23/2022

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

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

CIP	5 Year Total	FY16	FY17	FY18	FY19	FY20	FY21	FY22	Total
2018	$31,800	$128	$472	$2,100	$14,350	$15,350	$0	$0	$32,400
2019	$30,482	$0	$778	$508	$12,094	$14,414	$3,974	$0	$31,768
2020	$22,891	$0	$0	$1,551	$6,000	$18,000	$4,891	$0	$30,442
2021	$6,320	$0	$0	$0	$3,404	$27,552	$5,336	$984	$37,276

Description of CIP Changes:

Change Order No.1 Added

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Stations

☐ **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)**

Both PSs pictures

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 10/12/2016

Year Project Added to CIP: 2016

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Conner Creek & Freud Pump Stations

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

The primary objective of this project is to study the overall performance of Connor Creek and Freud sewage pumping stations and develop design, and build an operational strategy to optimize the utilization of interconnected piping and operation between both pumping stations and the Connor Creek Retention and Treatment Basin.

Scope of Work/Project Alternatives:

Provide basis of design, and final design for an operational strategy to optimize the utilization of interconnected piping and operation between Connor Creek and Freud pumping stations and the Connor Creek Retention and Treatment Basin. Provide construction of the emerging project and construction assistance during construction of the emerging project.

Other Important Info:

Challenges: Meeting the collection system transport capacity during the construction.

Project History: The Connor Creek Pump Station (CCPS) was originally built in 1928 with four storm water pumps, each with a rated capacity of 500 cubic feet per second (cfs). The CCPS was expanded in 1940 adding four more pumps of the same capacity. The pump station currently has a total capacity of 4,000 cfs and a firm capacity of 3,500 cfs. The pumps are primed using a vacuum system that relies on the flooding of the discharge channel siphon to maintain a water seal, which allows the pumps to be primed. Since the Conner Creek CSO RTB went into operation in November 2005, the discharge channel for the CCPS is drained when the CC RTB is dewatered. Therefore, the vacuum priming system cannot prime the pumps. This results in the CCPS pumps being unable to start until the discharge channel is flooded and the vacuum priming system has a seal on the discharge

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

to prime the pumps.
The Freud Pump Station (FPS) was originally built in 1954 with eight storm water pumps, each with a 450 cfs capacity. Two additional pumps were subsequently installed for dewatering and to act as sanitary pumps during dry weather flows. These two pumps are rated at 35 cfs and 20 cfs and are not operated when the storm water pumps are in service. Under the current operating protocol, the FPS is operated first and results in water flowing to the discharge channel of the CCPS, providing sufficient water to ensure submergence of the vacuum siphon block to allow the vacuum system to prime the CCPS pumps.
The FPS pumps do not require priming during normal operations. The discharge pipe from each pump is tied to three 14’ x 14’ box conduits which transport flow to the CC RTB. The crown elevation of these conduits is approximately 95’ and the lowest ground elevation along these conduits ranges from 96’ to 100’. Surcharging and flooding have been reported when the CC RTB is filled to the overflow elevation of 98’ and more than three of the FPS storm water pumps are in operation

Primary Driver: 2 - Performance

Driver Explanation:

During peak wet weather there is a potential for the sewers to surcharge and flood the street.

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Scoring

Project Manager Weighted Score: 78.00

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

Risk Committee Weighted Score: 79.60

Criteria Name	Score	Comment
Condition	4	Scored in 2019
Performance (Service Level/Reliability)	4	Scored in 2019
Regulatory (Environmental/Legal)	5	Scored in 2019
Operations and Maintenance	3	Scored in 2019
Public Health and Safety	4	Scored in 2019
Public Benefit	5	Scored in 2019
Financial	5	Scored in 2019
Efficiency and Innovation	1	Scored in 2019

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 12/3/2015

End Date: 6/30/2029

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$521	$84	$84	$57	$57	$46	$46	$46	$46	$241	$138

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/3/2015	6/30/2029
Capital Delivery Salary	12/3/2015	6/30/2029

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Phase: Design # 1

Phase Title: CS-120, Freud & Conner Creek Pump Station Improvements

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Revenue Financed Capital

Start Date: 3/27/2017
End Date: 6/30/2029
Fund: Improvement and Extension Fund
Usefull Life > Yrs: No
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 4
Cost Est. Date: 8/31/2017
Cost Est. Source: Engineering
Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design # 1	$34,122	$2,422	$2,422	$6,388	$3,300	$4,200	$2,000	$3,400	$4,100	$17,000	$8,312

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	4/29/2016	7/28/2016
Design - Project Execution	3/27/2017	6/30/2029
Construction Assistance - Project Execution	7/1/2022	6/30/2028

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Phase: Construction (Build) # 1

Phase Title: CON-109, Freud & Conner Creek Pump Station Improvements

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 9/30/2016

End Date: 6/30/2029

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Freud Pump Rehabilitation and procurement of new pump and a switchgear.

Cost Est. Class: Class 4

Cost Est. Date: 8/31/2017

Cost Est. Source: Engineering

Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$194,636	$4,836	$4,836	$8,400	$15,400	$20,000	$30,000	$73,800	$116,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	9/30/2016	6/30/2029

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$14,460	$8,040	$5,900	$5,100	$2,460	$1,000	$0	$0	$0	$0	$0	$22,500
2019	$13,997	$2,101	$1,384	$1,192	$0	$223	$1,582	$11,000	$15,000	$0	$0	$32,482
2020	$155,078	$0	$5,110	$1,984	$17,029	$13,014	$50,014	$50,014	$25,007	$257	$0	$162,429
2021	$71,033	$0	$0	$5,631	$7,364	$6,445	$57	$9,898	$23,830	$30,803	$138,071	$222,099

Description of CIP Changes:

CS-120 funds increased.
Funds for the future construction project from CS-120 also increased.

CIP Number: 232004

Project Title: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Systems Control Center

Class Lvl 3: Pump Stations

☐ **Project New to CIP**

☐ **Innovation**

☑ **WW Master Plan**

☑ **Water Master Plan Right Sizing**

☑ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Todd King

Director: Todd King

Managing Dept.: Field Services

Date Original Business Case Prepared: 8/28/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location:

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The condition of the Blue Hill PS has not been accurately established to the metrics being established for other GLWA pumping stations. A new condition assessment is required.

Scope of Work/Project Alternatives:

Perform station inspection by a multi-discipline team of specialists in pumps, valves, electrical, HVAC, structural, building envelope I&C, security, and building mechanical systems. Perform wire to water efficiency tests

Other Important Info:

Performance of this pumping station is related with flood control objectives for Conner and Freud Pumping Stations.

Primary Driver: 1 - Condition

Driver Explanation:

Nearing end of useful life

CIP Number: 232004

Project Title: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 232004

Project Title: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

Phase: GLWA Salaries

Phase Title: Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Revenue Financed Capital

Start Date: 5/3/2020

End Date: 6/30/2021

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
GLWA Salaries	$57	$0	$0	$57

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/3/2020	6/30/2021

CIP Number: 232004

Project Title: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

Phase: Study # 1

Phase Title: Study

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Revenue Financed Capital

Start Date: 1/30/2021

End Date: 6/30/2021

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
Study # 1	$200	$0	$0	$200

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	5/3/2020	8/1/2020
Study - Procurement	8/2/2020	1/29/2021
Study - Project Execution	1/30/2021	6/30/2021

CIP Number: 232004

Project Title: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

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

CIP	5 Year Total	FY21	Total
2021	$286	$286	$286

Description of CIP Changes:

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Systems Control Center

Class Lvl 3: In System Devices (Dams, ISD's)

☐ **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: 8/1/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Rouge Riiver

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

The Rouge River receives untreated CSO discharges from GLWA CSO outfalls and outfalls from other Member combined sewer systems during wet weather. CSO control strategies that deal with first flush capture from small storms is typically a cost-effective implementation step in a CSO control program. Studies for the Wastewater Master Plan have shown the effectiveness of controlling first flush for small storms with receiving water modeling. 9 locations on DWSD trunk sewers east of the Rouge River are feasible for storing 25 million gallons of CSO during small storms (less than 1-inch of rainfall).

Scope of Work/Project Alternatives:

Perform sewer inspections, utility survey, and flow metering to establish and prioritize the siting of 9 new In-System Storage Devices (ISD)

Perform preliminary and final design of the ISDs, including upstream and downstream access points, power supply and instrumentation.

Construct 9 new inflatable dam in-system storage devices (ISD). Modify existing manholes or construct new access points upstream and downstream of each ISD. Provide electrical power, above ground structures for pneumatic control systems and instrumentation for remote operation. Provide connection for mobile standby generator.

Other Important Info:

The new ISD devices would be installed in trunk sewers owned and operated by DWSD. These are not GLWA leased sewers. A legal agreement may need to be prepared for GLWA to construct, operate, and maintain.

Primary Driver: 3 - Regulatory

Driver Explanation:

The NPDES permit requires GLWA to control untreated CSO discharge. This project serves to increase in-system storage for small storms to prevent smaller storms from untreated cso discharging.

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Scoring

Project Manager Weighted Score: 58.60

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

Risk Committee Weighted Score: 60.80

Criteria Name	Score	Comment
Condition	1	Scored in 2019
Performance (Service Level/Reliability)	3	Scored in 2019
Regulatory (Environmental/Legal)	5	Scored in 2019
Operations and Maintenance	1	Scored in 2019
Public Health and Safety	4	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	1	Scored in 2019
Efficiency and Innovation	4	Scored in 2019

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: TBD

Funding Source: Revenue Financed Capital

Start Date: 6/1/2021

End Date: 12/27/2030

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$378	$0	$0	$0	$0	$57	$57	$57	$172	$206

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2021	12/27/2030

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study, Design, and Construction Assistance for West-Side In-system Storage Devices

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: TBD

Funding Source: Revenue Financed Capital

Start Date: 6/1/2021

End Date: 12/27/2030

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Includes determing proper location of the sites, acquiring the land, developing easements and agreements necessary for construction, operations and mainteannce, and providing design and construction assistance to execute the project. Depending on how land acquisition goes, the design team could start on one side for acquiring, then designing and then bidding out the project to begin construction early. Execution of this project will need to be further evaluated during this period to ensure project meets planned criteria. Property acquisition can continue in parallel to design and construction activities.

Cost Est. Class: Class 4

Cost Est. Date: 8/1/2019

Cost Est. Source: CDM Smith (WWMP)

Cost Est. Prepared By: Carl Johnson

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

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$8,839	$0	$0	$969	$967	$967	$2,903	$5,936

Phase Dates

Activity Name	Start Date	End Date
Design	6/1/2021	6/30/2020
Design - Pre-Procurement	6/1/2021	6/30/2020
Design - Procurement	6/1/2021	6/30/2020
Construction Assistance - Project Execution	7/1/2023	12/27/2030

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Phase: Construction (Build) # 1

Phase Title: Construction of in-system storage devices (West-side System)

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: TBD
Funding Source: Bond Proceeds

Start Date: 7/1/2026
End Date: 12/27/2030
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
This phase constructs the designed improvements for the in-system storage devices at the 9 (or more) locations within the west-side sewer system which serve to protect the Rouge River during small precipitation events.

Cost Est. Class: Class 4
Cost Est. Date: 8/1/2019

Cost Est. Source: CDM Smith (WWMP)
Cost Est. Prepared By: Carl Johnson

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

	Total Costs	Actual Costs	Prior FYs	FY27+
Construction (Build) # 1	$37,100	$0	$0	$37,100

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2026	6/30/2026
Construction - Project Execution	7/1/2026	12/27/2030
Construction - Closeout	9/28/2030	12/27/2030

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

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

CIP	5 Year Total	FY22	FY23	FY24	FY25	FY26	Total
2021	$5,476	$32	$86	$3,374	$1,984	$41,321	$46,797

Description of CIP Changes:

This is a new project to the FY 2021 CIP being driven by recommendations from the Wastewater Masterplan Project (2019).

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☐ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☑ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Todd King

Managing Dept.: SCC

Date Original Business Case Prepared: 10/11/2016

Year Project Added to CIP: 2013

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Sewers and Interceptors

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Rehabilitation and replacement program of the existing sewers and interceptors is identified after the conditiio assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:

Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

Other Important Info:

Challegers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Project History: The installation of some of these interceptors and sewers are dated back to 1912 under various contracts. Detroit River Interceptor inspection was recently completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity. Inspections of sewers to reveal the existing conditions are necessary and shall be done every 5 to 7 years. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

Primary Driver: 1 - Condition

Driver Explanation:

Some sewers have sediment deposits that results in transportation capacity limitation. Some have deterioration.

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater
Phase Status: Active
Cost Allocation: CTA
Funding Source: Bond Proceeds

Start Date: 8/25/2016
End Date: 6/30/2019
Fund: Construction Bond Fund
Usefull Life > Yrs: No
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5
Cost Est. Date:
Cost Est. Source:
Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/25/2016	6/30/2019

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 7/1/2020

End Date: 6/30/2027

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding	$53,749	$0	$0	$3,138	$0	$7,214	$7,915	$10,695	$11,547	$37,371	$13,240

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2020	6/30/2024
TBD / Future Allocation / General Holding	7/1/2020	6/30/2027
Construction	7/1/2022	6/30/2026

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$76,000	$2,612	$8,000	$8,000	$20,000	$20,000	$20,000	$0	$0	$0	$0	$78,612
2019	$55,201	$3,397	$7,751	$10,601	$10,400	$11,400	$11,400	$11,400	$11,400	$0	$0	$77,749
2020	$75,000	$0	$13,555	$8,609	$15,000	$15,000	$15,000	$15,000	$15,000	$95,000	$0	$192,164
2021	$103,737	$0	$0	$18,637	$19,029	$12,976	$36,047	$24,872	$15,495	$14,347	$13,240	$154,643

Description of CIP Changes:

Funds changed for CS-168, CON-149, added contract 1802575 to the phases,

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☐ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☐ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Todd King

Managing Dept.: SCC

Date Original Business Case Prepared: 10/11/2016

Year Project Added to CIP: 2013

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Sewers and Interceptors

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Rehabilitation and replacement program of the existing sewers and interceptors is identified after the conditiio assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:

Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

Other Important Info:

Challegers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Project History: The installation of some of these interceptors and sewers are dated back to 1912 under various contracts. Detroit River Interceptor inspection was recently completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity. Inspections of sewers to reveal the existing conditions are necessary and shall be done every 5 to 7 years. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

Primary Driver: 1 - Condition

Driver Explanation:

Some sewers have sediment deposits that results in transportation capacity limitation. Some have deterioration.

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/14/2017

End Date: 8/17/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$347	$296	$296	$46	$6	$0	$0	$0	$0	$6	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/14/2017	8/17/2021
Capital Delivery Salary	7/14/2017	8/17/2021

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

Phase: Design-Build # 1

Phase Title: CON-149, Emergency Sewer Repair

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/14/2017

End Date: 8/17/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 1

Cost Est. Date: 8/31/2017

Cost Est. Source: Contractor

Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	$31,935	$19,207	$19,207	$11,255	$1,473	$0	$0	$0	$0	$1,473	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/14/2017	1/14/2020
Construction - Project Execution	7/14/2017	8/17/2021
Construction - Closeout	5/19/2021	8/17/2021

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

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

CIP

Description of CIP Changes:

Funds changed for CS-168, CON-149, added contract 1802575 to the phases,

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Project Status: Project Execution - Design

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Woodward Sewer System

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 10/11/2016

Year Project Added to CIP: 2013

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Sewers and Interceptors

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Rehabilitation and replacement program of the existing sewers and interceptors is identified after the conditiio assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:

Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Other Important Info:

Challegers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Project History: The installation of some of these interceptors and sewers are dated back to 1912 under various contracts. Detroit River Interceptor inspection was recently completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection revealed sludge deposition with reduced transportation capacity. Inspections of sewers to reveal the existing conditions are necessary and shall be done every 5 to 7 years. Recommendations from these inspections may reveal further need for cleaning, rehabilitation or replacement.

Primary Driver: 1 - Condition

Driver Explanation:

Some sewers have sediment deposits that results in transportation capacity limitation. Some have deterioration.

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 2/8/2019

End Date: 6/30/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$240	$9	$9	$56	$46	$46	$46	$38	$0	$176	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/8/2019	6/30/2025

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Phase: Study & Design & Construction Assistance # 1

Phase Title: Conveyance System Engineering Services

Phase Budget: Wastewater

Phase Status: Under Procurement

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 8/8/2019

End Date: 8/7/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Brown and Caldwell

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	5 Year Total
Study & Design & Construction Assistance # 1	$6,000	$904	$904	$2,422	$2,422	$252	$0	$2,674

Phase Dates

Activity Name	Start Date	End Date
Study - Procurement	2/8/2019	8/7/2019
Design/Engineering	8/8/2019	8/7/2022
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	6/1/2020	6/30/2020

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Phase: Construction (Build) # 1

Phase Title: Construction from 1802575

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2020

End Date: 6/30/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Sewer rehabilitation projects arising from 1802575

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Construction (Build) # 1	$45,917	$0	$0	$9,178	$9,178	$9,178	$9,204	$9,178	$36,739

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/2/2020	6/30/2020
Construction - Project Execution	7/1/2020	6/30/2025
Construction - Closeout	4/1/2025	6/30/2025

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

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

CIP

Description of CIP Changes:

Schedule Extension, because this might need a CO

CIP Number: 260205

Project Title: NWI Rehabilitation

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☑ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☐ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared:

Year Project Added to CIP: 2021

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location:

Funds and Cost Center: Wastewater - 5421-892111

Problem Statement:

Scope of Work/Project Alternatives:

Other Important Info:

Primary Driver:

Driver Explanation:

CIP Number: 260205

Project Title: NWI Rehabilitation

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260205

Project Title: NWI Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2019

End Date: 6/30/2023

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
GLWA Salaries	$115	$0	$0	$23	$46	$46	$92

Phase Dates

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

CIP Number: 260205

Project Title: NWI Rehabilitation

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2019

End Date: 6/30/2023

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
TBD / Future Allocation / General Holding	$10,823	$79	$79	$1,744	$5,000	$4,000	$9,000

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	6/1/2019	6/30/2020
Construction	3/12/2021	6/30/2023

CIP Number: 260205

Project Title: NWI Rehabilitation

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

CIP

Description of CIP Changes:

CIP Number: 260206

Project Title: Conveyance System Repairs (Sewers)

Project Status: Active - Pre-Procurement - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☑ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☐ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 7/24/2020

Year Project Added to CIP: 2020

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Sewers and Interceptors

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Rehabilitation program of the existing sewers and interceptors is identified after the condition assessment. This rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:

Evaluate the existing conditions of Brush, Joy Road, &Seven Mile Sewers. Provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

Other Important Info:

This Engineering Services contract also includes the remaining CSO outfalls which is being funded by the Outfall Program, 260500

Primary Driver: 1 - Condition

Driver Explanation:

There are PACP grades 4 and 5 Structural and O&M deficiencies in these sewers. Renewing them will increase the capacity of the system as well as reduce I/I into the sewer system

CIP Number: 260206

Project Title: Conveyance System Repairs (Sewers)

Scoring

Project Manager Weighted Score: 58.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260206

Project Title: Conveyance System Repairs (Sewers)

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 2/4/2020

End Date: 6/30/2028

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$321	$0	$0	$23	$46	$46	$46	$46	$46	$230	$69

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/4/2020	6/30/2028

CIP Number: 260206

Project Title: Conveyance System Repairs (Sewers)

Phase: Design & Construction

Phase Title: Design & Construction

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 1/1/2021

End Date: 6/30/2028

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction	$47,500	$0	$0	$500	$7,000	$7,000	$7,000	$7,000	$8,000	$36,000	$11,000

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	1/1/2021	6/30/2027
Construction	7/1/2021	6/30/2028

CIP Number: 260206

Project Title: Conveyance System Repairs (Sewers)

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

CIP

Description of CIP Changes:

NA. This CIP is new

CIP Number: 260500

Project Title: CSO Outfall Rehabilitation

Project Status: Active - Procurement - Construction

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☐ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☑ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 3/3/2017

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: CSO Outfalls

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

Scope of Work/Project Alternatives:

Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

Other Important Info:

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

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

Primary Driver: 2 - Performance

Driver Explanation:

Frequent uncontrolled CSOs from the outfalls

CIP Number: 260500

Project Title: CSO Outfall Rehabilitation

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260500

Project Title: CSO Outfall Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2021

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

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

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/1/2021	6/30/2027

CIP Number: 260500

Project Title: CSO Outfall Rehabilitation

Phase: TBD / Future Allocation / General Holding # 1

Phase Title: New Construction for CSO Outfall Rehabilitation

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 7/1/2021

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This contract will provide the rehabilitation of the rest of the CSO outfalls.

Cost Est. Class: Class 1

Cost Est. Date: 8/31/2017

Cost Est. Source: Contractor

Cost Est. Prepared By: Biren Saparia

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding # 1	$5,000	$0	$0	$0	$833	$833	$835	$833	$833	$4,167	$833

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	7/1/2021	6/30/2027

CIP Number: 260500

Project Title: CSO Outfall Rehabilitation

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

CIP	5 Year Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$30,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$0	$0	$0	$36,000
2019	$34,336	$0	$507	$3,826	$10,001	$10,001	$10,001	$10,001	$0	$0	$44,337
2020	$74,179	$9	$4,000	$15,102	$17,947	$10,926	$15,102	$15,102	$11,000	$0	$89,188
2021	$52,076	$0	$3,331	$4,802	$11,706	$9,156	$11,995	$10,976	$8,243	$4,197	$64,406

Description of CIP Changes:

NA

CIP Number: 260504

Project Title: Phase 2 Outfalls- 19000796

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☐ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☐ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 3/3/2017

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: CSO Outfalls

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

Scope of Work/Project Alternatives:

Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

Other Important Info:

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

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

Primary Driver: 2 - Performance

Driver Explanation:

Frequent uncontrolled CSO discharges to the Detroit River

CIP Number: 260504

Project Title: Phase 2 Outfalls- 19000796

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260504

Project Title: Phase 2 Outfalls- 19000796

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 11/1/2019

End Date: 1/26/2021

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
GLWA Salaries	$33	$6	$6	$26

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/1/2019	1/26/2021

CIP Number: 260504

Project Title: Phase 2 Outfalls- 19000796

Phase: Construction (Build) # 1

Phase Title: CSO Outfall Rehabilitation Phase 2

Phase Budget: Wastewater

Phase Status: Under Procurement

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 11/1/2019

End Date: 1/26/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This contract is to provide rehabilitation for nine (9) GLWA Outfalls (B-6, B-15, B-17, B-20, B-23, B-24, B-31, B-36, and B-45)

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction (Build) # 1	$5,018	$2,196	$2,196	$2,823

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	11/1/2019	1/26/2021
Construction	11/1/2019	1/26/2021

CIP Number: 260504

Project Title: Phase 2 Outfalls- 19000796

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

CIP

Description of CIP Changes:

None

CIP Number: 260505

Project Title: Phase 4 Outfalls

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Phase IV construction at Outfall B-19

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 3/3/2017

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: CSO Outfalls

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

Scope of Work/Project Alternatives:

Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

Other Important Info:

PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

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

Primary Driver: 2 - Performance

Driver Explanation:

Frequently discharging outfalls

CIP Number: 260505

Project Title: Phase 4 Outfalls

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260505

Project Title: Phase 4 Outfalls

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 3/1/2020

End Date: 9/1/2021

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
GLWA Salaries	$98	$6	$6	$46	$46	$46

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2020	9/1/2021

CIP Number: 260505

Project Title: Phase 4 Outfalls

Phase: Construction (Build) # 1

Phase Title: Rehabilitation of GLWA Outfalls-Phase IV

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 3/1/2020

End Date: 9/1/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This Contract is for the construction of the rehabilitation designs prepared for CSO Outfalls B-9, B-12, B-14, B16, B-18, B-19, B21, B-22, B-27, B-28, and B-29. The construction documents were prepared under CS-168.

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Construction (Build) # 1	$5,620	$1,580	$1,580	$3,445	$595	$0	$595

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	3/1/2020	9/1/2021
Construction	3/1/2020	9/1/2021

CIP Number: 260505

Project Title: Phase 4 Outfalls

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

CIP

Description of CIP Changes:

None

CIP Number: 260508

Project Title: B-39 Outfall Rehabilitation

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☑ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☐ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared:

Year Project Added to CIP: 2021

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location:

Funds and Cost Center: Wastewater - 5421-892111

Problem Statement:

Scope of Work/Project Alternatives:

Other Important Info:

Primary Driver:

Driver Explanation:

CIP Number: 260508

Project Title: B-39 Outfall Rehabilitation

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260508

Project Title: B-39 Outfall Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2020

End Date: 8/23/2023

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	5 Year Total
GLWA Salaries	$181	$0	$0	$57	$57	$57	$8	$123

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	8/23/2023

CIP Number: 260508

Project Title: B-39 Outfall Rehabilitation

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2020

End Date: 8/23/2023

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	5 Year Total
TBD / Future Allocation / General Holding	$388	$0	$0	$123	$123	$123	$18	$264

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	6/1/2020	8/23/2023

CIP Number: 260508

Project Title: B-39 Outfall Rehabilitation

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

CIP

Description of CIP Changes:

CIP Number: 260509

Project Title: B-40 Outfall Rehabilitation

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

- [x] **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:

Year Project Added to CIP: 2022

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location:

Funds and Cost Center: Wastewater - 5421-892111

Problem Statement:

Scope of Work/Project Alternatives:

Other Important Info:

Primary Driver:

Driver Explanation:

CIP Number: 260509

Project Title: B-40 Outfall Rehabilitation

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260509

Project Title: B-40 Outfall Rehabilitation

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2020

End Date: 6/30/2021

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
GLWA Salaries	$6	$0	$0	$6

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/1/2020	6/30/2021

CIP Number: 260509

Project Title: B-40 Outfall Rehabilitation

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2020

End Date: 6/30/2021

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
TBD / Future Allocation / General Holding	$83	$66	$66	$16

Phase Dates

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

CIP Number: 260509

Project Title: B-40 Outfall Rehabilitation

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

CIP

Description of CIP Changes:

CIP Number: 260510

Project Title: Conveyance System Repairs (Outfalls)

Project Status: Active - Pre-Procurement - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: Programs

Class Lvl 3: Programs

☑ **Project New to CIP**

☐ **Innovation**

☐ **WW Master Plan**

☐ **Water Master Plan Right Sizing**

☑ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Managing Dept.: SCC

Date Original Business Case Prepared: 8/24/2020

Year Project Added to CIP: 2020

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: CSO Outfalls

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

Rehabilitation program of the existing CSO outfalls, sewers and interceptors is identified after the condition assessment. This rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy

Scope of Work/Project Alternatives:

Evaluate the existing conditions of the remaining CSO outfalls, provide the necessary cleaning/rehabilitation to optimize the design capacity of the collection system and to minimize the uncontrolled CSO discharges to the rivers

Other Important Info:

This Engineering Services contract also includes Joy Rd, Seven Mile, and Bates sewers which is being funded by the Sewer and Interceptor Rehabilitation Program, 260200

Primary Driver: 1 - Condition

Driver Explanation:

Many of these CSO outfalls have sediment deposits that results in transportation capacity limitation.Many have other O&M and Structural deficiencies

CIP Number: 260510

Project Title: Conveyance System Repairs (Outfalls)

Scoring

Project Manager Weighted Score: 64.80

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260510

Project Title: Conveyance System Repairs (Outfalls)

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 8/4/2019

End Date: 6/30/2027

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$333	$0	$0	$57	$46	$46	$46	$46	$46	$230	$46

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/4/2019	6/30/2027

CIP Number: 260510

Project Title: Conveyance System Repairs (Outfalls)

Phase: TBD / Future Allocation / General Holding TBD

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 7/1/2020

End Date: 6/30/2027

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding TBD	$48,530	$0	$0	$500	$7,664	$7,664	$7,682	$7,664	$9,194	$39,866	$8,164

Phase Dates

Activity Name	Start Date	End Date
Design/Engineering	7/1/2020	6/30/2027
Construction	7/1/2021	6/30/2027

CIP Number: 260510

Project Title: Conveyance System Repairs (Outfalls)

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

CIP

Description of CIP Changes:

NA. New CIP

CIP Number: 260600

Project Title: CSO FACILITIES IMPROVEMENT PROGRAM

Project Status: Future Planned - Ten-Year CIP

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Conner Creek CSO Facility

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Conner Creek, Seven Mile, Puritan-Fenkell, Hubble-Southfield, Belle Isle, Oakwood CSO Basins, Baby Creek, Leib and St. Aubin Screening and Disinfection Facilities

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

This program is being established to facilitate the study, design, construction administration, and construction of improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

Scope of Work/Project Alternatives:

This program is established to fund projects which may pop up in the near term of each fiscal year that were not budgeted for previously. Scope of work will vary from roof replacement, to equipment replacement, to various other facility improvements.

Other Important Info:

N/A

Primary Driver: Varies

Driver Explanation:

Driver will be based on need of each individual project which falls within the program.

CIP Number: 260600

Project Title: CSO FACILITIES IMPROVEMENT PROGRAM

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Not needed, CIP Program
Performance (Service Level/Reliability)	1	Not needed, CIP Program
Regulatory (Environmental/Legal)	1	Not needed, CIP Program
Operations and Maintenance	1	Not needed, CIP Program
Public Health and Safety	1	Not needed, CIP Program
Public Benefit	1	Not needed, CIP Program
Financial	1	Not needed, CIP Program
Efficiency and Innovation	1	Not needed, CIP Program

Risk Committee Weighted Score: 0.00

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

CIP Number: 260600

Project Title: CSO FACILITIES IMPROVEMENT PROGRAM

Phase: TBD / Future Allocation / General Holding # 1

Phase Title: TBD / Future Allocation / General Holding # 1

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 7/1/2020

End Date: 6/30/2038

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
TBD / Future Allocation / General Holding # 1	$127,000	$0	$0	$1,500	$1,000	$1,500	$2,000	$7,500	$12,000	$24,000	$101,500

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/1/2020	6/30/2038
Construction Assistance - Project Execution	7/1/2020	6/30/2038
Design-Build - Project Execution	7/1/2020	6/30/2038
Construction - Project Execution	7/1/2020	6/30/2038

CIP Number: 260600

Project Title: CSO FACILITIES IMPROVEMENT PROGRAM

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
2018	$28,457	$3,428	$2,247	$6,400	$9,000	$7,200	$3,610	$0	$0	$0	$0	$31,885
2019	$31,548	$764	$1,658	$9,277	$6,218	$2,351	$4,351	$9,351	$11,251	$0	$0	$45,221
2020	$39,668	$0	$481	$8,442	$5,604	$4,553	$5,825	$10,325	$13,361	$15,000	$0	$63,591
2021	$53,396	$0	$0	$6,742	$7,555	$7,492	$10,289	$10,576	$4,759	$20,280	$85,250	$152,943

Description of CIP Changes:

260601 - CON-254 - Created new phase, $555K contractors bid, estimated spend based on contractors tentative schedule.
260602 - Created new phase, moved $980K from TBD to this project - CSO Fire Alarm Improvements.
260603 - CON-234, Updated FY costs based on actual contractors bid and potential change order to replace influent meters @ Conner Creek. This contract was bid in February 2018, awarded in 6/2018, and given the schedule, the Contractor will not complete work in FY19 as previously thought when it was bid.
260604 - Created new phase, shifted $355K from TBD to this project - Baby Creek Influent Area Improvements
260605 - Created new phase, $4.5M Budget for CSO Facilities Assessment Project
260606- Created new phase, moved $300K from TBD to this project - Puritan Fenkell Roof Replacement.
260607 - Created new phase, costs are $700K split over FY19 and FY20, FY19 from TBD- Leib Electrical Improvements Contract

TBD - Created new phase, Costs are estimated @ $300K, 7 Mile Roof Replacement Project
TBD - Created new phase, Costs are estimated @ $650K, Leib SDF HVAC Improvements Project
TBD - Created new phase, Costs are estimated @ $150K, Baby Creek MAU Replacement - I&E funded.
TBD - Created new phase, Costs are estimated @ 650K, Baby Creek HVAC System Improvements - expands on the project to only replace the MAUs.
TBD - Created new phase, Costs are estimated @ $400K, 7 Mile Parking lot, and Site Improvements Project
TBD - Created new phase, Costs are estimated @ $11M, CSO Facilities Structural Improvements Design Build (based on Task CS-166 - Task C.05).

Modified the TBD allowance category for immediate years as projects become clearer. As previously indicated, this amount will steadily decrease as projects are defined, and will likely be removed once the CSO Assessment Project is completed.

UPDATES IN 7-2019

260605 - CS-299 CSO Facilities Assessment Project was removed from CIP. It is O&M and I&E funded because it is more of a study than a CIP project. It will lead to CIP projects and we can come back and capitalize it later if we so desire.

260610 - Baby Creek MAU Replacement project. Award was later than anticipated and equipment had 16 week lead time which led to funding being shifted from FY19 to FY20.
260612 - Puritan Fenkell & Seven Mile Instrumentation Project. This is to account for a CIP number that doesn't appear within the database but did exist briefly before we determined that this project was more appropriately funded from O&M. The CIP number had already been used in BigTime and so the decision was made to just assign the next project with the next CIP number Higher (260613).
260614 - CS-166 Task C.05 - Structural Improvements Project. In 2019 CIP this project was pushed back in the CIP to accommodate Conner/Freud impacts to the CIP budget. Due to lower than expected CIP spend, this project was pulled back forward for the 2020 CIP version to start in FY 20 (late FY 20 and carry through FY 24).

CIP Number: 260600

Project Title: CSO FACILITIES IMPROVEMENT PROGRAM

Added the following new projects
260616 - Baby Creek CSO Anchor and Wedge Improvement to West End Sewer
260617 - St. Aubin Screening and Disinfection Improvements
260618 - Oakwood HVAC Improvements.
Updated the unallocated amounts to account for CS-299 projects and also long term CSO control elements and cross-checked with AECOM for estimates.
08/2020
This year the structure of the CIP database was changed. All previous projects that were in the program previously have been pulled out and documented similar to non-program CIP projects.
260619 - CAFR group added a project by Chris VanPoppelen for controls to PF, St. Aubin and Leib to the program.
260620 - added roof replacement of Baby Creek to the program.

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Project Status: Pending Closeout

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Leaking Conduit in Drain Vault

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Oakwood CSO

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Water infiltration through electrical conduits has caused cascading failures of vault valves, electrical and controls equipment. This has resulted in manual operation which creates difficulties operating and safety issues for continual access to this space (it's a deep vault).

Scope of Work/Project Alternatives:

This project will replace all electrical conduits that are compromised, valves, actuators, controls, sump pumps, and other items damaged from the vault flooding.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

Conduit has failed and is allowing infiltration and causing a series of cascading failures of other systems in the vaults.

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 6/18/2018

End Date: 6/11/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source: Blue Sky Adventures!

Cost Est. Prepared By: imaginary numbers!

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$118	$103	$103	$15	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/18/2018	6/11/2020

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Phase: Design # 1

Phase Title: Construction Assistance

Phase Budget: Wastewater
Phase Status: Pending Close-out
Cost Allocation: CSO 83/17
Funding Source: Bond Proceeds

Start Date: 12/16/2019
End Date: 6/11/2020
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Establishes costs for assistance by designer for construction related items.

Cost Est. Class: Class 1
Cost Est. Date: 8/3/2018
Cost Est. Source: Bid
Cost Est. Prepared By: BID

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

	Total Costs	Actual Costs	Prior FYs
Design # 1	$21	$21	$21

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	12/16/2019	6/11/2020

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Phase: Construction Assistance # 1

Phase Title: Construction Assistanct

Phase Budget:

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 12/16/2019

End Date: 6/11/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

costs associated with WTA construction assistance.

Cost Est. Class: Class 1

Cost Est. Date: 8/18/2020

Cost Est. Source: Engineer

Cost Est. Prepared By: Engineer

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction Assistance # 1	$10	$0	$0	$10

Phase Dates

Activity Name	Start Date	End Date
Construction Assistance - Project Execution	12/16/2019	6/11/2020
Construction Assistance - Project Closeout	3/13/2020	6/11/2020

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Phase: Construction (Build) # 1

Phase Title: 260601 - Oakwood Drain Valve Improvements

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 6/18/2018

End Date: 10/24/2019

Fund: I and E/Bond

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Project is to replace a series of failed equipment in drain vaults located adjacent to the Oakwood RTB. This equipment has failed causing operations to be completely manual and difficult to manage. This project includes replacement of compromised electrical conduits which leak groundwater into the vault, as well as new sump pumps and controls for the equipment. Project was extended to allow for replacement of drain vault valves which had been discovered to have failed. Valve replacement completed in July 2020 - after much delay from COVID-19.

Cost Est. Class: Class 1

Cost Est. Date: 7/31/2019

Cost Est. Source: Contractor Bid

Cost Est. Prepared By: Contractor

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$715	$557	$557	$158	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	6/18/2018	10/24/2019
Construction - Closeout	10/24/2019	10/24/2019

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

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

CIP

Description of CIP Changes:

7/22/2019: This project is nearly completed. It will be closed out in the next month or two.
7-16-2020 - Project was extended (time-wise, and budget-wise) to allow for replacement of drain valves which were discovered to all have failed seals during the testing of the newly constructed work. Budget and schedule adjusted.

CIP Number: 260602

Project Title: CSO Fire Alarm Improvement Project

Project Status: Closed

CIP Type: Project

Class Lvl 1: Wastewater

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)**

Seven Mile Failed and Outdated Fire Panel

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 5/9/2018

Year Project Added to CIP: 2018

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: ALL CSO Facilities

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Project is to upgrade or replace the fire alarm panels at all CSO Facilities except Oakwood RTB. Oakwood is just receiving some repairs to get the system functional and to meet the standards set forth with the current system.

Scope of Work/Project Alternatives:

This project includes replacement/upgrading all CSO Fire Alarms to a standardized Johnson Controls (Simplex) Fire Alarm System. Eight of the CSO Facilities include replacement. The one facility in which the panel is not being replaced and only minor system repairs are occurring is Oakwood. The Oakwood panel is already the latest fire control panel system.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

All fire alarm systems were essentially failed.

CIP Number: 260602

Project Title: CSO Fire Alarm Improvement Project

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not needed.
Performance (Service Level/Reliability)	1	Under a program not needed.
Regulatory (Environmental/Legal)	1	Under a program not needed.
Operations and Maintenance	1	Under a program not needed.
Public Health and Safety	1	Under a program not needed.
Public Benefit	1	Under a program not needed.
Financial	1	Under a program not needed.
Efficiency and Innovation	1	Under a program not needed.

CIP Number: 260602

Project Title: CSO Fire Alarm Improvement Project

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 5/9/2018

End Date: 12/31/2019

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$53	$53	$53	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	5/9/2018	12/31/2019

CIP Number: 260602

Project Title: CSO Fire Alarm Improvement Project

Phase: Design-Build # 1

Phase Title: Design-Build # 1

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 5/9/2018

End Date: 12/31/2019

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	$944	$944	$944	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design-Build - Project Execution	5/9/2018	10/1/2019
Design-Build - Closeout	10/1/2019	12/31/2019
Construction - Project Execution	5/9/2018	10/1/2019
Construction - Closeout	10/1/2019	12/31/2019

CIP Number: 260602

Project Title: CSO Fire Alarm Improvement Project

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

CIP

Description of CIP Changes:

None, closing out in this CIP

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Effluent Relief Gate Repair

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Conner Creek

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Effluent gates were leaking with river water in the basin. Based on CS-116 study, seals and seats of some of Effluent Relief gates found to be damaged. A data network style connection was used (versus hardwired) between the gates and the SCADA system. This network has been unreliable and difficult to maintain. Electrical and control cables were compromised due to their installation on the top of the concrete slab of RTB roof.

Scope of Work/Project Alternatives:

Scope work includes but not limited to replacement of existing seals and seats of effluent relief gates (ERGs) and effluent launder gates (ELGs), replacement and alignment of stems for ELGs, assessment and replacement of ERGs stems (based on assessment), existing pull boxes and cover replacement on top of RTB roof, existing fiber optic cable and conduit replacement, hard-wiring ELGs and ERGs actuators for reliable operation, secondary power feed for effluent gates, replacement of RIO5 and RIO6, logic modification to allow SCC control of screening gates and ERGs, etc. As part of this contract, existing five influent flowmeters will be replaced.

Other Important Info:

CS-172 has been closed out as of 09/23/19. Influent flowmeters replacement work is added as part of CCD-A and CO No. 2 of this contract.

Primary Driver: 1 - Condition

Driver Explanation:

The existing effluent gates were not reliable in operation and leaking river water in the basin. These gates, specially ERGs need to be in proper operation during wet weather event to avoid potential basement flooding in nearby neighborhood.

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 2/27/2017

End Date: 12/31/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$222	$202	$202	$20	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	2/27/2017	12/31/2020

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Phase: Design & Construction Assistance # 1

Phase Title: 260603 - CS-172 - Conner Creek CSO RTB Automation Improvements

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 7/1/2017

End Date: 9/23/2019

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

CS-172 Design Phase, moving to contruction assistance phase.

Cost Est. Class: Class 1

Cost Est. Date: 11/1/2017

Cost Est. Source: HDR - Budget

Cost Est. Prepared By: HDR

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$302	$302	$302	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	7/1/2017	9/23/2019

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Phase: Design & Construction Assistance # 2

Phase Title: 260603 - CS-116 - Rehabilitation of Conner Creek CSO RTB Effluent Launder Gates & Emergency Relief Gates

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 2/27/2017

End Date: 12/31/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

CS-116 - study, design and construction assistance.

Cost Est. Class: Class 1

Cost Est. Date: 2/27/2017

Cost Est. Source: Engineer's proposal

Cost Est. Prepared By: HRC

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

	Total Costs	Actual Costs	Prior FYs	FY21
Design & Construction Assistance # 2	$108	$0	$0	$108

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	2/27/2017	12/31/2020

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Phase: Construction (Build) # 1

Phase Title: 260603 - CON-234 Conner Creek Effluent Gate Improvements Project

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 6/12/2018

End Date: 12/5/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Construction for CS 116 (Package A) and CS-172 (Package B) - rehabilitation of the effluent relief and effluent launder gates, actuators, and misc. electrical improvements. This project also includes replacement of existing five influent flowmeters for Conner Creek Facility operation.

Cost Est. Class: Class 1

Cost Est. Date: 7/31/2019

Cost Est. Source: Construction Bid

Cost Est. Prepared By: Weiss

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction (Build) # 1	$7,267	$6,487	$6,487	$780

Phase Dates

Activity Name	Start Date	End Date
Construction - Project Execution	6/12/2018	12/5/2020
Construction - Closeout	9/6/2020	12/5/2020

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

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

CIP

Description of CIP Changes:

N/A

CIP Number: 260606

Project Title: Puritan Fenkell Roof Replacement

Project Status: Closed

CIP Type: Program

Class Lvl 1: Wastewater

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)**

New Metal Roof

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Puritan-Fenkell

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The facility roof leaks when it rains, the wood roof deck was fully exposed to the elements and allowed water to infiltrate the facility interior.

Scope of Work/Project Alternatives:

The Puritan Fenkell CSO roof was replaced with a metal roof with an estimated service life of >20 years. Repairs and upgrades were also made to the wood deck of the roof and the brick exterior near the roof interface to ensure the new roof remained watertight. Awnings and snow gems were included for personnel safety.

Other Important Info:

None

Primary Driver: 1 - Condition

Driver Explanation:

The facility roof leaks when it rains, the wood roof deck was fully exposed to the elements and allowed water to infiltrate the facility interior onto wooden support structures and electrical equipment.

CIP Number: 260606

Project Title: Puritan Fenkell Roof Replacement

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

CIP Number: 260606

Project Title: Puritan Fenkell Roof Replacement

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 9/1/2018

End Date: 12/30/2019

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$3	$3	$3	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/1/2018	12/30/2019

CIP Number: 260606

Project Title: Puritan Fenkell Roof Replacement

Phase: Construction (Build) # 1

Phase Title: 260606 - Puritan Fenkell Roof Replacement - Construction

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 1/31/2019

End Date: 9/1/2019

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Puritan Fenkell Roof is over 25 years old and original to the construction of the facility. The roof is leaking in many spots and requires replacement. We have decided to replace it with a metal roof instead of shingle to increase the life span of the roof.

Cost Est. Class: Class 1

Cost Est. Date: 12/18/2018

Cost Est. Source: Contractors BID

Cost Est. Prepared By: Royal Roofing

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$344	$344	$344	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	9/1/2018	12/27/2018
Construction - Project Execution	1/31/2019	9/1/2019
Construction - Closeout	10/1/2019	12/30/2019

CIP Number: 260606

Project Title: Puritan Fenkell Roof Replacement

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

CIP

Description of CIP Changes:

Updated to reflect project completion.

CIP Number: 260607

Project Title: Leib Electrical Improvements

Project Status: Closed

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Leib Electrical Improvements

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Leib CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The Leib CSO Facility electrical conduits have water intrusion which is causing failure of the end devices. Furthermore, the electrical conduit support system is regular steel and is severely corroded (risking possible catastrophic failure to all conduits if the support system fails).

Scope of Work/Project Alternatives:

Replacing conduits and equipment compromised by water infiltration into conduits. Replacing conduit support system which is severely corroded.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

Electrical conduit has water intrusion that is causing end equipment to fail and the conduit hanger support system is severely corroded and at risk of failing (allowing all conduits to collapse, causing a failure of all equipment in the basin).

CIP Number: 260607

Project Title: Leib Electrical Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under program 260600 no scoring necessary
Performance (Service Level/Reliability)	1	Under program 260600 no scoring necessary
Regulatory (Environmental/Legal)	1	Under program 260600 no scoring necessary
Operations and Maintenance	1	Under program 260600 no scoring necessary
Public Health and Safety	1	Under program 260600 no scoring necessary
Public Benefit	1	Under program 260600 no scoring necessary
Financial	1	Under program 260600 no scoring necessary
Efficiency and Innovation	1	Under program 260600 no scoring necessary

CIP Number: 260607

Project Title: Leib Electrical Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 1/1/2018

End Date: 1/31/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$57	$57	$57	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/1/2018	1/31/2020

CIP Number: 260607

Project Title: Leib Electrical Improvements

Phase: Design # 1

Phase Title: CS-287 - Engineering services

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation:

Funding Source: N/A

Start Date: 1/1/2018

End Date: 6/30/2018

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

CS-287 - S/D/CA services for the construction of this contract. This is a professional service contract funded from O&M.

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs
Design # 1	$5	$5	$5

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	1/1/2018	6/30/2018

CIP Number: 260607

Project Title: Leib Electrical Improvements

Phase: Construction (Build) # 1

Phase Title: 260607 - Leib SDF Electrical Improvements

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 2/1/2019

End Date: 1/31/2020

Fund: I and E/Bond

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Replacement of compromised electrical conduits, and equipment. Replacement of corroded pipe hanger system.

Cost Est. Class: Class 1

Cost Est. Date: 2/1/2019

Cost Est. Source: Construction Bid

Cost Est. Prepared By: MCE

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$971	$971	$971	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	10/1/2018	1/31/2019
Construction - Project Execution	2/1/2019	12/2/2019
Construction - Closeout	12/3/2019	1/31/2020

CIP Number: 260607

Project Title: Leib Electrical Improvements

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

CIP

Description of CIP Changes:

No changes, project is closed out.

CIP Number: 260608

Project Title: 7 Mile CSO Facilities - Roof Replacement

Project Status: Closed

CIP Type: Program

Class Lvl 1: Wastewater

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)**

New metal roof

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: 7 Mile CSO

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The 7 Mile roof was inspected in 2018 and determined to be at the at the end of it's service life. Water damage was occurring from leakage to the building's interior.

Scope of Work/Project Alternatives:

This project replaced the existing shingle roof with a longer lasting metal roof.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

The roof was no longer watertight. Leakage was causing the interior wood sheeting to rot and rain water was leaking onto equipment.

CIP Number: 260608

Project Title: 7 Mile CSO Facilities - Roof Replacement

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260608

Project Title: 7 Mile CSO Facilities - Roof Replacement

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 3/1/2018

End Date: 7/1/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$1	$1	$1	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	3/1/2018	7/1/2020

CIP Number: 260608

Project Title: 7 Mile CSO Facilities - Roof Replacement

Phase: Construction (Build) # 1

Phase Title: 260608 - 7 Mile CSO Facility - Roof Replacement Project

Phase Budget: Wastewater

Phase Status: Closed Out

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 3/1/2018

End Date: 7/1/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

The 7 Mile roof was inspected in 2018 and is at the end of it's life with 0 to 3 years remaining. This project will replace the existing shingle roof with a longer lasting metal roof.

Cost Est. Class: Class 1

Cost Est. Date: 5/6/2019

Cost Est. Source: Construction BID

Cost Est. Prepared By: Royal Roofing

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$511	$496	$496	$15	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	3/1/2018	2/8/2020
Construction - Procurement	1/15/2019	8/31/2019
Construction - Project Execution	7/1/2019	7/1/2020
Construction - Closeout	12/7/2019	2/8/2020
Construction - Project Allocation	3/1/2018	2/8/2020

CIP Number: 260608

Project Title: 7 Mile CSO Facilities - Roof Replacement

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

CIP

Description of CIP Changes:

7-2020 - Updated to reflect project completion and transition to closeout. Added project detail including construction photos.

CIP Number: 260609

Project Title: Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

Project Status: Pending Closeout

CIP Type: Program

Class Lvl 1: Wastewater

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)**

New Parking Lot and Hatch Work

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: 7 Mile CSO

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The 7 Mile Parking Lot is failing in many locations, traps water in many locations, and slopes towards the building directing water towards the building during rain. See scope of work for additional problems addressed by this project.

Scope of Work/Project Alternatives:

In addition to the problem statement, the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues inside of the building. The sidewalk has completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injure someone. This project will fix the parking lot, grading issues, sidewalk, and hatch, This project will also address landscaping (because of regrading) and provide landscaping which requires minimal maintenance to keep the aesthetics of the building looking good.

Other Important Info:

Rain Water is pooling near the back up generator and presents a safety hazard.

Primary Driver: 1 - Condition

Driver Explanation:

The condition of the parking lot is causing water to pool near the back up generators and is causing degradation of the foundation and exterior brick.

CIP Number: 260609

Project Title: Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260609

Project Title: Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 4/1/2019

End Date: 9/30/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$39	$24	$24	$15	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	4/1/2019	9/30/2020

CIP Number: 260609

Project Title: Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

Phase: Construction (Build) # 1

Phase Title: 260609 - 7 Mile Parking Lot and Site Grading Improvements Project

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 4/1/2019

End Date: 9/30/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

The 7 Mile Parking Lot is failing in many locations, traps water in many locations, and slopes towards the building directing water towards the building during rain. Furthermore, the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues in side of the building. The sidewalk has completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injur someone. This project will fix the parking lot, grading issues, sidewalk, and hatch. This project will also address landscaping (because of regrading) and provide landscaping which requires minimal maintenance to keep the aesthetics of the building looking good.

Cost Est. Class: Class 1

Cost Est. Date: 7/3/2019

Cost Est. Source: Contractor BID

Cost Est. Prepared By: Lasalle

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction (Build) # 1	$377	$346	$346	$32

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	6/1/2020	9/30/2020
Construction - Procurement	5/1/2019	9/5/2019
Construction - Project Execution	9/6/2019	7/31/2020
Construction - Closeout	5/2/2020	7/31/2020
Construction - Project Allocation	4/1/2019	4/30/2019

CIP Number: 260609

Project Title: Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

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

CIP

Description of CIP Changes:

7-2020 - Updated to reflect current project status.

CIP Number: 260610

Project Title: Baby Creek SDF - HV Units Replacement

Project Status: Pending Closeout

CIP Type: Program

Class Lvl 1: Wastewater

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)**

New Air Handling Unit

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Baby Creek CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Replace Make Up Air Units at Baby Creek as they are past their life and non-efficient due to their installation orientation.

Scope of Work/Project Alternatives:

Replacing existing make up air units with a newly designed unit to increase air flow to the space as well as increase temperature control in the screening area.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

Existing units were old and non-efficient to provide enough air flow to the screening area.

CIP Number: 260610

Project Title: Baby Creek SDF - HV Units Replacement

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260610

Project Title: Baby Creek SDF - HV Units Replacement

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 12/31/2018

End Date: 3/10/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$12	$12	$12	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/31/2018	3/10/2020

CIP Number: 260610

Project Title: Baby Creek SDF - HV Units Replacement

Phase: Construction (Build) # 1

Phase Title: 260610 - Baby Creek SDF - HV Units Replacement

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 3/11/2019

End Date: 3/10/2020

Fund: I and E/Bond

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Replace Make Up Air Units @ Baby Creek as they are past their life, and rusting out.

Cost Est. Class: Class 1

Cost Est. Date: 12/10/2018

Cost Est. Source: Construction Bid

Cost Est. Prepared By: De-Cal

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$263	$263	$263	$0	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	12/31/2018	3/10/2019
Construction - Project Execution	3/11/2019	9/11/2019
Construction - Closeout	9/12/2019	3/10/2020

CIP Number: 260610

Project Title: Baby Creek SDF - HV Units Replacement

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

CIP

Description of CIP Changes:

N/A

CIP Number: 260611

Project Title: Leib SDF- HVAC System Improvements

Project Status: Project Execution - Construction

CIP Type: Project

Class Lvl 1: Wastewater

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)**

Leib HVAC - Frozen Dampers

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2018

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Leib CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Many components of the Leib HVAC system have failed. These are causing ventilation issues, air quality issues, and likely are also a source of increased/accelerated corrosion of equipment in the facility. Two relief dampers on each end of the facility have been frozen and not in operation.

Scope of Work/Project Alternatives:

The scope of work includes but not limited to replacement of 60" damper with access door in thee basin, replacement of relief air dampers and actuators on existing louvers at both end of the facility, provide new HVAC DDC system, etc.

Other Important Info:

CO No.1 was issued in 03/2020 due to GLWA's denial of Decima as their subcontractor. Additional amount of $100,962 and time extension was added to this project as part of CO No. 1.

Primary Driver: 1 - Condition

Driver Explanation:

Some of existing HVAC equipment are not in operable condition and out of their service life. These equipment need replacement to provide proper air flow within the facility to eliminate condensation issue. A new DDC system will be installed as part of this project.

CIP Number: 260611

Project Title: Leib SDF- HVAC System Improvements

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260611

Project Title: Leib SDF- HVAC System Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 1/31/2019

End Date: 10/17/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$50	$37	$37	$14	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	1/31/2019	10/17/2020

CIP Number: 260611

Project Title: Leib SDF- HVAC System Improvements

Phase: Construction (Build) # 1

Phase Title: 260611 - Leib SDF - HVAC System Improvements

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 6/17/2019

End Date: 10/17/2020

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Existing HVAC system has been compromised with non-functional dampers, DDC system and need a replacement. Also, there is no existing temp sensor in the basin to monitor the temp.

Cost Est. Class: Class 1

Cost Est. Date: 6/17/2019

Cost Est. Source: Construction Bid

Cost Est. Prepared By: LGC

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$345	$59	$59	$286	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/31/2019	6/17/2019
Construction - Project Execution	6/17/2019	10/17/2020
Construction - Closeout	7/19/2020	10/17/2020

CIP Number: 260611

Project Title: Leib SDF- HVAC System Improvements

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

CIP

Description of CIP Changes:

N/A

CIP Number: 260613

Project Title: Baby Creek HVAC Improvements

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Existing Dampers

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Baby Creek CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

This project expands on the MAU replacement project by addressing other HVAC issues through out the facility, such as control building, screening building, etc.

Scope of Work/Project Alternatives:

The scope of work includes but not limited to modifications to ventilation system in the Electrical room, replacement of dampers and actuators in the screening building, replacement of actuators for dampers in chem room, installation of temp sensors throughout control buildings, installation of new DDC system.

Other Important Info:

N/A

Primary Driver: 2 - Performance

Driver Explanation:

To improve HVAC performance and air quality in head-work area as well as control building.

CIP Number: 260613

Project Title: Baby Creek HVAC Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260613

Project Title: Baby Creek HVAC Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 7/31/2019

End Date: 1/8/2021

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
GLWA Salaries	$37	$13	$13	$24

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	7/31/2019	1/8/2021

CIP Number: 260613

Project Title: Baby Creek HVAC Improvements

Phase: Construction (Build) # 1

Phase Title: 260613 - Baby Creek SDF - HVAC System Improvements

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 1/8/2020

End Date: 1/8/2021

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This project expands on the MAU replacement project by addressing system controls throughout the facility, ventilation issues, and odor control issues.

Cost Est. Class: Class 1

Cost Est. Date: 1/8/2020

Cost Est. Source: Construction Bid

Cost Est. Prepared By: PTS

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

	Total Costs	Actual Costs	Prior FYs	FY21
Construction (Build) # 1	$551	$39	$39	$512

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	7/31/2019	1/7/2020
Construction - Project Execution	1/8/2020	1/8/2021
Construction - Closeout	10/10/2020	1/8/2021

CIP Number: 260613

Project Title: Baby Creek HVAC Improvements

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

CIP

Description of CIP Changes:

N/A

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

Project Status: Active - Procurement - Construction

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Existing Structural Condition

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Conner Creek, Seven Mile, Puritan-Fenkell, Hubble-Southfield, Belle Isle, Oakwood CSO Basins, Baby Creek, Leib and St. Aubin Screening and Disinfection Facilities

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

A partial structural condition assessment has been performed and structural improvement (types) identified and prioritized. This project will provide Design-Build service to completely inspect all CSO Facilities (above and below ground) and prioritize to be carried out over a 3-5 year period.

Scope of Work/Project Alternatives:

The scope of work includes at each of nine CSO facilities such as a complete field assessment and structural condition report, classification of recommended repairs into levels of urgency, estimating quantities and the costs of repairs, developing a three-year repair program to address high priority repairs, design and implementation of agreed upon repairs, preparation of as-built drawings and final project report, etc. The Work includes improvements to be designed, administered, and constructed by the D/B Contractor at all nine CSO facilities.

Other Important Info:

Consideration of Shared Service Agreement with DWSD regarding the costing for Belle Isle facility.

Primary Driver: 1 - Condition

Driver Explanation:

CSO Facilities are on average of 16 years old. They are in need of some repairs throughout to keep them operating reliable and safe for the future. An initial partial structural inspection of these CSO Facilities was conducted through a separate contract, which had identified various improvements needed at each facility to ensure reliability and resiliency of continuous operation of CSO facilities for the next 20 -years.

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Active - Procurement - Board Approved

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 11/1/2018

End Date: 12/31/2024

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$130	$20	$20	$22	$22	$22	$22	$22	$0	$88	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/1/2018	12/31/2024
Capital Delivery Salary	11/1/2018	12/31/2024

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

Phase: Construction Assistance

Phase Title: CS-166 - Task D.11 - CA services

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 10/2/2020

End Date: 12/31/2024

Fund: Construction Bond Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

CA services during the progression of D/B contract.

Cost Est. Class: Class 1

Cost Est. Date: 10/12/2019

Cost Est. Source: Engineer's proposal

Cost Est. Prepared By: PMA

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	5 Year Total
Construction Assistance	$1,325	$0	$0	$275	$400	$350	$175	$125	$1,050

Phase Dates

Activity Name	Start Date	End Date
Construction Assistance - Project Execution	10/2/2020	12/31/2024
Construction Assistance - Project Closeout	10/2/2024	12/31/2024

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

Phase: Design-Build # 1

Phase Title: 260614 - CSO Facilities - Structural Improvements Project (CS-166 - Task C.05)

Phase Budget: Wastewater

Phase Status: Active - Procurement - Board Approved

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 11/1/2018

End Date: 12/31/2024

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

A partial structural condition assessment has been performed and structural improvement (types) identified and prioritized. This project will provie Design-Build services to completely inspect all CSO Facilities (above and below ground) and prioritize repairs to be carried out over a 3-5 year period.

Cost Est. Class: Class 1

Cost Est. Date: 8/5/2020

Cost Est. Source: Construction Bid

Cost Est. Prepared By: Pullman

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design-Build # 1	$12,339	$283	$283	$2,750	$4,000	$3,500	$1,200	$605	$0	$9,305	$0

Phase Dates

Activity Name	Start Date	End Date
Design-Build - Project Execution	6/1/2020	6/30/2020
Design-Build - Pre-Procurement	6/1/2020	6/30/2020
Design-Build - Closeout	6/1/2020	6/30/2020
Design-Build - Procurement	6/1/2020	6/30/2020
Construction - Pre-Procurement	11/1/2018	10/11/2019
Construction - Procurement	10/12/2019	10/1/2020
Construction - Project Execution	10/2/2020	12/31/2024
Construction - Closeout	10/2/2024	12/31/2024

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

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

CIP

Description of CIP Changes:

This project was previously pushed back 2 fiscal years (in the 2019 version of the CIP) and then pulled forward in the 2020 version to increase CIP spend in Wastewater.

CIP Number: 260615

Project Title: Puritan Fenkell & Leib Site Improvements

Project Status: Project Execution - Construction

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Poor Drainage at Leib

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Puritan-Fenkell and Leib CSO Facilities

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

There is an existing site drainage at both of these facilities creating standing water on top of basin. There is no lighting at the outfall at PF, which is needed for operation at nighttime during an event. The existing sidewalks at both of these facilities are damaged and need replacement. The perimeter fencing at PF is damaged at various spots and there is no fence at the outfall area to secure the facility from outsiders. At Leib, the existing ornamental fence at the entrance is damaged and need replacement.

Scope of Work/Project Alternatives:

The scope of work includes but not limited to creating positive drainage, installation of trench drains as well as replacement of existing side walks at both facilities. Additionally, at PF, the scope includes installation of pathway and lighting at outfall, perimeter fence replacement, etc. At Leib, the scope also includes the replacement of ornamental fence, and brick pavers, etc.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

Creating positive drainage at both of these facilities to eliminate possible condensation and infiltration inside the basin.

CIP Number: 260615

Project Title: Puritan Fenkell & Leib Site Improvements

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260615

Project Title: Puritan Fenkell & Leib Site Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 11/1/2018

End Date: 6/30/2022

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$97	$12	$12	$42	$42	$0	$0	$0	$0	$42	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/1/2018	6/30/2022

CIP Number: 260615

Project Title: Puritan Fenkell & Leib Site Improvements

Phase: Design-Build # 1

Phase Title: 260615 - Construction of Site Improvments to Leib and Puritan Fenkell

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 11/1/2018

End Date: 6/30/2022

Fund: I and E/Bond

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Constructing site improvements to Leib SDF and Puritan Fenkell facilities for drainage, site lighting, and sidewalks.

Cost Est. Class: Class 1

Cost Est. Date: 12/20/2019

Cost Est. Source: Construction Bid

Cost Est. Prepared By: DMC

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
Design-Build # 1	$704	$97	$97	$450	$157	$157

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	11/1/2018	6/30/2022
Construction - Pre-Procurement	2/15/2019	8/26/2019
Construction - Procurement	8/27/2019	12/19/2019
Construction - Project Execution	12/20/2019	6/30/2022
Construction - Closeout	4/1/2022	6/30/2022

CIP Number: 260615

Project Title: Puritan Fenkell & Leib Site Improvements

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

CIP

Description of CIP Changes:

N/A

CIP Number: 260616

Project Title: Baby Creek Towards Treatment Sewer Improvements

Project Status: Pending Closeout

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Installed Bracket

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Baby Creek

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The West End Sewer inside the Baby Creek CSO Effluent Channel is supported by concrete anchors and support wedges.

Scope of Work/Project Alternatives:

These supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years. The project seeks to refurbish pipe support anchors and wedges.

Other Important Info:

N/A

Primary Driver: 5 - Public Health and Safety

Driver Explanation:

Sewer supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years.

CIP Number: 260616

Project Title: Baby Creek Towards Treatment Sewer Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260616

Project Title: Baby Creek Towards Treatment Sewer Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Pending Close-out

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 6/3/2019

End Date: 9/6/2020

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$38	$22	$22	$16	$0	$0	$0	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	6/3/2019	9/6/2020

CIP Number: 260616

Project Title: Baby Creek Towards Treatment Sewer Improvements

Phase: Design-Build # 1

Phase Title: 260616 - Baby Creek Piping Improvements Construction

Phase Budget: Wastewater
Phase Status: Pending Close-out
Cost Allocation: CSO 83/17
Funding Source: Bond Proceeds

Start Date: 4/12/2020
End Date: 9/6/2020
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
The West End Sewer inside the Baby Creek CSO Effluent Channel is supported by concrete anchors and support wedges. These supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years. The project seeks to refurbish pipe support anchors and wedges.

Cost Est. Class: Class 1
Cost Est. Date: 7/22/2019
Cost Est. Source: Contractor Bid
Cost Est. Prepared By: Marra

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

	Total Costs	Actual Costs	Prior FYs	FY21
Design-Build # 1	$745	$645	$645	$100

Phase Dates

Activity Name	Start Date	End Date
Construction - Pre-Procurement	6/3/2019	9/15/2019
Construction - Procurement	9/15/2019	4/12/2020
Construction - Project Execution	4/12/2020	9/6/2020
Construction - Closeout	6/8/2020	9/6/2020

CIP Number: 260616

Project Title: Baby Creek Towards Treatment Sewer Improvements

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

CIP

Description of CIP Changes:

7-2020 - Pulled out from program as project still in the program.

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Project Status: Active - Pre-Procurement - Design

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Existing Screens

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: St. Aubin CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The St. Aubin CSO facility is nearly 20 years old. A study was conducted on the disinfection system and the screens were assessed by the manufacturer through a separate contract, and recommendations resulted in needed upgrade of these systems to restore operational control, flexibility, and reliability. The current pumping system for NaOCl is oversize (dose of 38 mg/L) when only 10 mg/l is required based on sampling study. The over-sized system makes it difficult to dial the pumps down on the low end (where most events are) and properly disinfect (without over-dosing) the flow. As a result, operators tend to turn pumps on and off to meet permit limits. This is not the best for the equipment, water quality, or operations. Furthermore, the screens get blinded during the event, and because of that the rake mechanism trips out.

Scope of Work/Project Alternatives:

The scope of work includes but not limited to replacement of existing chem feed pumps with better pump technology to meet the need for this facility, modification on chem feed piping system and control, installation of overhead trolley for maintenance, relining the chem storage tanks to extend the life of existing tanks, replacing evaluating different screening technologies if applicable, if not, replacing control system and hydraulic power-pack of existing screens, installing new screen flushing sprayer system, replace existing HVAC with DDC system, upgrade and install new hatches at the facility and at the outfall, install new pre-fabricated storage building, etc.

Other Important Info:

Previous study was performed by Hazen and Sawyer. AECOM/DLZ is working to provide a study BOD and 20% Design documents.

Primary Driver: 2 - Performance

Driver Explanation:

The existing chem feed system is very complicated to adjust the desire dosing for the flow coming to this facility. Existing pumps are not capable to dose and meet the permit requirement at the same time for smaller size rain event. Also, during the rain event, screens get blinded very frequently and nullify the purpose of screening since the flow overpass the screens.

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program scoring not necessary
Performance (Service Level/Reliability)	1	Under a program scoring not necessary
Regulatory (Environmental/Legal)	1	Under a program scoring not necessary
Operations and Maintenance	1	Under a program scoring not necessary
Public Health and Safety	1	Under a program scoring not necessary
Public Benefit	1	Under a program scoring not necessary
Financial	1	Under a program scoring not necessary
Efficiency and Innovation	1	Under a program scoring not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program scoring not necessary
Performance (Service Level/Reliability)	1	Under a program scoring not necessary
Regulatory (Environmental/Legal)	1	Under a program scoring not necessary
Operations and Maintenance	1	Under a program scoring not necessary
Public Health and Safety	1	Under a program scoring not necessary
Public Benefit	1	Under a program scoring not necessary
Financial	1	Under a program scoring not necessary
Efficiency and Innovation	1	Under a program scoring not necessary

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 9/15/2019

End Date: 8/24/2025

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$576	$201	$201	$148	$57	$57	$47	$46	$19	$227

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	9/15/2019	8/24/2025
Capital Delivery Salary	9/15/2019	8/24/2025

Phase: Study & Design & Construction Assistance # 1

Phase Title: 260617 - St. Aubin Screening & Chemical System Improvements (Design Services)

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Phase Budget:	Wastewater	**Start Date:**	9/15/2019
Phase Status:	Project Execution	**End Date:**	8/24/2025
Cost Allocation:	CSO 83/17	**Fund:**	Construction Bond Fund
Funding Source:	Bond Proceeds	**Usefull Life > Yrs:**	Yes
		Tot. Federal Loan Amout:	$0.00

Phase Comments/Description:

The St. Aubin SDF is nearly 20 years old. A study was conducted on the disinfection system and the screens were assessed by the manufacturer and recommendations resulted in upgrade of these systems to restore operational control, flexibility, and reliability. The current pumping system for NaOCl is over-sized (dose of 38 mg/L - when only 10 mg/L is required from sampling). The over-sized system makes it difficult to dial the pumps down on the low end (where most events are) and properly dose (without over-dosing) the water. As a result, operators tend to turn them on and off (plug flow), to meet permit limits. This is not the best for the equipment, water quality, or operations. Furthermore, the screens currently get blinded and then the rake mechanism trips out. There is a new control system for these screens offered by the manufacturer that would allow us to upgrade the controls of the screen and reduce it fully tripping out so that it will continue to rake parts of the screen during an event rather than tripping out and raking none of the scree. This phase endeavors to further evaluate this, design improvements, offer CA, and then bid out for construction. This phase will also provide construction assistance during construction (shop drawing review, as needed inspection, rfi response, attending progress meetings, etc.)

Cost Est. Class: Class 5	**Cost Est. Source:** CSO Manager
Cost Est. Date: 7/24/2019	**Cost Est. Prepared By:** CSO Manager

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
Study & Design & Construction Assistance # 1	$1,391	$50	$50	$295	$330	$180	$162	$262	$112	$1,046

Phase Dates

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Activity Name	Start Date	End Date
Study - Project Execution	9/15/2019	10/31/2020
Design - Procurement	9/30/2020	5/28/2021
Design - Project Execution	5/29/2021	11/27/2022
Design - Closeout	8/29/2022	11/27/2022
Construction Assistance - Project Execution	8/25/2023	8/24/2025
Construction Assistance - Closeout	5/26/2025	8/24/2025
Design-Build/Other	6/1/2020	6/30/2020

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Phase: Construction (Build) # 1

Phase Title: 260617 - St. Aubin Screening & Chemical System Improvements (Construction Services)

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 8/25/2023

End Date: 8/24/2025

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This phase will construct improvements designed for the chemical disinfection and screening systems at St. Aubin in the S/D/CA phase.

Cost Est. Class: Class 5

Cost Est. Date: 7/24/2019

Cost Est. Source: CSO Manager

Cost Est. Prepared By: CsO Manager

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
Construction (Build) # 1	$5,000	$0	$0	$0	$0	$0	$1,500	$2,500	$1,000	$5,000

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	2/25/2023	8/24/2023
Construction - Project Execution	8/25/2023	8/24/2025
Construction - Closeout	5/26/2025	8/24/2025

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

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

CIP

Description of CIP Changes:

2019-08 - added to the CIP.
2020-07 - Updated from last year (scope, cost, schedule)

CIP Number: 260618

Project Title: Oakwood HVAC Project

Project Status: Project Execution - Design

CIP Type: Program

Class Lvl 1: Wastewater

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)**

Coroded building crane from failed HVAC system

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Oakwood CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

Heavy corrosion and the gas detection system in the sanitary pump room is constantly going off causing operators to leave the overhead door open to keep the space ventilated and safe to enter. As a result of this, the door is left open nearly year round. HVAC system pulls gases from the sewer as currently operated. The wet-well supply fans have failed functionally and this is also resulting in heavy corrosion in the sanitary pump room.

Scope of Work/Project Alternatives:

The Odor Control unit intake will be reconfigured, various supply and exhaust fans will be replaced, access for the odor control units will be made for all three units to facilitate proper maintenance. The crane and building structural steel will be assessed and re-coated to ensure proper life.

Other Important Info:

This project design is under way by Hazen.

Primary Driver: 1 - Condition

Driver Explanation:

The HVAC system had functionally failed to perform. This is resulting in cascading failures of other building systems (i.e. pipes freezing because doors are left open, structural steel corroding, gas system failing, etc.).

CIP Number: 260618

Project Title: Oakwood HVAC Project

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

Risk Committee Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Under a program not necessary
Performance (Service Level/Reliability)	1	Under a program not necessary
Regulatory (Environmental/Legal)	1	Under a program not necessary
Operations and Maintenance	1	Under a program not necessary
Public Health and Safety	1	Under a program not necessary
Public Benefit	1	Under a program not necessary
Financial	1	Under a program not necessary
Efficiency and Innovation	1	Under a program not necessary

CIP Number: 260618

Project Title: Oakwood HVAC Project

Phase: GLWA Salaries

Phase Title: General - GLWA Salaries

Phase Budget: Wastewater

Phase Status: Project Execution

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 12/15/2019

End Date: 6/30/2022

Fund: Improvement and Extension Fund

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class: Class 5

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
GLWA Salaries	$338	$76	$76	$162	$90	$11	$100

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	12/15/2019	6/30/2022
Capital Delivery Salary	12/15/2019	6/30/2022

Phase: Study & Design & Construction Assistance # 1

Phase Title: 260618 - Oakwood CSO Facility HVAC Improvements Project (Design Services)

CIP Number: 260618

Project Title: Oakwood HVAC Project

Phase Budget:	Wastewater	**Start Date:**	12/15/2019
Phase Status:	Future Planned Start	**End Date:**	6/24/2022
Cost Allocation:	CSO 83/17	**Fund:**	Construction Bond Fund
Funding Source:	Bond Proceeds	**Usefull Life > Yrs:**	Yes
		Tot. Federal Loan Amout:	$0.00

Phase Comments/Description:

A study was completed in January of 2019 to evaluate the Sanitary Pumping and Storm Pumping systems at Oakwood CSO RTB. In the sanitary pump room, there is heavy corrosion and the gas detection system is constantly going off causing operators to leave the overhead door open to keep the space ventilated and safe to enter. As a result of this, the door is left open nearly year round. This practice led to freezing of the fire sprinkler system in January of 2019 and resulted in repair work to fix the sprinkler lines that were damaged. The study conducted in January of 2019 concluded that the ventilation system (supply and exhaust) for the wet-well and sanitary pumping room is inadequate. Currently the combination of exhaust fans and odor control system pull too much air from the wet-well (more than the supply fans put in) and have created a negative air pressure where we are constantly drawing air from the sewer (wetwell) into the sanitary pump room air space. This is causing the gas and corrosion issues and requires resolution. The HVAC exhaust/supply fans are currently entombed in a small area at the facility and are difficult to service or replace. This project will examine equipment access as well as a balanced air for the space. The fans also have some significant corrosion to them and may require complete replacement. This project will also cover construction assistance during construction for RFI's, submittal review, progress meetings, etc.

Cost Est. Class: Class 1	**Cost Est. Source:** Bid
Cost Est. Date: 6/29/2020	**Cost Est. Prepared By:** Hazen

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Study & Design & Construction Assistance # 1	$729	$0	$0	$478	$246	$6	$252

Phase Dates

CIP Number: 260618

Project Title: Oakwood HVAC Project

Activity Name	Start Date	End Date
Study - Project Execution	12/15/2019	6/30/2020
Design - Procurement	4/13/2020	6/30/2020
Design - Project Execution	6/29/2020	12/26/2020
Design - Closeout	4/1/2022	6/30/2022
Construction Assistance - Project Execution	6/24/2021	6/24/2022
Design-Build (Other) - Project Execution	6/29/2020	6/24/2022
Design-Build (Other) - Closeout	3/26/2022	6/24/2022

CIP Number: 260618

Project Title: Oakwood HVAC Project

Phase: Construction (Build) # 1

Phase Title: 260618 - Oakwood CSO Facility HVAC Improvements Project (Construction Services)

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 6/24/2021

End Date: 6/24/2022

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
This phase will construct improvements designed during the design services phase of this project.

Cost Est. Class: Class 4

Cost Est. Date: 7/23/2019

Cost Est. Source: AECOM/DLZ

Cost Est. Prepared By: Zach Alderman

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
Construction (Build) # 1	$2,900	$0	$0	$0	$2,900	$0	$2,900

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2021	6/30/2021
Construction - Project Execution	6/24/2021	6/24/2022
Construction - Closeout	3/26/2022	6/24/2022

CIP Number: 260618

Project Title: Oakwood HVAC Project

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

CIP

Description of CIP Changes:

2019-08 - added to program
2020-07 - updated project schedule, cost, scope

CIP Number: 260619

Project Title: Control System Upgrade - St Aubin, Lieb & Mile

Project Status: Project Execution - Design

CIP Type: Project

Class Lvl 1: Wastewater

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: Christopher Vanpoppelen

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/27/2016

Year Project Added to CIP: 2017

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Conner Creek, Seven Mile, Puritan-Fenkell, Hubble-Southfield, Belle Isle, Oakwood CSO Basins, Baby Creek, Leib and St. Aubin Screening and Disinfection Facilities

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

This program is being established to facilitate the study, design, construction administration, and construction of improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

Scope of Work/Project Alternatives:

This program is intended to include studies, design, construction administration, and construction projects which serve to improve process areas or functions of the CSO Facilities. The overall scope of this program is to complete the following: The CS-299 (Facilities Assessment Project) will have projects that need to be programmed into the CIP over time, Replacement of CSO Facilities Fire Alarm Systems; Structural Condition Assessment Design/Build project; and flushing improvements to Baby Creek CSO Facility. A direct product of the Needs/Condition Assessment and SRP is identification of facility needs with projects identified, prioritized, and conceptual cost estimates. From this output, RFP's will be developed to address these needs. For this purpose, Design and Construction dollars have been identified in the later years of this Program

Other Important Info:

(Replaces CIP1313).

Project History: The GLWA CSO Control Program consists of the operations of 6 CSO RTB's, and 3 Screening & Disinfection Facilities (SDF). The fundamental difference between the SDF's and the RTB's is the presence of a bonafied basin versus a large diameter, long effluent pipe/ outfall. The long outfall (SDF) functionally serves a purpose similar to the basin (RTB) in terms of storage of combined sewer overflow during a rain event. As a result, the SDF's are fundamentally more difficult to keep clean than the RTB's because flushing systems must transport settled solids (after a storm) long distances to leave the effluent pipe. The CSO Facilities average age is around 15 years with the oldest facilities being constructed in 1994 and the most recent facility being constructed in 2011. A scheduled replacement plan was completed in 2013,

to facilitate design and construction of those identified needs. It is anticipated that the primary drivers of these improvements will be obsolescence/end of service life, excessive O&M problems, reliability, efficiency and system standardization which arise from feedback from operation & maintenance, the scheduled replacement plan, and the needs/condition assessment. Following completion of the Wastewater Master Plan, new projects may be otherwise defined which will be incorporated into the CIP. These projects will likely be entered into the CIP as stand-alone projects rather than falling under this program. Furthermore, upon completion of the NPDES permit, new regulatory requirements may arise which require capital improvements. Depending on the nature of those improvements, they may be stand-alone projects or fall within the elements of this Program.

Additionaly, the latest NPDES permit as well as previous ones, given recognition to the Long Term CSO Control Plan and the requirements that outfalls which are high priority non core be addressed by 2037. Part and parcel to this is the development of a refreshed Long Term CSO Control plan to be submitted to the DEQ by 11/15/2022. The new Long Term CSO Control Plan will begin forging a path of Long Term CSO Control and will identify how GLWA will work towards addressing the requirements of the NPDES permit. The intent with the LT Plan is to construct high impact low-cost (relatively speaking) projects in years 5 through 10 of the LT Plan. Then in years 10 through 20 the more expensive improvements are expected to be made. Previous versions of the Long Term CSO Control Plan carried estimated costs of $1,000,000,000 to $2,000,000,000. While these costs are very high, and today not well defined beyond previousl LT plans, it is recognized that significant investment in CSO Control is required which is now out of date, and a high level Needs Assessment conducted in 2016, which didn't identify large scale projects or priorities based on condition other than those of emergency nature. Projects resulting from the 2016 NA were largely emergency projects in nature. A Goal of this program includes standardization of the systems utilized at each facility, as well as improving operational & maintenance conditions at each facility. Given the eras in which the facilities were constructed, and being part of demonstration projects, they have differing technology which makes maintenance and operations duties more difficult. Another goal of this program is to improve the operating conditions of facility assets to increase reliability, efficiency, and compliance with all GLWA regulatory and other levels of service.

Challenges: As this program starts off, there is a lot of design RFPs in the beginning which will lead to la refined projects aimed at improving operations, which lead to RFPs for design and large scale construction projects in the later years (3-5). A significant challenge to be faced will be maintaining the CSO facilities in current operations without the benefit of large-scale improvements of the CSO Systems. Another significant challenge of this program will be unforeseen conditions that may be encountered as facility inspections & condition assessments begin. For example, finding significant structural distress of a basin could lead to increase of budget or extension of timeline of improvements. Considering much of the equipment/systems identified for inclusion in this program are at or near obsolescence or are actively causing O&M issues, delays in improvements could possibly cause operational or compliance issues.

Primary Driver: Varies

Driver Explanation:

The chemical feed system pumps, valves, gates, dewatering and sampling pumps are old and critical

to be in compliance with the NPDES permit and therefore GLWA is attempting to begin accounting for and planning for this work in our long term financial planning for the CIP. As the Wastewater Masterplan and Long Term CSO Control Plans and CS-299 projects complete, the view of what needs to be done for existing and future CSO Facilities will become more vivid.

to the CSO RTB and SDF treatment processes meeting permit requirements.

CIP Number: 260619

Project Title: Control System Upgrade - St Aubin, Lieb & Mile

Scoring

Project Manager Weighted Score: 51.80

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 260619

Project Title: Control System Upgrade - St Aubin, Lieb & Mile

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 8/1/2019

End Date: 8/24/2025

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	5 Year Total
GLWA Salaries	$81	$62	$62	$19	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2019	8/24/2025
Capital Delivery Salary	8/1/2019	8/24/2025

Phase: Study & Design & Construction Assistance

Phase Title: Study & Design & Construction Assistance

CIP Number: 260619

Project Title: Control System Upgrade - St Aubin, Lieb & Mile

Phase Budget:		**Start Date:**	1/15/2020
Phase Status:		**End Date:**	4/15/2020
Cost Allocation:		**Fund:**	
Funding Source:		**Usefull Life > Yrs:**	No
		Tot. Federal Loan Amout:	$0.00

Phase Comments/Description:

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

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

	Total Costs	Actual Costs	Prior FYs	FY21
Study & Design & Construction Assistance	$35	$0	$0	$35

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	1/15/2020	4/15/2020
Study - Procurement	4/15/2020	6/21/2020
Study - Project Execution	6/22/2020	1/8/2021
Study - Closeout	10/10/2020	1/8/2021
Design - Pre-Procurement	8/1/2019	12/26/2020
Design - Procurement	12/27/2020	8/24/2021
Design - Project Execution	8/25/2021	8/25/2022
Design - Closeout	5/27/2022	8/25/2022
Construction Assistance - Project Execution	8/25/2022	8/24/2025
Construction Assistance - Project Closeout	5/26/2025	8/24/2025

CIP Number: 260619

Project Title: Control System Upgrade - St Aubin, Lieb & Mile

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

CIP

Description of CIP Changes:

260601 - CON-254 - Created new phase, $555K contractors bid, estimated spend based on contractors tentative schedule.
260602 - Created new phase, moved $980K from TBD to this project - CSO Fire Alarm Improvements.
260603 - CON-234, Updated FY costs based on actual contractors bid and potential change order to replace influent meters @ Conner Creek. This contract was bid in February 2018, awarded in 6/2018, and given the schedule, the Contractor will not complete work in FY19 as previously thought when it was bid.
260604 - Created new phase, shifted $355K from TBD to this project - Baby Creek Influent Area Improvements
260605 - Created new phase, $4.5M Budget for CSO Facilities Assessment Project
260606- Created new phase, moved $300K from TBD to this project - Puritan Fenkell Roof Replacement.
260607 - Created new phase, costs are $700K split over FY19 and FY20, FY19 from TBD- Leib Electrical Improvements Contract

TBD - Created new phase, Costs are estimated @ $300K, 7 Mile Roof Replacement Project
TBD - Created new phase, Costs are estimated @ $650K, Leib SDF HVAC Improvements Project
TBD - Created new phase, Costs are estimated @ $150K, Baby Creek MAU Replacement - I&E funded.
TBD - Created new phase, Costs are estimated @ 650K, Baby Creek HVAC System Improvements - expands on the project to only replace the MAUs.
TBD - Created new phase, Costs are estimated @ $400K, 7 Mile Parking lot, and Site Improvements Project
TBD - Created new phase, Costs are estimated @ $11M, CSO Facilities Structural Improvements Design Build (based on Task CS-166 - Task C.05).

Modified the TBD allowance category for immediate years as projects become clearer. As previously indicated, this amount will steadily decrease as projects are defined, and will likely be removed once the CSO Assessment Project is completed.

UPDATES IN 7-2019

260605 - CS-299 CSO Facilities Assessment Project was removed from CIP. It is O&M and I&E funded because it is more of a study than a CIP project. It will lead to CIP projects and we can come back and capitalize it later if we so desire.

260610 - Baby Creek MAU Replacement project. Award was later than anticipated and equipment had 16 week lead time which led to funding being shifted from FY19 to FY20.
260612 - Puritan Fenkell & Seven Mile Instrumentation Project. This is to account for a CIP number that doesn't appear within the database but did exist briefly before we determined that this project was more appropriately funded from O&M. The CIP number had already been used in BigTime and so the decision was made to just assign the next project with the next CIP number Higher (260613).
260614 - CS-166 Task C.05 - Structural Improvements Project. In 2019 CIP this project was pushed back in the CIP to accommodate Conner/Freud impacts to the CIP budget. Due to lower than expected CIP spend, this project was pulled back forward for the 2020 CIP version to start in FY 20 (late FY 20 and carry through FY 24).

Added the following new projects
260616 - Baby Creek CSO Anchor and Wedge Improvement to West End Sewer
2606xx - St. Aubin Screening and Disinfection Improvements
2606xx - Oakwood HVAC Improvements.
Updated the unallocated amounts to account for CS-299 projects and also long term CSO control elements and cross-checked with AECOM for estimates.

CIP Number: 260620

Project Title: Baby Creek Roof Replacement

Project Status: Active - Pre-Procurement - Construction

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Baby Creek

☑ **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)**

Improper shingle installation.

Project Engineer/Manager: Chris Nastally

Director: Navid Mehram

Managing Dept.: CSO

Date Original Business Case Prepared: 9/2/2020

Year Project Added to CIP: 2021

CIP Budget: Wastewater

Project Jurisdiction: Wayne County - Outside Detroit

Lookup Location: Baby Creek

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The Baby Creek roof leaks on electrical equipment when it rains. The laps in the shingles are sometimes as little as 2". The leaking roof over time has caused the substrate to rot and require replacement. Approximately 1/3 of the roof was previously replaced in 2017. The new portion of roof is sufficient. The remaining 2/3's of the roof is exhibiting failure per a roof inspection conducted by GLWA roofing contractor.

Scope of Work/Project Alternatives:

Replace the 2/3's of Baby Creek roof with matching asphalt shingles.

Other Important Info:

N/A

Primary Driver: 1 - Condition

Driver Explanation:

Roof shingle seams are too close allowing infiltration of water through the shingles into the substrate and eventually into the rooms below the roof.

CIP Number: 260620

Project Title: Baby Creek Roof Replacement

Scoring

Project Manager Weighted Score: 20.00

Criteria Name	Score	Comment
Condition	1	Not needed, CIP Program
Performance (Service Level/Reliability)	1	Not needed, CIP Program
Regulatory (Environmental/Legal)	1	Not needed, CIP Program
Operations and Maintenance	1	Not needed, CIP Program
Public Health and Safety	1	Not needed, CIP Program
Public Benefit	1	Not needed, CIP Program
Financial	1	Not needed, CIP Program
Efficiency and Innovation	1	Not needed, CIP Program

Risk Committee Weighted Score: 0.00

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

CIP Number: 260620

Project Title: Baby Creek Roof Replacement

Phase: TBD / Future Allocation / General Holding

Phase Title: TBD / Future Allocation / General Holding

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 6/1/2020

End Date: 6/30/2021

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21
TBD / Future Allocation / General Holding	$641	$0	$0	$641

Phase Dates

Activity Name	Start Date	End Date
Design - Project Execution	6/1/2020	6/30/2020
Construction Assistance - Project Execution	6/1/2020	6/30/2020
Construction - Project Execution	7/1/2020	6/30/2021

CIP Number: 260620

Project Title: Baby Creek Roof Replacement

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

CIP

Description of CIP Changes:

2020-09 - Added to the CIP (previously budgeted under earlier version in Unallocated)

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Multiple CSO Facilities

☐ **Project New to CIP**

☐ **Innovation**

☑ **WW Master Plan**

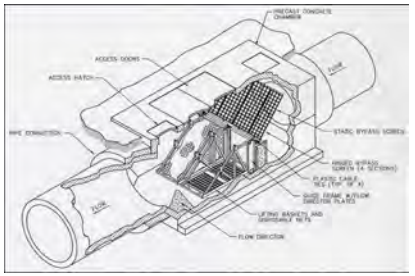
☑ **Water Master Plan Right Sizing**

☐ **Redundancy**

☐ **NE WTP Repurposing**

☐ **Linear Assets Outside of Facilities**

☐ **Predecessor Project(s)**



Netting Facility

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 8/1/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Detroit River - East Side Downtown east of Ralph C. Wilson Park.

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The First Street CSO Outfall (B-023) has been identified in the NPDES Permit for the Priority Non-Core Compliance schedule. It is also the nearest and most frequently discharging outfall upstream of the proposed Ralph C Wilson waterfront park on the Detroit River. A pilot facility to demonstrate the application of CSO outfall nets is proposed at this location to keep the sanitary trash from discharging close to this beach, and also to help minimize impacts from fecal coliform bacteria contained in CSO discharge.

Scope of Work/Project Alternatives:

Inspect the two 10-ft by 10-foot box culverts that comprise this outfall and establish a location for installing the CSO nets, considering outfall structural condition, ease of access for net removal and replacement, and maintenance vehicle parking. Construct in-line netting facility under Convention Center Drive to the west of Cobo Convention Center. Construct access point for future Total Chlorine Residual monitoring to be installed in a second phase of this project. Provide electrical and instrumentation work associated with monitoring and controlling the netting facility.

Other Important Info:

GLWA staff conducted a field inspection in 2019 of CSO outfall netting facilities constructed in Cleveland in 2004. There are different types of CSO net installations, and GLWA believes that in-line nets provide for the most efficient operation and maintenance.

Primary Driver: 3 - Regulatory

Driver Explanation:

The NPDES permit requirs GLWA to reduce untreated CSO discharge. This project is a low cost option to reduce sanitary trash and treat bacteria from untreated CSO discharges that may occur from the outfall, just upstream of the beach.

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

Scoring

Project Manager Weighted Score: 65.00

Criteria Name	Score	Comment
Condition	1	same comment as last year.
Performance (Service Level/Reliability)	5	To align with review committee scores.
Regulatory (Environmental/Legal)	5	same comment as last year.
Operations and Maintenance	1	same comment as last year.
Public Health and Safety	4	same comment as last year.
Public Benefit	4	To align with review committee scores.
Financial	1	To align with review committee scores.
Efficiency and Innovation	3	same comment as last year.

Risk Committee Weighted Score: 65.00

Criteria Name	Score	Comment
Condition	1	Scored in 2019
Performance (Service Level/Reliability)	5	Scored in 2019
Regulatory (Environmental/Legal)	5	Scored in 2019
Operations and Maintenance	1	Scored in 2019
Public Health and Safety	4	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	1	Scored in 2019
Efficiency and Innovation	3	Scored in 2019

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 8/3/2022

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$323	$0	$0	$0	$13	$57	$57	$57	$46	$231	$92

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/3/2022	6/30/2028

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

Phase: Study & Design & Construction Assistance # 1

Phase Title: Study, Design, and Construction Assistance for Pilot Netting Facility

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 7/1/2023

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

This phase is to finalize the location, type, and configuration of the pilot netting facility, acquire easements/land, complete the basis of design and design documents, and then provide construction assistance during construction.

Cost Est. Class: Class 4

Cost Est. Date: 8/1/2019

Cost Est. Source: CDM Smith (WWMP)

Cost Est. Prepared By: Carl Johnson

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

	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Study & Design & Construction Assistance # 1	$2,250	$0	$0	$0	$1,500	$50	$287	$1,837	$413

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/3/2022	11/1/2022
Design - Procurement	11/2/2022	6/30/2023
Design - Project Execution	7/1/2023	6/30/2025
Design - Closeout	4/1/2025	6/30/2025
Construction Assistance - Project Execution	7/1/2025	6/30/2027
Construction Assistance - Project Closeout	4/1/2028	6/30/2028

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

Phase: Construction (Build) # 1

Phase Title: Construction

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 7/1/2025

End Date: 6/30/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Constructing the netting facility.

Cost Est. Class: Class 4

Cost Est. Date: 7/17/2020

Cost Est. Source: CDM Smith

Cost Est. Prepared By: Carl Johnson

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$7,000	$0	$0	$0	$2,870	$2,870	$4,130

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	1/1/2025	6/30/2025
Construction - Project Execution	7/1/2025	6/30/2027
Construction - Closeout	4/1/2028	6/30/2028

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

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
2021	$6,535	$20	$86	$1,604	$318	$4,507	$1,234	$7,769

Description of CIP Changes:

2019-08 - This is a new project to the CIP being driven by recommendations from the Wastewater Masterplan Project (2019).
2020-07 - Updating for schedule & costs (only inlcuding 1 Pilot Facility in the scope at this time). 4 Pilot facilities are proposed in WWMP.

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Multiple CSO Facilities

☐ **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: 8/1/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Sewers and Interceptors

Funds and Cost Center: Wastewater - 5421-882301

Problem Statement:

The Meldrum Sewer is an uncontrolled CSO that discharges through outfall B-07. Currently, this is an untreated CSO discharge. Untreated CSO discahrges let debris from the sewer and bacteria make their way into fresh water bodies and are not good for public health or the environment. The NPDES permit requires control of this outfall to Michigan water quality standards. The Leib Screening and Disinfection Facility was designed with capacity to screen and disinfect the Meldrum Sewer CSO flow, but presently there is no way to get the flow from the Meldrum sewer to the Conant-Mt. Elliot sewer (and to Leib). This project is a high-level recommendation from the wastewater masterplan. An rfp will need to be developed that further develops the project scope necessary to achieve the desired outcome of connecting the Meldrum sewer to the Contant-Mt. Elliot sewer.

Scope of Work/Project Alternatives:

The scope of work involves connecting the Meldrum sewer to the Conant-Mt. Elliot Sewer with a diversion pipe that is 5 feet in diameter. New gates would be installed in the Meldrum sewer which direct flow through this diversion and into the Conant-Mt. Elliot sewer, which would then be processed through the Leib Screening and Disinfection Facility. These gates would allow dry weather flow to take it's normal route through the Meldrum sewer to the DRI, and would divert wet-weather to Leib SDF. This would reduce untreated CSO discharge, a requirement of the NPDES Permit.

Other Important Info:

Recommended in DWSD LTCSO Plan of 2008.

Primary Driver: 3 - Regulatory

Driver Explanation:

The NPDES permit requirs GLWA to reduce untreated CSO discharge. This project is a low cost option to accomplish this for the B-07 outfall. In addition to regulator, this results in better improved public benefit from better water quality.

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

Scoring

Project Manager Weighted Score: 56.40

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

Risk Committee Weighted Score: 62.40

Criteria Name	Score	Comment
Condition	1	Scored in 2019
Performance (Service Level/Reliability)	3	Scored in 2019
Regulatory (Environmental/Legal)	5	Scored in 2019
Operations and Maintenance	1	Scored in 2019
Public Health and Safety	4	Scored in 2019
Public Benefit	5	Scored in 2019
Financial	1	Scored in 2019
Efficiency and Innovation	4	Scored in 2019

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: TBD

Funding Source: Bond Proceeds

Start Date: 8/3/2022

End Date: 6/30/2029

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$340	$0	$0	$9	$57	$57	$55	$46	$225	$115

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/3/2022	6/30/2029

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

Phase: Design & Construction Assistance # 1

Phase Title: Design and Construction Assistance for Meldrum Diversions

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: TBD

Funding Source: Bond Proceeds

Start Date: 7/1/2023

End Date: 12/31/2027

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Phase is to complete the design, carries through procurement of construction, and then through construction time period & project closeout. Includes designing the sewer connection, and assisting during construction

Cost Est. Class: Class 4

Cost Est. Date: 8/1/2019

Cost Est. Source: CDM Smith WWMP

Cost Est. Prepared By: Carl Johnson

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

	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$1,000	$0	$0	$225	$212	$243	$680	$320

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	8/3/2022	11/1/2022
Design - Procurement	11/2/2022	6/30/2023
Design - Project Execution	7/1/2023	4/26/2025
Design - Closeout	4/1/2026	6/30/2026
Construction Assistance - Project Execution	4/27/2025	12/31/2027

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

Phase: Construction (Build) # 1

Phase Title: Construction of the Meldrum Diversion

Phase Budget: Wastewater
Phase Status: Future Planned Start
Cost Allocation: TBD
Funding Source: Bond Proceeds

Start Date: 4/27/2025
End Date: 7/4/2027
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
This phase is to execute the design project for the Meldrum Diversion to the Conant-Mt. Elliot sewer to divert untreated CSO discharge through the Leib SDF. This will result in untreated CSO discharge becoming "treated" CSO discharge. There is only recommendationsa bout scope schedule and budget from a masterplan perspective at this time.

Cost Est. Class: Class 4
Cost Est. Date: 8/1/2019
Cost Est. Source: CDM Smith (WWMP)
Cost Est. Prepared By: Carl Johnson

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Construction (Build) # 1	$4,500	$0	$0	$300	$1,686	$1,986	$2,514

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	10/28/2024	4/26/2025
Construction - Project Execution	4/27/2025	7/4/2027
Construction - Closeout	4/1/2029	6/30/2029

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

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

CIP	5 Year Total	FY22	FY23	FY24	FY25	FY26	Total
2021	$847	$13	$86	$586	$162	$5,232	$6,079

Description of CIP Changes:

2019-08 - This is a new project to the CIP being driven by recommendations from the Long Term CSO Control Plan from 2008 and further evaluation and recommendation from the Wastewater Masterplan Project (2019).

CIP Number: 270003

Project Title: Long Term CSO Control Plan

Project Status: Active - Procurement - Negotiation Phase - Design

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Multiple CSO Facilities

☐ **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: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 8/20/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: City of Detroit

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The NPDES permit which governs CSO Discharges for GLWA requires GLWA to provide for prohibition, elimination, or adequate treatment of combined sewer discharges containing raw sewage. The current plans of 2008 and 2010 were approved by the EGLE (formerly MDEQ) and are the current plans of record. The new NPDES permit issued in July of 2019 opened the door for GLWA to refresh the Long Term Plan and submit to EGLE for review and approval by 11/15/2022. There are 56 total untreated outfalls operated by GLWA that require control in accordance with the NPDES permit language. The language allows for flexibility in terms of which outfalls GLWA shall address first, second & last, but nonetheless requires all of them to be addressed.

Scope of Work/Project Alternatives:

This project will be a predecessor project to executing a long term CSO control plan, as required by the NPDES permit. This project will include evaluation of the requirements and work done under the 2008 and 2010 current plans of record, evaluation of elements within the Wastewater Masterplan aimed at CSO Control, evaluation of affordability, evaluation and siting of specific projects to be executed, and evaluation and programming of recommended projects to address affordability. The RFP for this project is presently being drafted.

Other Important Info:

The wastewater masterplan, currently in draft format, has identified in it elements that are a part of the Long Term Plan, including a new storage conduit on the west-side for first flush capture, in-system storage dams, system diversions, and some netting facilities locations strategically selected. These will need to be evaluated and further fleshed out under this project and also evaluated against current system requirements, and former Long Term requirements and plans set forth in 2008 and 2010.

Primary Driver: 3 - Regulatory

Driver Explanation:

The NPDES permit requires GLWA to provide for prohibition, elimination, or adequate treatment of combined sewer discharges containing raw sewage.

CIP Number: 270003

Project Title: Long Term CSO Control Plan

Scoring

Project Manager Weighted Score: 0.00

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

Risk Committee Weighted Score: 0.00

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

CIP Number: 270003

Project Title: Long Term CSO Control Plan

Phase: GLWA Salaries

Phase Title: GLWA Salries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CSO 83/17

Funding Source: Revenue Financed Capital

Start Date: 11/1/2019

End Date: 10/24/2026

Fund: Improvement and Extension Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	5 Year Total
GLWA Salaries	$4	$4	$4	$0	$0	$0	$0

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	11/1/2019	10/24/2026

CIP Number: 270003

Project Title: Long Term CSO Control Plan

Phase: Design & Construction Assistance

Phase Title: Design & Construction Assistance

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 7/1/2020

End Date: 6/30/2024

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	5 Year Total
Design & Construction Assistance	$8,000	$0	$0	$3,500	$3,500	$500	$500	$4,500

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	11/1/2019	11/2/2019
Design - Procurement	11/3/2019	6/30/2020
Design - Project Execution	7/1/2020	6/30/2024
Design - Closeout	4/1/2024	6/30/2024
Construction Assistance - Project Execution	10/24/2024	10/24/2026
Construction Assistance - Project Closeout	7/26/2026	10/24/2026

CIP Number: 270003

Project Title: Long Term CSO Control Plan

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

CIP	5 Year Total	FY20	FY21	FY22	FY23	Total
2021	$5,726	$68	$2,796	$2,220	$710	$5,794

Description of CIP Changes:

2019 - This project is new to the CIP. I was formerly pulled out of the unallocated amount in the CSO Control Program 260600 of previous CIP version.
2020 - The GLWA CAFR group determined this would not be funded from CIP and subsequently removed it from CIP. This update is to remove it from the CIP as a "cancelled" project.

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Leib

- [x] **Project New to CIP**

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

Leib Screen

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/20/2020

Year Project Added to CIP: 2020

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Leib CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The Leib CSO Facility has been under utilized for the last 20 years. The WWMP is recommending a diversion to the facility which will increase utilization and close an untreated CSO outfall. To be prepared for this increased utilization, improvements to the facility are required. The chemical system is functionally failed and the screening system presents operational and maintenance difficulties (pilot facility with different types of screens requiring different maintenance and having different failure modes).

Scope of Work/Project Alternatives:

To be ready for the Meldrum Diversion project, the following will be improved. Replacement of fine screens, replacement of the chemical feed system, improved automation for chemical dosing, improved access and maintenance of equipment, miscelaneous electrical/hvac and I&C improvements, a new site access drive to improve safety, as well as various safety improvements to facility hatches.

Other Important Info:

This is a predecessor project to the Meldrum diversion project and ideally should be constructed prior to completion of the Meldrum Diversion to allow use of that and testing of equipment installed as a part of that project.

Primary Driver: 1 - Condition

Driver Explanation:

The chemical system is difficult to operate and maintain. In many instances only a few pumps are in service (and since the facility has been under utilized, this hasn't been an issue). The supporting system of the chemical pumps is near the end of it's 20-year design life and requires replacement. The screens are difficult to operate and there have been other innovations in the screen industry since these were installed that will allow better operation & maintenance.

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Scoring

Project Manager Weighted Score: 71.00

Criteria Name	Score	Comment
Condition	4	Asset has <25% of its design service life remaining. Chemical feed pumps and storage tanks are approaching their design life. The pumps are expensive to maintain / replace, and difficult to operate. The chemical tank has a leak that has damaged the containment coating. This system needs to be improved to facilitate additional flows to the facility from Meldrum Diversion.
Performance (Service Level/Reliability)	4	Expected performance failures under normal condition, high risk of failure/doesn't meet future requirements. The chemical system and screening systems have high risk of failure given the age and difficulty operating/maintaining. Without improvement they will not meet future requirements (Meldrum diversion).
Regulatory (Environmental/Legal)	3	Canceling project will result in non-compliance risk in 1-3 years (meldrum diversion project). If we add flows but screening and disinfection isn't functioning to it's fullest capacity we will have regulatory issues meeting requirements for screening & disinfection facility (TRC and or fecal violations).
Operations and Maintenance	4	High levels of O/M required to keep in service that only marginally ensure future proper operation. The chemcial system (pumps, electrical, instruments, etc.) require replacement to ensure future proper operation capable of meeting increased flows to the facility. The screens require improvement to ensure they aren't failing when flows (and screening) are increased to the facility.
Public Health and Safety	3	Failure will not be catastrophic, but will cause violations of fecal coliform which is a risk to public health. Failure of the screening system will also increase debris in the effluent flow which has an impact to the environment.
Public Benefit	5	Project is part of a strategic plan for right-sizing the system and eliminating an untreated CSO outfall by adding Meldrum diversion, and readying Leib SDF to receive flows higher than it typically has received over the last 18 years.
Financial	4	Project will likely result in avoidance of fines. By keeping the screening and chemical systems in line with the increased flows, we ensure we can meet requirements of the NDPES permit for adequate treatment of CSO discharge.
Efficiency and Innovation	2	Project improves O&M and other process efficiencies (less screen maintenance, less chemical system manual operation, etc.). These improvements will have a small impact on environmental responsibility.

Risk Committee Weighted Score: 78.20

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Criteria Name	Score	Comment
Condition	4	Scored in 2020
Performance (Service Level/Reliability)	4	Scored in 2020
Regulatory (Environmental/Legal)	4	Scored in 2020
Operations and Maintenance	4	Scored in 2020
Public Health and Safety	3	Scored in 2020
Public Benefit	5	Scored in 2020
Financial	4	Scored in 2020
Efficiency and Innovation	4	Scored in 2020

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget:

Phase Status:

Cost Allocation:

Funding Source:

Start Date: 10/3/2019

End Date: 6/30/2028

Fund:

Usefull Life > Yrs: No

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
GLWA Salaries	$376	$0	$0	$25	$57	$57	$57	$50	$46	$268	$83

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	10/3/2019	6/30/2028

Phase: Design & Construction Assistance # 1

Phase Title: Study, Design, Construction Assistance

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Phase Budget: Wastewater
Phase Status: Future Planned New
Cost Allocation: CSO 83/17
Funding Source: Bond Proceeds

Start Date: 4/1/2021
End Date: 10/24/2026
Fund: Construction Bond Fund
Usefull Life > Yrs: Yes
Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Study efforts (budget included in "design" for now), and Construction assistance efforts.

Cost Est. Class: Class 4
Cost Est. Date: 8/16/2020
Cost Est. Source: Jacobs Engineering
Cost Est. Prepared By: Allen Gelderloos

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$2,960	$0	$0	$0	$197	$1,171	$592	$586	$234	$2,780	$180

Phase Dates

Activity Name	Start Date	End Date
Study - Pre-Procurement	10/3/2019	1/1/2020
Study - Procurement	1/2/2020	6/30/2020
Study - Project Execution	7/1/2020	6/30/2021
Study - Closeout	4/1/2021	6/30/2021
Design - Pre-Procurement	5/30/2021	8/28/2021
Design - Procurement	8/29/2021	4/26/2022
Design - Project Execution	4/27/2022	12/28/2023
Design - Closeout	4/1/2025	6/30/2025
Construction Assistance - Project Execution	10/24/2024	10/24/2026
Construction Assistance - Project Closeout	4/1/2028	6/30/2028

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Phase: Construction # 1

Phase Title: Construction

Phase Budget: Wastewater

Phase Status: Future Planned New

Cost Allocation: CSO 83/17

Funding Source: Bond Proceeds

Start Date: 10/24/2024

End Date: 10/24/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:
Construction related efforts

Cost Est. Class: Class 4

Cost Est. Date: 8/16/2020

Cost Est. Source: Jacobs Engineering

Cost Est. Prepared By: Allen Gelderloos

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Construction # 1	$7,606	$0	$0	$2,077	$3,116	$5,193	$2,413

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	4/26/2024	10/23/2024
Construction - Project Execution	10/24/2024	10/24/2026
Construction - Closeout	4/1/2028	6/30/2028

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

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

CIP

Description of CIP Changes:

2020-07 - New to CIP (project was previously included under the "unallocated" portion of the CSO Program 260600 in 2019 CIP Update. It was in unallocated because the scope of the work wasn't known but is now better defined mid-CS-299 completion.

CIP Number: 277001

Project Title: Baby Creek Outfall Improvements Project

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Baby Creek

☐ **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)**

Example of Proposed Facility

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 8/9/2019

Year Project Added to CIP: 2019

CIP Budget: Wastewater

Project Jurisdiction: Multiple Counties

Lookup Location: Baby Creek CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

A facility is required to be constructed in order to ensure continued access to the Baby Creek Outfall. In addition to facility construction, system improvements which address sediment accumulation are needed to ensure the CSO can meet NPDES requirements. This system improvement will likely be a flushing system installed inside the outfall, but the best solution is not known at this time. The triple barrel Baby Creek Outfall consists of (3) 14'-6" wide by 17'-6" tall concrete box culverts which extend from the Baby Creek Screening & Disinfection Facility to the Baby Creek Outfall on the Rouge River (approximately 5,500 feet). Sediment accumulation has been an ongoing problem in the outfall, since original construction. That is because there is no way to flush the outfall, and no easy way to clean the accumulated debris from the outfall. Having debris in the outfall will

Scope of Work/Project Alternatives:

This project consists of a study and design. Construction is anticipated from the design, but since the flushing system solution cannot be known at this time this phase is not included in the project due to the variability in alternatives and their associated costs. The study and design will assess the proper ways to clean the pipes, facilitate future maintenace, flushing of the pipes after rain events, and perform assessments of the backwater gates and ensure proper instrumentation is installed in the outfall to facilitate better operations and monitoring. In addition to this, the current pipes as they pass through the Woodmere Cemetery have a very minimal easement making future maintenance and access very difficult. This project will endeavor to identify the limits of a proper easement which facilitates access necessary for GLWA to properly maintain the outfall, and the Consultant will assist GLWA in acquiring these easements. This easement will likely be through

cause operational issues in terms of loss in capacity to transport flow, potential re-growth of bacteria during events making disinfection more difficult or require more chemical disinfection, and limiting GLWA's ability to perform inspections and adequately assess the condition of the entire pipe.

Woodmere Cemetery and the Patton Park between Vernor & the Baby Creek SDF. GLWA also anticipates the Consultant providing Construction Assistance once this project goes into Construction.

Other Important Info:

The current outfall is not capable of being flushed and the solids level will build up after each rain event. Furthermore, the rising river level continues to impact this facility and the outfalls capacity. Having a build up of sludge does not favor Baby Creek in passing the necessary flows because the headloss through the pipes is small and the capacity of the pipes are reduced to to the reduction in cross-sectional area.

Primary Driver: 1 - Condition

Driver Explanation:

Sediment has accumulated over 6 feet deep in some areas which affects the ability of the CSO to meet NPDES requirements and interferes with the proper operation of the backwater gates. There is currently no way to clean this sediment in the outfall. Current access points in the cemetery are contained within a limited easment that prohibits conducting regular cleanings because there are gravesites over the pipe, and there is inadequate space for equipment. An access facility is required to correct the current conditions and assure access in the future.

CIP Number: 277001

Project Title: Baby Creek Outfall Improvements Project

Scoring

Project Manager Weighted Score: 71.40

Criteria Name	Score	Comment
Condition	2	Scored in 2019
Performance (Service Level/Reliability)	5	Scored in 2019
Regulatory (Environmental/Legal)	3	Scored in 2019
Operations and Maintenance	5	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	4	Scored in 2019

Risk Committee Weighted Score: 72.80

Criteria Name	Score	Comment
Condition	2	Scored in 2019
Performance (Service Level/Reliability)	5	Scored in 2019
Regulatory (Environmental/Legal)	4	Scored in 2019
Operations and Maintenance	4	Scored in 2019
Public Health and Safety	3	Scored in 2019
Public Benefit	4	Scored in 2019
Financial	3	Scored in 2019
Efficiency and Innovation	4	Scored in 2019

CIP Number: 277001

Project Title: Baby Creek Outfall Improvements Project

Phase: GLWA Salaries

Phase Title: GLWA Salaries

Phase Budget: Wastewater

Phase Status: Future Planned Start

Cost Allocation: CTA

Funding Source: Bond Proceeds

Start Date: 8/1/2019

End Date: 6/30/2026

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Cost Est. Class:

Cost Est. Date:

Cost Est. Source:

Cost Est. Prepared By:

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$1,376	$2	$2	$1,143	$57	$57	$46	$46	$24	$230

Phase Dates

Activity Name	Start Date	End Date
Capital Delivery Salary	8/1/2019	6/30/2026

CIP Number: 277001

Project Title: Baby Creek Outfall Improvements Project

Phase: Design-Build # 1

Phase Title: Design - Build of Baby Creek Outfall Improvements

Phase Budget:	Wastewater	**Start Date:**	7/1/2021
Phase Status:	Active - Pre-Procurement	**End Date:**	6/30/2026
Cost Allocation:	TBD	**Fund:**	Construction Bond Fund
Funding Source:	Bond Proceeds	**Usefull Life > Yrs:**	Yes
		Tot. Federal Loan Amout:	$0.00

Phase Comments/Description:

Phase includes design of flushing system for the outfall, and subsequent construction of the outfall. This project phase will include construction, but the construction phase is not identified as of yet because of the selected alternatives are not known and the costs can vary significantly. Project will also include improvements to the backwater gates and instrumentation.

Cost Est. Class: Class 5

Cost Est. Date: 8/18/2020

Cost Est. Source: Design Consultant

Cost Est. Prepared By: M. Krieger

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

	Total Costs	Actual Costs	Prior FYs	FY21	FY22	FY23	FY24	FY25	FY26	5 Year Total
Design-Build # 1	$17,450	$0	$0	$0	$1,750	$1,450	$6,750	$6,750	$750	$17,450

Phase Dates

Activity Name	Start Date	End Date
Design-Build - Pre-Procurement	8/1/2019	12/31/2020
Design-Build - Procurement	1/1/2021	6/30/2021
Design-Build - Project Execution	7/1/2021	6/30/2026
Design-Build - Closeout	4/1/2026	6/30/2026

CIP Number: 277001

Project Title: Baby Creek Outfall Improvements Project

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

CIP	5 Year Total	FY20	FY21	FY22	Total
2021	$2,158	$79	$1,251	$907	$2,237

Description of CIP Changes:

2019 - Project added to the database.
2020-07 - Project scope, schedule, budget updated.

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

Project Status: Future Planned - Within 5 Year Plan

CIP Type: Project

Class Lvl 1: Wastewater

Class Lvl 2: CSO Facilities

Class Lvl 3: Oakwood

- [x] **Project New to CIP**

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

Oakwood Aerial

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Managing Dept.: CSO

Date Original Business Case Prepared: 7/20/2020

Year Project Added to CIP: 2020

CIP Budget: Wastewater

Project Jurisdiction: City of Detroit

Lookup Location: Oakwood CSO Facility

Funds and Cost Center: Wastewater - 5421-892211

Problem Statement:

The Oakwood Facility Construction was completed in 2012. Over the last 8 years, the facility has been under utilized. Proposed plans for the Oakwood-Northwest diversion to Oakwood coupled with a facility assessment require improvements to ensure the facility is prepared to handle flows over those historically observed over the last 8+ years.

Scope of Work/Project Alternatives:

The scope of work is currently being refined under CS-299 (CSO Facilities Assessment Project). At this time, the following improvements will be planned for: The manual screening in the pump station will be replaced with a mechanically raked bar screen to reduce pump failures (currently the manual screens blind and build up head in the storm well until they are manually cleaned, causing issues with bearing submersion of the storm pumps when they are not in operation). The disinfection system will receive improvements to the chemical delivery system to increase reliability and improve automatic operation, and the storage tanks will be retrofitted with manway accesses. The sampling system will be improved to allow operators flexibility for sampling at different levels to ensure TRC is adequate prior to discharge. The screening system will receive improvements to the solids handling conveyor, compactor, and grinder systems. Various actuated gates will receive

Other Important Info:

This project is intended to be completed plus/minus 12 months from the completion of the NWI diversion project. Given anticipated difficulties of that project, it is likely that this project will be completed much earlier than the NWI diversion. Ideally this project is to be completed before the NWI diversion to allow for proper testing/etc. needed when the NWI diversion is completed.

Primary Driver: 4 - O and M

Driver Explanation:

Many issues observed during the CS-299 Condition Assessment project are to resolve operational and maintenance issues (such as cleaning screens, or having chemical pumps that operate in an automated fashion, or access to equipment to facilitate maintenance work).

new actuator and automation improvements. The Basin drain system will be improved to handle clogging of the smaller pipes which drain to the pump station. Various improvements for maintenance will be made, such as relocating valves or equipment to areas where they can be accessed for proper maintenance, or adding outlets to facilitate use of electrical equipment. Instrumentation for measuring flow and level will be replaced and programming in SCADA made to simplify automatic operation. The system operational schema will be revised to best handle the new flow source. Lastly, site drainage issues will be resolved to improve the flow of rain water away from the facility buildings.

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

Scoring

Project Manager Weighted Score: 64.20

Criteria Name	Score	Comment
Condition	4	Asset functions but requires high maintenance levels: for Screen (manual cleaning) This causes additional maintenance for storm pumps (submerged bearings) and sanitary pumps (often run dry due to clogged screens), and chemical disinfection system (frequent failures requiring replacement).
Performance (Service Level/Reliability)	3	Generally meets design needs. There have been pump failures associated with the screens but haven't taken the facility out of service. The same goes for the disinfection equipment and other equipment.
Regulatory (Environmental/Legal)	4	Project is not part of a regulatory mandate but is directly related to future expected requirements. This project will allow GLWA customers to have the ability to achieve their contract capacities into the RWCS by providing capacity within the system (relief).
Operations and Maintenance	4	High levels of O&M required to keep in service but only marginally ensures proper operation. Manually cleaning the screens lasts during dry weather for a few days and during wet-weather for minutes. The sanitary pump station isn't able to function properly without a better screening system.
Public Health and Safety	2	Low chance of failure occurring that will affect public health & safety.
Public Benefit	5	This project is a part of aligning infrastructure with demands by serving as a predecessor project to the NWI diversion which will alleviate flow issues in the NWI and increase utilization of OKW. Making these improvements is necessary to ensuring the facility is in shape to handle flows above what it has seen in the last 8 years.
Financial	2	Presently this project is to address operational issues and maintenance issues as well as ensuring all equipment is ready for increased flows. There is no anticipated savings or revenue from this project or fines anticipated at this time.
Efficiency and Innovation	2	Project improves O&M and other process efficiencies (less screen maintenance, less chemical system manual operation, etc.). These improvements will have a small impact on environmental responsibility.

Risk Committee Weighted Score: 74.60

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

Criteria Name	Score	Comment
Condition	4	Scored in 2020
Performance (Service Level/Reliability)	4	Scored in 2020
Regulatory (Environmental/Legal)	4	Scored in 2020
Operations and Maintenance	4	Scored in 2020
Public Health and Safety	3	Scored in 2020
Public Benefit	5	Scored in 2020
Financial	4	Scored in 2020
Efficiency and Innovation	2	Scored in 2020

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

Phase: Design & Construction Assistance # 1

Phase Title: Study, Design, Construction Assistance

Phase Budget: Wastewater

Phase Status: Future Planned New

Cost Allocation: TBD

Funding Source: Bond Proceeds

Start Date: 5/30/2021

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Study efforts were rolled into design for this version of CIP. This includes design and construction assistance cost allocations. Cost allocation is TBD because part of the project will be CTA and part will be 83/17.

Cost Est. Class: Class 4

Cost Est. Date: 8/16/2020

Cost Est. Source: Jacobs Engineering

Cost Est. Prepared By: Allen Gelderloos

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

	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total	FY27+
Design & Construction Assistance # 1	$2,977	$0	$0	$194	$1,148	$574	$593	$246	$2,755	$222

Phase Dates

Activity Name	Start Date	End Date
Design - Pre-Procurement	5/30/2021	8/28/2021
Design - Procurement	8/29/2021	4/26/2022
Design - Project Execution	4/27/2022	12/28/2023
Design - Closeout	4/1/2025	6/30/2025
Construction Assistance - Project Execution	10/24/2024	10/24/2026
Construction Assistance - Project Closeout	4/1/2028	6/30/2028

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

Phase: Construction # 1

Phase Title: Construction

Phase Budget: Wastewater

Phase Status: Future Planned New

Cost Allocation: TBD

Funding Source: Bond Proceeds

Start Date: 4/26/2024

End Date: 6/30/2028

Fund: Construction Bond Fund

Usefull Life > Yrs: Yes

Tot. Federal Loan Amout: $0.00

Phase Comments/Description:

Construction related efforts. Cost allocation is TBD because part of the project will be CTA and part will be 83/17.

Cost Est. Class: Class 4

Cost Est. Date: 8/16/2020

Cost Est. Source: Jacobs Engineering

Cost Est. Prepared By: Allen Gelderloos

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

	Total Costs	Actual Costs	Prior FYs	FY25	FY26	5 Year Total	FY27+
Construction # 1	$6,873	$0	$0	$1,903	$1,903	$3,805	$3,068

Phase Dates

Activity Name	Start Date	End Date
Construction - Procurement	4/26/2024	10/23/2024
Construction - Project Execution	10/24/2024	10/24/2026
Construction - Closeout	4/1/2028	6/30/2028

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

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

CIP

Description of CIP Changes:

2020-07 - New to CIP (project was previously included under the "unallocated" portion of the CSO Program 260600 in 2019 CIP Update. It was in unallocated because the scope of the work wasn't known but is now better defined mid-CS-299 completion.