



Appendix B: Sewer Business Case Evaluations

Please consider the environment before printing this document.

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**CIP 211001: Rehabilitation of Primary Clarifiers Rectangular Tanks,
Drain Lines, Electrical/Mechanical Building and Pipe Gallery**



New CIP# **211001**

Old CIP# **291**

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

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

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

Project Significance Rehabilitation for meeting NPDES Permit and NEC requirements

Year Added: 1999

Date Original BCE Prepared: 6/23/2005

Date BCE Last Updated: 9/6/2017

Project Engineer/Manager: Nicolas Nicolas

Title: Engineer

Phone: (313) 297-5916

Email: Nicolas.Nicolas@glwater.org

Manager: Philip Kora

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Primary Treatment

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: The work to be completed under this project will include installing ventilation and atmospheric control for the pipe gallery; providing new lights and emergency lights, etc.. This work also includes rehabilitation of 12 drain lines from rectangular clarifiers 3-12, circular clarifiers 16 and 16, installation of large manhole with sump pumps to collect drainage and discharge to clarifier, and concrete crack repairs, and rehabilitation work in Electrical/Mechanical Building.

Project History:

Driver: N/A - Active

Challenges: N/A - Active

Other Important Info:

Related Project:



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

Phase Overview

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

Phase Category: **C** **Construction**

Budget: **Wastewater**

Contract Number: **PC-757**

Phase Status: **Active**

Start Date: **7/18/2016**

End Date: **5/18/2020**

Phase Cost Allocation: **CTA**

Phase Financial Source: **SRF**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **Yes**

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **PC-757**

Phase Title **PC-757 Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	11,485	14,250	7,671	5,337			
Engineering Services							
GLWA Salaries	1,033	1,281	690	480			
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	413	512	276	192	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	52	64	34	24	0	0	0



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

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	12,983	16,107	8,671	6,033	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	12,983	16,107	8,671	6,033	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Active
Contract No	PC-757
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	7/18/2016	1217	11/17/2019
Project Closeout	11/18/2019	182	5/18/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



New CIP# **211001**

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

Old CIP# **291**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		10,848	12,097	20,990	7,968					51,903
2019	14	10,229	12,983	16,107	8,671	6,033	0	0	0	54,037

CIP 211002: Pump Station No. 2 Pumping Improvements



New CIP# **211002**

Old CIP# **961**

WRRF PS No. 2 Pumping Improvements - Phase 1

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
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Project Title **WRRF PS No. 2 Pumping Improvements - Phase 1**

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

Year Added: 2003

CIP Type: Project

Date Original BCE Prepared: 4/30/2003

Budget: Wastewater

Date BCE Last Updated: 8/30/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Alfredo Lava

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Primary Treatment

Phone: (313) 297-5940

Project Location: City of Detroit

Email: Alfredo.Lava@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

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

Project History:

Driver: N/A - Active

Challenges: N/A - Active

Other Important Info:

Related Project:



WRRF PS No. 2 Pumping Improvements - Phase 1

Phase Overview

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

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-1444

Phase Status: Active

Start Date: 7/20/2010

End Date: 6/20/2019

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM Todd King

Phase Overview

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

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PC-795

Phase Status: Active

Start Date: 10/17/2016

End Date: 6/20/2019

Phase Cost Allocation: CTA

Phase Financial Source: SRF

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source: Contract

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF PS No. 2 Pumping Improvements - Phase 1

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	CS-1444
Phase Title	CS-1444 Pump Station No. 2 Pumping Improvements	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	166	36	17				
GLWA Salaries	6	3	1				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2	1	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	174	40	18	0	0	0	0



WRRF PS No. 2 Pumping Improvements - Phase 1

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	PC-795
Phase Title	PC-795, Pump Station No. 2 Pumping Improvements	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	375	2,135	534				
Engineering Services							
GLWA Salaries	34	192	48				
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	14	77	19	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2	10	2	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	425	2,414	603	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	599	2,454	621	0	0	0	0

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Active			
Contract No	PC-795			
Cost Est Class				
	Task Name	Start Date	Duration	End Date
	Scope Development			
	Procurement			
	Project Execution	6/9/2016	1482	6/30/2020
	Project Closeout	7/1/2020	60	8/30/2020



WRRF PS No. 2 Pumping Improvements - Phase 1

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-1444
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	7/20/2010	3257	6/20/2019
Project Closeout	6/20/2019	60	8/19/2019

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Project Manager Weighted Score		

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Review Committee Weighted Score		

Describe Here the Changes from the 2018 CIP to 2019 CIP

Engineering Services contract will be extended to match the construction schedule. The original project called out for the replacement of only 2 of the 8 magnetic flow meters at pump station no. 2 (PC-795). Operations and Maintenance have indicated that the remaining 6 meters have either failed or are failing. Since we have a contractor mobilized for the work pertaining to replacement of 2 of these devices it makes sense to have them replace the remaining while under contract.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	456	1,157	1,304	616						3,533



WRRF PS No. 2 Pumping Improvements - Phase 1

New CIP# **211002**

Old CIP# **961**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total	
2019	29	80	599	2,454	621	0	0	0	0	3,783	

CIP 211003: Rehabilitation of Primary Clarifiers



New CIP# **211003**

Old CIP# **1141**

WRRF Rehabilitation of Primary Clarifiers

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **WRRF Rehabilitation of Primary Clarifiers**

Project Significance Rehabilitation to maintain NPDES permit capacity and addressing excessive, maintenance induced downtime

Year Added: 2006

CIP Type: Project

Date Original BCE Prepared: 5/9/2006

Budget: Wastewater

Date BCE Last Updated: 8/30/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Primary Treatment

Phone: (313) 297-9825

Project Location: City of Detroit

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: This project includes rehabilitation of sludge and scum collectors, replacement of sludge conveyance equipment, and sludge cross scum and collectors for the rectangular clarifiers. The scope of work also includes concrete crack repair on floor, wall, and ceiling.

Project History:

Driver: N/A - Active

Challenges: N/A - Active

Other Important Info:

Related Project:



WRRF Rehabilitation of Primary Clarifiers

Phase Overview

Phase Title CS-1484 Rehabilitation of Primary Clarifiers

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-1484

Phase Status: Active

Start Date: 8/11/2010

End Date: 7/9/2019

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No **CS-1484**

Phase Title **CS-1484 Rehabilitation of Primary Clarifiers** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	200	178	50				
GLWA Salaries	50	16	4				
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
20	6	2	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
2	1	0	0	0	0	0



WRRF Rehabilitation of Primary Clarifiers

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	272	201	56	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	272	201	56	0	0	0	0

Phase Tasks and Dates

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-1484
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	8/11/2010	3611	6/30/2020
Project Closeout	7/1/2020	60	8/30/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli)		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



WRRF Rehabilitation of Primary Clarifiers

New CIP# **211003**

Old CIP# **1141**

Added in house Force Account.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total	
2018	1	220	240	120						581	
2019	1,702		272	201	56	0	0	0	0	2,231	

**CIP 211004: Pump Station 1 Rack & Grit and MPI Sampling Station
1 Improvements**



New CIP# **211004**

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

Old CIP# **1189**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

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

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

Year Added: 2008

CIP Type: Project

Date Original BCE Prepared: 3/17/2008

Budget: Wastewater

Date BCE Last Updated: 9/6/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Partho Ghosh

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Primary Treatment

Phone: (313) 297-5921

Project Location: City of Detroit

Email: Partho.Ghosh@glwater.org

Fund: 5421

Manager: Philip Kora

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

Project History:

Driver: N/A - Active

Challenges: N/A - Active

Other Important Info:

Related Project:



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

Phase Overview

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

Phase Category: **C**

Construction

Budget: **Wastewater**

Contract Number: **PC-789**

Phase Status: **Active**

Start Date: **11/18/2013**

End Date: **7/30/2017**

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Cost Allocation: **CTA**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **Yes**

Comments:

Phase Expenses

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **PC-789**

Phase Title **PC-789 Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	3,228	2,434	268				
Engineering Services							
GLWA Salaries	290	219	24				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	116	88	10	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	14	11	1	0	0	0	0



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

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3,648	2,752	303	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3,648	2,752	303	0	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Active
Contract No	PC-789
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	11/18/2013	2142	9/30/2019
Project Closeout	9/30/2019	60	11/29/2019

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli)		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



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

2017-12-06 Adjusted FY18 Total and Construction Schedule per Phil

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	13,887	2,303	2,652	2,652						21,494
2019	18,341	2,603	3,648	2,752	303	0	0	0	0	27,647

**CIP 211005: Pump Station No. 2 Improvements Phase II at Water
Resource Recovery Facility (WRRF)**



WRRF PS No. 2 Improvements Phase II

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
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 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF PS No. 2 Improvements Phase II

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

Year Added: 2014

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 8/30/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Alfredo Lava

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Primary Treatment

Phone: (313) 297-5940

Project Location: City of Detroit

Email: Alfredo.Lava@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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 is: provide construction assistance, such as review of shop drawings, response to RFIs, attending progress meetings, verifying and assisting GLWA for any changes requested by the contractor, etc.

Construction will follow after the completion of design.

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



WRRF PS No. 2 Improvements Phase II

New CIP# **211005**

Old CIP# **1287**

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.

Driver: 2 - Performance

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.

Other Important Info: n/a

Related Project: The work shall start in accordance with the completion of PC-795, PS-2 Pumping Improvements and Rehabilitation of Pump Station No. 2 Rack and Grit Improvements.



WRRF PS No. 2 Improvements Phase II

Phase Overview

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

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-130

Phase Status: Active

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

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

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF PS No. 2 Improvements Phase II

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	CS-130
Phase Title	CS-130 Pump Station No. 2 Improvements Phase II at Wastewater Treatment Plant (WRRF)	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			456	102	221	50	102
GLWA Salaries	5		41	9	20	5	9
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2	0	16	4	8	2	4
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	2	0	1	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	7	0	515	115	250	57	115



WRRF PS No. 2 Improvements Phase II

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	Pump Station No. 2 Improvements Phase II at Wastewater Treatment Plant (WRRF)	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					8,000	8,000	2,600
Engineering Services							
GLWA Salaries					720	720	234
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	288	288	94
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	36	36	12
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	9,044	9,044	2,940

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	7	0	515	115	9,294	9,101	3,055

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
	Task Name	Start Date	Duration	End Date
	Scope Development	6/8/2020	663	4/2/2022
	Procurement	4/2/2022	180	9/29/2022
	Project Execution	9/30/2022	1080	9/14/2025
	Project Closeout	9/15/2025	60	11/14/2025



WRRF PS No. 2 Improvements Phase II

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-130
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	11/1/2019	220	6/8/2020
Project Execution	6/8/2020	1924	9/14/2025
Project Closeout	9/15/2025	60	11/14/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Replacement or major rehab ne
Performance (Service Level/Reli	4	High Risk of Performance Failure
Regulatory (Environmental/Lega	4	Risk of non compliance in near t
O&M	3	Project will alleviate most ongoi
Public Health & Safety	4	Project will have significant posit
Public Benefit	3	Project part of GLWA strategic pl
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Significant Operational efficiency

Project Manager Weighted Score

78.6

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	4	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	3	

Review Committee Weighted Score

72.8

Describe Here the Changes from the 2018 CIP to 2019 CIP

Previous estimate for pump rehabilitation was too low. PS#2 needs structural improvements too. Therefore, the estimate went up.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			600	1,700	4,800	3,700				10,800
2019			7	0	515	115	9,294	9,101	3,055	22,087

CIP 211006: Rehabilitation of Main Lift Pumps at Pump Station No.

1



WRRF PS No. 1 Improvements

New CIP# **211006**

Old CIP# **1312**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF PS No. 1 Improvements

Project Significance Inspection of condition of all pumps at pump station and rehabilitation to increase efficiency and reliability

Year Added: 2016

CIP Type: Project

Date Original BCE Prepared: 4/13/2017

Budget: Wastewater

Date BCE Last Updated: 9/15/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Alfredo Lava

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Primary Treatment

Phone: (313) 297-5940

Project Location: City of Detroit

Email: Alfredo.Lava@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

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).

Driver: 1 - Condition



WRRF PS No. 1 Improvements

New CIP# **211006**

Old CIP# **1312**

Challenges: Maintaining the adequate pumping capacity during construction will be the most significant challenge on this project.

Other Important Info: *Innovation note: Investment grade audit may identify this area - perform under GESC

Related Project: PC-757 – Rehabilitation of Primary Clarifiers Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery. PC 789 – Pump Station No. 1 Rack & Grit Building, MPI 1, and JSS Improvements. PC-795 – Pump Station No. 2 Pumping Improvements.



WRRF PS No. 1 Improvements

New CIP# 211006

Old CIP# 1312

Phase Overview

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

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 6/11/2018

End Date: 7/18/2023

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

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

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 8/2/2020

End Date: 7/18/2023

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF PS No. 1 Improvements

New CIP# **211006**

Old CIP# **1312**

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	NA
Phase Title	Rehabilitation of Main Lift Pumps at Pump Station No. 1	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services		442	1,593	178	310	178	36
GLWA Salaries		40	143	16	28	16	3
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	16	57	6	11	6	1

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2	7	1	1	1	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	500	1,800	201	350	201	40



WRRF PS No. 1 Improvements

New CIP# **211006**

Old CIP# **1312**

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	Rehabilitation of Main Lift Pumps at Pump Station No. 1	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction				2,000	8,000	8,000	600
Engineering Services							
GLWA Salaries				180	720	720	54
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	72	288	288	22
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	9	36	36	3
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	2,261	9,044	9,044	679

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	500	1,800	2,462	9,394	9,245	719

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	11/9/2018	1027
		Procurement	9/2/2021	180
		Project Execution	3/2/2022	1080
		Project Closeout	2/15/2025	60
			End Date	
			9/1/2021	
			3/1/2022	
			2/14/2025	
			4/16/2025	



WRRF PS No. 1 Improvements

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	4/2/2018	220	11/8/2018
Project Execution	11/9/2018	2289	2/14/2025
Project Closeout	2/15/2025	60	4/16/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Replacement or major rehab ne
Performance (Service Level/Reli	4	High Risk of Performance Failure
Regulatory (Environmental/Lega	4	Risk of non compliance in near t
O&M	4	Project will alleviate most ongoi
Public Health & Safety	4	Project will have significant posit
Public Benefit	3	Project part of GLWA strategic pl
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Significant Operational efficiency

Project Manager Weighted Score

80.8

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	4	
Public Health & Safety	4	
Public Benefit	3	
Financial	2	
Efficiency and Innovation	3	

Review Committee Weighted Score

75

Describe Here the Changes from the 2018 CIP to 2019 CIP

Additional Scope to rehabilitate Pump Station too. Previous cost was under estimated.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			600	5,350	5,125	2,054				13,129
2019			0	500	1,800	2,462	9,394	9,245	719	24,120

CIP 211007: Replacement of Bar Racks at Pump Station No.2



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

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

- Active: One or more phases have started, including procurement
- New: First appearance in CIP
- Future Planned: No Phases have Started
- Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
- Pending Closeout: Project at Substantial Completion but not closed out
- Archived: Project closed or completed for more than one year
- Reclassified: Projects that have been merged with other projects

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

Project Significance Replacement of all bar racks and associated equipment for more reliable and efficient operations. Improvements to the grit collection system will prevent the grit affecting the downstream equipment. These improvements will enable WRRF to be in compliance with NPDES permit.

Year Added: 2016

Date Original BCE Prepared: 10/12/2016

Date BCE Last Updated: 9/15/2017

Project Engineer/Manager: Beena Chackunkal

Title: Engineer

Phone: (313) 297-9825

Email: Beena.Chackunkal@glwater.or

Manager: Ali Khraizat

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Primary Treatment

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: The work consists of evaluation, design and construction for the replacement of Bar Racks and Grit Collection System including their associated motors and electrical panels as necessary to meet the long-term wet weather capacity requirements at thePS-2.

Project History: The Pump Station No. 2 Rack and Grit Collection system have been in service for almost twenty years. The equipment are 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.



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

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.

Driver: 2 - Performance

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

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

Related Project: PC-757: Rehabilitation of Primary Clarifiers & Pipe Gallery PC 789 – Pump Station No. 1 Rack and Grit Building, MPI and JSS Improvements PC 795 – Pump Station No. 2 Improvements



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

Phase Overview

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

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 12/8/2018

End Date: 1/14/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

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

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 1/29/2021

End Date: 1/14/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



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

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	
Phase Title	Replacement of Bar Racks at Pump Station No.2	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services		6	355	1,520	355	152	203
GLWA Salaries		1	32	137	32	14	18
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	13	55	13	6	7

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	2	7	2	1	1

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	7	402	1,719	402	173	229



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

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	Replacement of Bar Racks at Pump Station No.2	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction				231	1,771	6,000	7,595
Engineering Services							
GLWA Salaries				21	159	540	683
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	8	64	216	273
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	1	8	27	34
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	261	2,002	6,783	8,585

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	7	402	1,980	2,404	6,956	8,814

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	11/1/2019	660
		Procurement	8/24/2021	180
		Project Execution	2/21/2022	1080
		Project Closeout	2/6/2025	60
			End Date	
			8/22/2021	
			2/20/2022	
			2/5/2025	
			4/7/2025	



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

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	3/25/2019	220	10/31/2019
Project Execution	11/1/2019	1923	2/5/2025
Project Closeout	2/6/2025	60	4/7/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Replacement or major rehab ne
Performance (Service Level/Reli	4	Project will have a significant po
Regulatory (Environmental/Lega	4	Relatively high, but not imminen
O&M	4	Project will have significant posit
Public Health & Safety	3	Failure not catastophic, moderat
Public Benefit	2	Additional Savings in O&M
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Project will have a positive impa

Project Manager Weighted Score

73.4

Review Committee Score

Criteria	Score	Score Comment
Condition	3	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	4	
Public Health & Safety	3	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	1	

Review Committee Weighted Score

65.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Previous projected expense was under estimated.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			650	2,900	3,300	2,817				9,667
2019			0	7	402	1,980	2,404	6,956	8,814	20,563

**CIP 211008: Rehabilitation of Ferric Chloride Feed Systems in PS-1
and Complex B Sludge Lines**



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

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

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

Project Significance The Ferric Chloride Systems at PS-1 is used to reduce phosphorus to the required permit levels. The system, which include 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.

Year Added: 2017

Date Original BCE Prepared: 7/27/2016

Date BCE Last Updated: 9/15/2017

Project Engineer/Manager: Ravi Yelamanchi

Title: Engineer

Phone: (313) 297-5965

Email: Ravi.Yelamanchi@glwater.org

Manager: Ali Khraizat

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Primary Treatment

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

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



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

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.

Driver: 1 - Condition

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.

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.

Related Project: Rehabilitation of Pump Station – 2 Ferric Chloride Feed System is currently in design stage and construction will start soon.



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

Phase Overview

Phase Title Rehabilitation of Ferric Chloride Feed Systems

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 6/10/2019

End Date: 12/24/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Rehabilitation of Ferric Chloride Feed Systems

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 1/3/2021

End Date: 12/24/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



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

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services		6	102	1,114	417	263	91
GLWA Salaries		1	9	100	37	24	8
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	4	40	15	10	3

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	5	2	1	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	7	115	1,259	471	298	102



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

CURRENT PHASE		Construction				BUDGET		Wastewater		Contract No	
Phase Title		Rehabilitation of Ferric Chloride Feed Systems				PPAT CIP Number				Phase Status	
										Future Planned Start	
Expense Type		FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond			
Construction						2,000	4,634	2,000			
Engineering Services											
GLWA Salaries						180	417	180			
Materials											
Other											
Current Phase Fringe Benefit Expenses		FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond			
		0	0	0	0	72	167	72			
Current Phase Non-Personnel Expenses		FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond			
		0	0	0	0	9	21	9			
Current Phase Total		FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond			
		0	0	0	0	2,261	5,239	2,261			

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	7	115	1,259	2,732	5,537	2,363

Phase Tasks and Dates				
Phase Category	C			
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
Construction				
Task Name	Start Date	Duration	End Date	
Scope Development	12/8/2019	450	3/2/2021	
Procurement	3/4/2021	180	8/31/2021	
Project Execution	9/1/2021	720	8/22/2023	
Project Closeout	8/23/2023	60	10/22/2023	



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

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	5/1/2019	220	12/7/2019
Project Execution	12/8/2019	1353	8/22/2023
Project Closeout	8/23/2023	60	10/22/2023

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Shows abnormal wear. Replace
Performance (Service Level/Reli)	4	High Risk of Performance Failure
Regulatory (Environmental/Lega	4	Risk of non compliance in near t
O&M	4	Project will have significant posit
Public Health & Safety	3	Project likely to address hazard i
Public Benefit	2	Mostly require new infrastrucur
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Right sizing system will have sign

Project Manager Weighted Score

73.4

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	4	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

Review Committee Weighted Score

74.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Increase in cost due to changes in overall project estimates.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			400	1,400	5,200	2,000	633			9,633
2019			0	7	115	1,259	2,732	5,537	2,363	12,013

**CIP 211009: Rehabilitation of the Circular Primary Clarifier Scum
Removal System**



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

New CIP# **211009**

Old CIP# **1386**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

Project Significance 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.

Year Added: 2017

Date Original BCE Prepared: 7/27/2016

Date BCE Last Updated: 9/15/2017

Project Engineer/Manager: Ali Khraizat

Title: Manager

Phone: (313) 297-8819

Email: ali.khraizat@glwater.org

Manager: Ali Khraizat

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Primary Treatment

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

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



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

New CIP# **211009**

Old CIP# **1386**

extended periods of time.

Driver: 1 - Condition

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.

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

Related Project: This project will need to be closely coordinated with other ongoing PC rehabilitation projects. Especially PC-757 which will be limiting primary capacity due to taking multiple primary clarifiers out of service for rehabilitation.



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

New CIP# **211009**

Old CIP# **1386**

Phase Overview

Phase Title Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 11/8/2020

End Date: 5/24/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Rehabilitation of the Circular Primary Clarifier Scum Removal System

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 6/4/2022

End Date: 5/24/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

New CIP# **211009**

Old CIP# **1386**

Phase Expenses

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No

Phase Title **Rehabilitation of the Circular Primary Clarifier Scum Removal System** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services				750	500	125	125
GLWA Salaries			5	75	50	13	13
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	2	30	20	5	5
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	4	2	1	1
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	7	859	572	144	144



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

New CIP# **211009**

Old CIP# **1386**

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	Rehabilitation of the Circular Primary Clarifier Scum Removal System	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction						5,000	4,300
Engineering Services							
GLWA Salaries						450	387
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	180	155

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	22	19

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	5,652	4,861

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	7	859	572	5,796	5,005

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
	Task Name	Start Date	Duration	End Date
	Scope Development	11/8/2020	450	2/1/2022
	Procurement	2/3/2022	180	8/2/2022
	Project Execution	8/3/2022	720	7/23/2024
	Project Closeout	7/24/2024	60	9/22/2024



WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System

New CIP# **211009**

Old CIP# **1386**

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	4/1/2020	220	11/7/2020
Project Execution	11/8/2020	1353	7/23/2024
Project Closeout	7/24/2024	60	9/22/2024

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Shows abnormal wear. Replace
Performance (Service Level/Reli)	4	High Risk of Performance Failure
Regulatory (Environmental/Lega)	3	Moderate risk of causing regulat
O&M	4	High levels of O&M
Public Health & Safety	3	Failure not catastophic, moderat
Public Benefit	2	Additional Savings in O&M
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Project will have a positive impa

Project Manager Weighted Score

69.8

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	5	
Public Health & Safety	2	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	4	

Review Committee Weighted Score

70.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Difference in estimated cost due to addition of in-house force account expenses.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			266	324	1,870	2,671	2,670	2,679		10,480
2019			0	0	7	859	572	5,796	5,005	12,239

CIP 212001: Secondary Clarifiers, RAS Pumps and MCCs Secondary Clarifiers, Returned Activated Sludge Pumps and Motor Control Centers Improvements



New CIP# **212001**

Old CIP# **1100**

WRRF Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers

Project Significance Replace aging pump units, control and instrumentation and building enclosures

Year Added: 2005

Date Original BCE Prepared: 4/1/2005

Date BCE Last Updated: 9/6/2017

Project Engineer/Manager: Nicolas Nicolas

Title: Engineer

Phone: (313) 297-5916

Email: Nicolas.Nicolas@glwater.org

Manager: Philip Kora

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Secondary Treatment & Disinfection

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: This project provides new power supply cable to/from secondary clarifiers and substation MCC, provides new MCCs at each secondary clarifier, provides short-circuit analysis and fault rating , replace 25 RAS pumps at the secondary clarifiers and complete all miscellaneous electrical work such as replacement of cables, conduit, pull boxes, panels and junctions boxes, etc.

Project History:

Driver: N/A - Active

Challenges: N/A - Active

Other Important Info:

Related Project:



WRRF Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers

Phase Overview

Phase Title

Phase Category:

Budget:

Contract Number:

Phase Status:

Start Date:

End Date:

Phase Cost Allocation:

Phase Financial Source:

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



WRRF Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

Phase Tasks and Dates																						
Phase Category	C	<p>Construction</p> <table border="1"> <thead> <tr> <th>Task Name</th> <th>Start Date</th> <th>Duration</th> <th>End Date</th> </tr> </thead> <tbody> <tr> <td>Scope Development</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Procurement</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Project Execution</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Project Closeout</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Task Name	Start Date	Duration	End Date	Scope Development				Procurement				Project Execution				Project Closeout			
Task Name	Start Date		Duration	End Date																		
Scope Development																						
Procurement																						
Project Execution																						
Project Closeout																						
Budget	Wastewater																					
Phase Status	Pending Close-out																					
Contract No	PC-776																					
Cost Est Class																						

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Project Manager Weighted Score		
<input type="text"/>		

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Review Committee Weighted Score		
<input type="text"/>		



New CIP# **212001**

Old CIP# **1100**

WRRF Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers

Describe Here the Changes from the 2018 CIP to 2019 CIP

This project was closed out in May 2016.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	24,060	115								24,175
2019	32,630	1,460	0	0	0	0	0	0	0	34,090

**CIP 212002: Study, Design, & Construction Management Services for
Modified Detroit River Outfall No. 2 - WRRF**



New CIP# **212002**
Old CIP# **1117**

WRRF Study, Design, & Construction Management Services for Modified Detroit River Outfall No. 2

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **WRRF Study, Design, & Construction Management Services for Modified Detroit River Outfall No. 2**

Project Significance Provide remediation and decommissioning of non-utilized portions of as-built PC-709 construction, which resulted in a flooded tunnel

Year Added: 2006

CIP Type: Project

Date Original BCE Prepared:

Budget: Wastewater

Date BCE Last Updated: 10/11/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Alfredo Lava

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Secondary Treatment & Disinfection

Phone: (313) 297-5940

Project Location: City of Detroit

Email: Alfredo.Lava@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The scope of work includes limited study, detailed design, preparation of construction plans, and construction management services necessary to implement the modified Detroit River Outfall No. 2 in accordance with NPDES Permit requirements.

Project History:

Driver: N/A - Pending Closeout

Challenges:

Other Important Info:

Related Project:



WRRF Study, Design, & Construction Management Services for Modified Detroit River Outfall No. 2

Phase Overview

Phase Title CS-1448 Study, Design, & Construction Management Services for Modified Detroit River Outfall No. 2 - WRRF

Phase Category: S/D/CA

Budget: Wastewater

Contract Number: CS-1448

Phase Status: Pending Close-out

Start Date: 10/31/2006

End Date: 10/31/2016

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0



WRRF Study, Design, & Construction Management Services for Modified Detroit River Outfall No. 2

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

Phase Tasks and Dates

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CS-1448
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



**WRRF Study, Design, & Construction Management Services for Modified
Detroit River Outfall No. 2**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	8,449	33								8,482
2019	10,370	449	0	0	0	0	0	0	0	10,819

CIP 212003: Aeration System Improvements



New CIP# **212003**

Old CIP# **1194**

WRRF Aeration System Improvements

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Aeration System Improvements

Project Significance Improve aeration system and provide necessary inter-connections

Year Added: 2008

Date Original BCE Prepared: 4/25/2008

Date BCE Last Updated: 9/6/2017

Project Engineer/Manager: Kashmira Patel

Title: Engineer

Phone: (313) 297-5938

Email: Kashmira.Patel@glwater.org

Manager: Philip Kora

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Secondary Treatment & Disinfection

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

Project History:

Driver: N/A - Under Procurement

Challenges: N/A - Under Procurement

Other Important Info:

Related Project:



WRRF Aeration System Improvements

Phase Overview

Phase Title PC-796 Aeration System Improvements

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PC-796

Phase Status: Active

Start Date: 10/3/2016

End Date: 9/24/2018

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Cost Allocation: CTA

Phase Financial Source: SRF

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

Phase Overview

Phase Title CS-157 Aeration System Improvements

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-157

Phase Status: Active

Start Date: 2/21/2012

End Date: 2/28/2018

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Cost Allocation: CTA

Phase Financial Source: SRF

Lookup Cost Est Class:

Cost Estimation Date: 9/15/2017

Cost Estimation Source: Contractor

Cost Estimation Prep By: Biren Sapia

Useful Life > 20Yrs Yes

Comments:



WRRF Aeration System Improvements

Phase Expenses

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	PC-796
Phase Title	PC-796 Aeration System Improvements	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	8,039	2,341	2,213				
Engineering Services							
GLWA Salaries	723	211	199				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	289	84	80	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	36	11	10	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	9,087	2,647	2,502	0	0	0	0



WRRF Aeration System Improvements

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	CS-157
Phase Title	CS-157 Aeration System Improvements	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	175	64	18				
GLWA Salaries	8	6	2				
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3	2	1	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	186	72	21	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	9,273	2,719	2,523	0	0	0	0

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Active			
Contract No	PC-796			
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development		
		Procurement		
		Project Execution	10/3/2016	660 7/25/2018
		Project Closeout	7/26/2018	60 9/24/2018



WRRF Aeration System Improvements

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-157
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	2/21/2012	2588	3/24/2019
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Project Manager Weighted Score		

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Review Committee Weighted Score		

Describe Here the Changes from the 2018 CIP to 2019 CIP

CS- 1498 is changed to CS-157.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		2,348	11,197	2,658						16,203
2019	1,903	1,902	9,273	2,719	2,523	0	0	0	0	18,320

**CIP 212004: Replacement of Chlorination and Dechlorination
Equipment at the WRRF**



WRRF Chlorination and Dechlorination Process Equipment Improvements

New CIP# **212004**

Old CIP# **1222**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Chlorination and Dechlorination Process Equipment Improvements

Project Significance 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.

Year Added: 2010

Date Original BCE Prepared: 8/8/2016

Date BCE Last Updated: 9/15/2017

Project Engineer/Manager: Ali Khraizat

Title: Manager

Phone: (313) 297-8819

Email: ali.khraizat@glwater.org

Manager: Ali Khraizat

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Secondary Treatment & Disinfection

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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".

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.

Driver: 1 - Condition

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.

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.



WRRF Chlorination and Dechlorination Process Equipment Improvements

New CIP# **212004**

Old CIP# **1222**

Related Project: The RRO segment 2, and RRO Disinfection Projects (PC-797) are potentially affected by this task. The PC-797 control and existing DRO Chlorination and De-chlorination system control needs to be integrated during the design and construction phase of “RRO Disinfection Project PC-797” in order to meet NPDES Permit requirements.



WRRF Chlorination and Dechlorination Process Equipment Improvements

New CIP#

Old CIP#

Phase Overview

Phase Title Replacement of Chlorination and Dechlorination Equipment at the WRRF

Phase Category: C

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 3/3/2018

End Date: 8/25/2019

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		1,859	2,142	585			
Engineering Services							
GLWA Salaries		167	193	52			
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	67	77	21	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	8	10	3	0	0	0



WRRF Chlorination and Dechlorination Process Equipment Improvements

New CIP# **212004**

Old CIP# **1222**

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2,101	2,422	661	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2,101	2,422	661	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	2/20/2018	180	8/19/2018
Project Execution	8/20/2018	600	4/11/2020
Project Closeout	4/12/2020	60	6/11/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Replacement or major rehab ne
Performance (Service Level/Reli	4	High Risk of Performance Failure
Regulatory (Environmental/Lega	5	Compliance Failure
O&M	4	High levels of O&M
Public Health & Safety	5	Likely to address major hazard is
Public Benefit	4	Significant impact on public imag
Financial	3	Moderate positive financial impli
Efficiency and Innovation	2	Significant Operational efficiency

Project Manager Weighted Score

83.8

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	5	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	4	

Review Committee Weighted Score

81.6

Describe Here the Changes from the 2018 CIP to 2019 CIP



WRRF Chlorination and Dechlorination Process Equipment Improvements

New CIP# **212004**

Old CIP# **1222**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total	
2018			400	2,800	1,800					5,000	
2019		86	0	2,101	2,422	661	0	0	0	5,270	

**CIP 212005: Rouge River Outfall No. 2 (RRO-2) Segment 1 - WRRF
Modifications**



New CIP# 212005

Old CIP# 1235

WRRF Rouge River Outfall No. 2 (RRO-2) Segment 1

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **WRRF Rouge River Outfall No. 2 (RRO-2) Segment 1**

Project Significance Cap abandoned entrance shaft of failed DRO-2 tunnel and rehabilitate movable dams and stop logs to control wet weather flow discharge

Year Added: 2011

CIP Type: Project

Date Original BCE Prepared: 3/30/2011

Budget: Wastewater

Date BCE Last Updated: 9/6/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Partho Ghosh

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Secondary Treatment & Disinfection

Phone: (313) 297-5921

Project Location: City of Detroit

Email: Partho.Ghosh@glwater.org

Fund: 5421

Manager: Philip Kora

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The scope of work includes installation of new Stop Log-8 Gates, modification of Movable Dam MD-1, and installation of new power pack building. This project will also provide for a hydraulic actuation system for gates MD-3 A/B and SG 41-44, modification of stop logs SL-1 A/B, and replace chlorination/dechlorination tank car emergency shutoff valves. The project will further include modification of PLC based control system, capping abandoned PC-709 precast tunnel lining segments.

Project History:

Driver:

Challenges:

Other Important Info:

Related Project:



WRRF Rouge River Outfall No. 2 (RRO-2) Segment 1

Phase Overview

Phase Title

Phase Category:

Budget:

Contract Number:

Phase Status:

Start Date:

End Date:

Phase Cost Allocation:

Phase Financial Source:

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



WRRF Rouge River Outfall No. 2 (RRO-2) Segment 1

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	PC-786
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli)		
Regulatory (Environmental/Lega)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit)		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



WRRF Rouge River Outfall No. 2 (RRO-2) Segment 1

New CIP# **212005**

Old CIP# **1235**

This contract was closed out in September 2016.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total	
2018	12,125	62								12,187	
2019	209	43	0	0	0	0	0	0	0	252	

CIP 212006: Rouge River Outfall (RRO) Disinfection (Alternative)



New CIP# 212006

Old CIP# 1302

WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

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

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

Year Added: 2014

CIP Type: Project

Date Original BCE Prepared: 2/11/2015

Budget: Wastewater

Date BCE Last Updated: 9/6/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Darrel Field

Project Classification Level 2: WRRF

Project Classification Level 3: Secondary Treatment & Disinfection

Title:

Project Location: City of Detroit

Phone:

Fund: 5421

Email:

Cost Center: 892211

Manager: Philip Kora

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

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



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

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.

Driver: N/A - Under Procurement

Challenges: N/A - Under Procurement

Other Important Info: n/a

Related Project: 1. CS-1448, RR0-2 Segment 1-WRRF Modifications.
2. PC-786, RR0-2 Segment 1-WRRF Modifications.



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase Overview

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

Phase Category: CM

Construction Management

Budget: Wastewater

Contract Number: CS-1781

Phase Status: Under Procurement

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: SRF

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

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

Phase Category: DB

Design and Build

Budget: Wastewater

Contract Number: PC-797

Phase Status: Under Procurement

Start Date: 2/19/2016

End Date: 12/31/2019

Phase Cost Allocation: CTA

Phase Financial Source: SRF

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Phase Expenses

CURRENT PHASE	<input type="text" value="Construction Management"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text" value="CS-1781"/>
Phase Title	<input type="text" value="CS-1781 Rouge River Outfall (RRO) Disinfection (Alternative)"/>	PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Under Procurement"/>

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	584	529	138				
GLWA Salaries	53	47	12				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	21	19	5	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3	2	1	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	661	597	156	0	0	0	0



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

CURRENT PHASE **Design and Build** BUDGET **Wastewater** Contract No **PC-797**

Phase Title **PC-797 Rouge River Outfall (RRO) Disinfection (Alternative)** PPAT CIP Number Phase Status **Under Procurement**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	19,233	13,464	3,540				
Engineering Services							
GLWA Salaries	500	1,211	318				
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	200	484	127	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	25	61	16	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	19,958	15,220	4,001	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	20,619	15,817	4,157	0	0	0	0

Phase Tasks and Dates			
Phase Category	CM		
Budget	Wastewater		
Phase Status	Under Procurement		
Contract No	CS-1781		
Cost Est Class			
Construction Management			
Phase Category	DB		
Budget	Wastewater		
Phase Status	Under Procurement		
Contract No	PC-797		
Cost Est Class			
Design and Build			
Task Name	Start Date	Duration	End Date
Project Execution	2/19/2016	1137	4/1/2019
Project Closeout	4/2/2019	273	12/31/2019



WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Project Manager Weighted Score		
<input type="text"/>		

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Review Committee Weighted Score		
<input type="text"/>		

Describe Here the Changes from the 2018 CIP to 2019 CIP

Change Order No.3 has been issued to the Contractor for the phase 2 work (design completion and construction work) for \$38,925,000.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	729	6,530	15,800	15,520	9,020					47,599
2019	912	5,961	20,619	15,817	4,157	0	0	0	0	47,466

CIP 212007: Rehabilitation of the Secondary Clarifiers



WRRF Rehabilitation of the Secondary Clarifiers

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Rehabilitation of the Secondary Clarifiers

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

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 3: Secondary Treatment & Disinfection

Title: Engineer

Project Location: City of Detroit

Phone: (313) 297-9825

Fund: 5421

Email: Beena.Chackunkal@glwater.or

Cost Center: 892211

Manager: Ali Khraizat

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

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.

Driver: 1 - Condition

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.

Other Important Info: n/a

Related Project: This project should be coordinated with the recently completed upgrades to finalize a list of components that were not previously upgraded.



WRRF Rehabilitation of the Secondary Clarifiers

New CIP# **212007**

Old CIP# **1385**



WRRF Rehabilitation of the Secondary Clarifiers

Phase Overview

Phase Title Rehabilitation of the Secondary Clarifiers

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 2/7/2020

End Date: 3/15/2025

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Rehabilitation of the Secondary Clarifiers

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 3/31/2022

End Date: 3/15/2025

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Rehabilitation of the Secondary Clarifiers

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	
Phase Title	Rehabilitation of the Secondary Clarifiers	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			750	1,200	750	150	400
GLWA Salaries			75	120	75	15	40
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	30	48	30	6	16

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	4	6	4	1	2

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	859	1,374	859	172	458



WRRF Rehabilitation of the Secondary Clarifiers

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No

Phase Title **Rehabilitation of the Secondary Clarifiers** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					2,495	8,000	17,000
Engineering Services							
GLWA Salaries					225	720	1,530
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	0	0	0	90	288	612
Current Phase Non-Personnel Expenses	0	0	0	0	11	36	76
Current Phase Total	0	0	0	0	2,821	9,044	19,218

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	859	1,374	3,680	9,216	19,676

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	6/3/2021	180
		Procurement	11/30/2021	120
		Project Execution	3/31/2022	1080
		Project Closeout	3/15/2025	60
			End Date	
			11/30/2021	
			3/30/2022	
			3/15/2025	
			5/14/2025	



WRRF Rehabilitation of the Secondary Clarifiers

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	1/2/2019	180	7/1/2019
Procurement	7/1/2019	220	2/6/2020
Project Execution	2/7/2020	1860	3/12/2025
Project Closeout	3/15/2025	60	5/14/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Asset has <25% of its design serv
Performance (Service Level/Reli	3	Generally meets design needs,
Regulatory (Environmental/Lega	4	Moderate risk of causing regulat
O&M	3	Moderate levels of O&M. Projec
Public Health & Safety	3	Failure not catastophic, moderat
Public Benefit	3	Moderate savings for GLWA
Financial	1	Will generate savings
Efficiency and Innovation	1	Project will have a moderate im

Project Manager Weighted Score

58.4

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	1	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	1	

Review Committee Weighted Score

53.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Previous estimated cost was under estimated.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			301	3,576	5,543	5,540	5,540	10,499		30,999
2019			0	0	859	1,374	3,680	9,216	19,676	34,805

CIP 212008: WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)



WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

New

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Project Significance The ILPs are old and reached the end of life cycle. Therefore a replacement or rehabilitation will help to comply with the permit capacity requirement for the Secondary Process Area.

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 9/14/2017

Budget: Wastewater

Date BCE Last Updated: 10/3/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Secondary Treatment & Disinfection

Phone: (313) 297-9825

Project Location: City of Detroit

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: Investigation, Study including modeling, design and construction of the five intermediate lift pumps that lift primary effluent to the aeration basins for secondary treatment.

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.

Driver: 3 - Regulatory

Challenges: Maintaining the required wet weather secondary capacity of 930 MGD.



WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

New CIP#

Old CIP#

Other Important Info: *Innovation note: May need to resize if nutrient removal is added - year-dependent.

Related Project: PC-796: Aeration System Improvements, which is under construction.



WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Overview

Phase Title WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Category: C **Construction**

Budget: Wastewater

Contract Number:

Phase Status: New

Start Date: 6/2/2021

End Date: 5/17/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Category: S/D/CA **Study and Design and Construction Assistance**

Budget: Wastewater

Contract Number:

Phase Status: New

Start Date: 9/3/2018

End Date: 5/17/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction				300	5,000	5,000	5,700
Engineering Services							
GLWA Salaries				27	450	450	513
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
			0	11	180	180	205

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
			0	1	22	22	26

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
			0	339	5,652	5,652	6,444



WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	<input type="text"/>
Phase Title	WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)	PPAT CIP Number	<input type="text"/>	Phase Status	New

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			204	709	811	102	323
GLWA Salaries			18	64	73	9	29
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		0	7	26	29	4	12
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		0	1	3	4	0	1
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		0	230	802	917	115	365

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		0	230	1,141	6,569	5,767	6,809

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	New			
Contract No	<input type="text"/>			
Cost Est Class	<input type="text"/>			
		Task Name	Start Date	Duration
		Scope Development	11/8/2019	660
		Procurement	8/31/2021	180
		Project Execution	2/28/2022	1080
		Project Closeout	2/13/2025	60
			End Date	
			8/29/2021	
			2/27/2022	
			2/12/2025	
			4/14/2025	



WRRF Rehabilitation of Intermediate Lift Pumps (ILPs)

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	New
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	4/1/2019	220	11/7/2019
Project Execution	11/8/2019	1923	2/12/2025
Project Closeout	2/13/2025	60	4/14/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Asset has <25% of its design serv
Performance (Service Level/Reli)	4	Risk of Performance Failure
Regulatory (Environmental/Lega)	5	Significant fines for Compliance
O&M	3	Moderate levels of O&M. Projec
Public Health & Safety	3	Failure not catastophic, moderat
Public Benefit	3	Project part of GLWA strategic pl
Financial	4	Total financial consequence of \$
Efficiency and Innovation	3	Project will have a moderate im

Review Committee Score

Criteria	Score	Score Comment
Condition	4	Rebuilt greater than 10 years
Performance (Service Level/Reliabilit)	4	
Regulatory (Environmental/Legal)	5	
O&M	3	
Public Health & Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	2	

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2019				0	230	1,141	6,569	5,767	6,809	20,516

**CIP 213001: Replacement of Upper Level Belt Filter Presses for
Complex I & II Dewatering**



New CIP# **213001**

Old CIP# **1144**

WRRF Replacement of Belt Filter Presses for Complex I and Upper Level Complex II

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **WRRF Replacement of Belt Filter Presses for Complex I and Upper Level Complex II**

Project Significance Study, design and construction assistance of equipment experiencing numerous breakdowns and for meeting permit capacities

Year Added: 2006

CIP Type: Project

Date Original BCE Prepared: 5/10/2006

Budget: Wastewater

Date BCE Last Updated: 10/2/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Vinod Sharma / Nicolas Nicolas

Project Classification Level 2: WRRF

Project Classification Level 3: Residuals Management

Title:

Project Location: City of Detroit

Phone:

Fund: 5421

Email:

Cost Center: 892211

Manager: Ali Khraizat

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The work will consist of replacements of 10 Belt Filter Presses for Complex 1 and 12 Belt Filter Presses for Complex II Dewatering, Screened Final Effluent booster pumps, sludge belt conveyors, sludge grinders, and all related supportive equipment including control panels and associated wiring.

Project History:

Driver:

Challenges:

Other Important Info:

Related Project:



WRRF Replacement of Belt Filter Presses for Complex I and Upper Level Complex II

Phase Overview

Phase Title PC-787 Replacement of Belt Filter Presses for Complex I and Upper Level Complex II

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PC-787

Phase Status: Pending Close-out

Start Date: 5/21/2012

End Date: 8/3/2016

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title CS-1483 Replacement of Belt Filter Presses for Complex I and Upper Level Complex II

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-1483

Phase Status: Pending Close-out

Start Date: 1/11/2010

End Date: 12/31/2016

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Replacement of Belt Filter Presses for Complex I and Upper Level Complex II

Phase Expenses

CURRENT PHASE	<input type="text" value="Construction"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text" value="PC-787"/>
Phase Title	<input type="text" value="PC-787 Replacement of Belt Filter Presses for Complex I and Upper Level Complex II"/>	PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Pending Close-out"/>

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



New CIP# **213001**

Old CIP# **1144**

**WRRF Replacement of Belt Filter Presses for Complex I and Upper Level
Complex II**

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No **CS-1483**
 Phase Title **CS-1483 Replacement of Belt Filter Presses for Complex I and Upper Level Complex II** PPAT CIP Number Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	0	0	0	0	0	0	0
Current Phase Total	0	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Phase Tasks and Dates	
Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	PC-787
Cost Est Class	
Construction	
Task Name	Start Date Duration End Date
Scope Development	
Procurement	
Project Execution	
Project Closeout	



WRRF Replacement of Belt Filter Presses for Complex I and Upper Level Complex II

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CS-1483
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli)		
Regulatory (Environmental/Lega)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Project Manager Weighted Score		

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Review Committee Weighted Score		

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	29	1,872								1,901
2019	34,101	2,568	0	0	0	0	0	0	0	36,669

CIP 213002: Rehabilitation of Central Offload Facility



New CIP# 213002

Old CIP# 1221

WRRF Rehabilitation of Central Offload Facility

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **WRRF Rehabilitation of Central Offload Facility**

Project Significance Refurbishment or replacement of COF equipment including sludge storage bins, conveyors, and lime offload system, scrubber system, HVAC etc., will improve reliability and performance. This improvement will enable WRRF to be in compliance with NPDES permit

Year Added: 2010

CIP Type: Project

Date Original BCE Prepared: 8/8/2016

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Alfredo Lava

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Residuals Management

Phone: (313) 297-5940

Project Location: City of Detroit

Email: Alfredo.Lava@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The study, design and construction for the rehabilitation of the central offload facility includes bin activators, rotary feeder valves, knife gate valves, bottom hoppers, conveyors, and other associated items. The work also includes rehabilitation of HVAC system of the entire facility, lime offloading system, drainage system, elevator, and doors.

Project History: The Central Offload Facility was built under PC-744 (DWP-1074) as a design build project in 2005. The project completion was delayed due to the lime sludge slide gates on the lime mixers which were continuously leaking whenever sludge head in storage bins was high. This problem was finally resolved after replacing the gates. Due to the nature of lime and sludge and continuous operation of this facility, the equipment started failing causing various operational and maintenance problems. Eventually, the facility needs a major rehabilitation.

Driver: 1 - Condition

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

Other Important Info:



WRRF Rehabilitation of Central Offload Facility

New CIP# **213002**

Old CIP# **1221**

Related Project: PC - 757: Rehabilitation of Primary Clarifiers and Pipe Gallery Improvements.



WRRF Rehabilitation of Central Offload Facility

Phase Overview

Phase Title CS-1701 Rehabilitation of Central Offload Facility

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-1701

Phase Status: Active

Start Date: 10/17/2016

End Date: 1/19/2021

Phase Cost Allocation: CTA

Phase Financial Source: SRF

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Rehabilitation of Central Offload Facility

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 7/20/2018

End Date: 1/19/2021

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments: Construction will start after the design is complete.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Rehabilitation of Central Offload Facility

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	CS-1701
Phase Title	CS-1701 Rehabilitation of Central Offload Facility	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	581	200	150	50			
GLWA Salaries	58	20	15	5			
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	23	8	6	2	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3	1	1	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	665	229	172	57	0	0	0



WRRF Rehabilitation of Central Offload Facility

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
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Phase Title	Rehabilitation of Central Offload Facility	PPAT CIP Number		Phase Status	Future Planned Start
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Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		5,500	6,500	4,000			
Engineering Services							
GLWA Salaries		495	585	360			
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	198	234	144	0	0	0
Current Phase Non-Personnel Expenses	0	25	29	18	0	0	0
Current Phase Total	0	6,218	7,348	4,522	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	665	6,447	7,520	4,579	0	0	0

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No					
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	10/17/2016	550	4/20/2018
		Procurement	4/20/2018	180	10/17/2018
		Project Execution	10/18/2018	914	4/19/2021
		Project Closeout	4/20/2021	60	6/19/2021



WRRF Rehabilitation of Central Offload Facility

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-1701
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	10/17/2016	1645	4/19/2021
Project Closeout	1/19/2021	60	3/20/2021

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Replacement or major rehab ne
Performance (Service Level/Reli	5	Will cause capacity problems
Regulatory (Environmental/Lega	4	Regulatory Compliance failure w
O&M	4	High levels of O&M
Public Health & Safety	3	Moderate impact on public Heal
Public Benefit	3	Moderate savings for GLWA
Financial	3	Will generate savings
Efficiency and Innovation	4	Project will remove significant o

Project Manager Weighted Score

78.4

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	4	
Public Health & Safety	4	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Review Committee Weighted Score

76.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Estimated cost changed because previous estimate was too low without including Engineering services.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		800	5,850	6,750	4,350					17,750
2019		202	665	6,447	7,520	4,579	0	0	0	19,413

**CIP 213003: Sewage Sludge Incinerator Air Quality Improvements at
WRRF**



New CIP# **213003**

Old CIP# **1253**

WRRF Sewage Sludge Incinerator Air Quality Improvements

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Sewage Sludge Incinerator Air Quality Improvements

Project Significance Provide sludge incinerations air quality improvements at Incinerator Complex II to meet NPDES Permit requirements

Year Added: 2012

CIP Type: Project

Date Original BCE Prepared: 4/26/2012

Budget: Wastewater

Date BCE Last Updated: 9/6/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Kashmira Patel

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Residuals Management

Phone: (313) 297-5938

Project Location: City of Detroit

Email: Kashmira.Patel@glwater.org

Fund: 5421

Manager: Philip Kora

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: This project involves the design and construction for sludge incinerator air quality improvements at Complex II Incinerator Facility at WRRF. The scope of work includes installation of new scrubber, induced draft fan, noise reduction modification, and air quality and monitoring equipment.

Project History:

Driver: N/A - Active

Challenges: N/A - Active

Other Important Info:

Related Project:



WRRF Sewage Sludge Incinerator Air Quality Improvements

Phase Overview

Phase Title **PC-791 Sewage Sludge Incinerator Air Quality Improvements at WRRF**

Phase Category: **DB**

Design and Build

Budget: **Wastewater**

Contract Number: **PC-791**

Phase Status: **Pending Close-out**

Start Date: **12/17/2012**

End Date: **6/30/2017**

Phase Cost Allocation: **CTA**

Phase Financial Source: **SRF**

Lookup Cost Est Class:

Cost Estimation Date: **9/15/2017**

Cost Estimation Source: **Engineering**

Cost Estimation Prep By: **Biren Saparia**

Useful Life > 20Yrs **Yes**

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE

Design and Build

BUDGET

Wastewater

Contract No

PC-791

Phase Title **PC-791 Sewage Sludge Incinerator Air Quality Improvements at WRRF**

PPAT CIP Number

Phase Status

Pending Close-out

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	407						
Engineering Services							
GLWA Salaries	36						
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
14	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
2	0	0	0	0	0	0



WRRF Sewage Sludge Incinerator Air Quality Improvements

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	459	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	459	0	0	0	0	0	0

Phase Tasks and Dates

Phase Category	DB
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	PC-791
Cost Est Class	

Design and Build

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	12/17/2012	1656	6/30/2017
Project Closeout	7/1/2017	167	12/15/2017

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



WRRF Sewage Sludge Incinerator Air Quality Improvements

Because of the March 2016 Fire, the completion of PC-791 work was delayed and emission testing and remaining punch list are expected to be done by December 2017.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	33,043	3,000								36,043
2019	34,544	16,091	459	0	0	0	0	0	0	51,094

CIP 213004: Biosolids Dryer Facility at WRRF



WRRF Biosolids Dryer Facility

New CIP# **213004**

Old CIP# **1254**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Biosolids Dryer Facility

Project Significance Allows retirement of Complex I Incinerators. Will provide significant cost savings and is the largest Biosolids dryer facility in North America

Year Added: 2012

Date Original BCE Prepared: 4/26/2012

Date BCE Last Updated: 9/6/2017

Project Engineer/Manager: Darrel Field

Title:

Phone:

Email:

Manager: Philip Kora

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Residuals Management

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: This project provides for study, design and construction of a thermal dryer facility with a firm capacity of 330 dry tons per day (dtpd). The scope of work also includes a conveyance system from Complex I to Complex II.

Project History:

Driver: N/A - Pending Closeout

Challenges: N/A - Pending Closeout

Other Important Info:

Related Project:



WRRF Biosolids Dryer Facility

New CIP# **213004**

Old CIP# **1254**

Phase Overview

Phase Title **PC-792 Biosolids Dryer Facility at WRRF**

Phase Category: **DB**

Budget: **Wastewater**

Contract Number: **PC-792**

Phase Status: **Pending Close-out**

Start Date: **5/23/2013**

End Date: **10/31/2016**

Phase Cost Allocation: **CTA**

Phase Financial Source: **SAWL/SRF**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **Yes**

Comments:

Design and Build

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Design and Build** BUDGET **Wastewater** Contract No **PC-792**

Phase Title **PC-792 Biosolids Dryer Facility at WRRF** PPAT CIP Number Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	171	20					
Engineering Services							
GLWA Salaries	15	2					
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
6	1	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
1	0	0	0	0	0	0



WRRF Biosolids Dryer Facility

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	193	23	0	0	0	0	0	

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	193	23	0	0	0	0	0	

Phase Tasks and Dates

Phase Category	DB
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	PC-792
Cost Est Class	

Design and Build

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	5/23/2013	1683	12/31/2017
Project Closeout	1/1/2018	180	6/30/2018

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



WRRF Biosolids Dryer Facility

New CIP# **213004**

Old CIP# **1254**

Recycle bin modification work, scrubber installation to address the SO2 emission limit, and Air Emission testing are the outstanding work for this project.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	134,191	1,691	60	26						135,968
2019	1,439	585	193	23	0	0	0	0	0	2,240

**CIP 213005: Complex I Incinerators Decommissioning and
Reusability at Water Resource Recovery Facility (WRRF)**



New CIP# 213005

Old CIP# 1284

WRRF Complex I Incinerators Decommissioning and Reusability

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Complex I Incinerators Decommissioning and Reusability

Project Significance This project will decommission the C-I Incinerators building and investigate the re-usability.

Year Added: 2014

Date Original BCE Prepared: 8/15/2016

Date BCE Last Updated: 9/18/2017

Project Engineer/Manager: Ravi Yelamanchi

Title: Engineer

Phone: (313) 297-5965

Email: Ravi.Yelamanchi@glwater.org

Manager: Ali Khraizat

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: Residuals Management

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: Provide basis of design report for decommissioning of the Complex-I demolition and relocation drawings for existing pass through utilities. Provide recommendation for future reusability plan for Complex I. The demolition cost and construction assistance, and relocation of utilities is not included in this budgeted CIP. The budgeted CIP includes study, design and minimum rehabilitation to install heating to continue utilizing the building other than incinerations. The cost to demolish equipment and rehabilitate the existing building for reuse is very high and further capital investment is deferred until reuse need of this building is well defined.

Project History: Complex I was installed and in operation since the 1940's and has completed its valuable life cycle. The Bio-solids Alternatives Evaluation at the WWTP evaluated several options for long-term dewatering disposal as it relates to overall, and more specifically, the Complex I Incinerator Facility. Most of the options indicated that a long-term phasing out of Complex I especially due to its aged equipment and challenges of meet regularity requirements.

Driver: 3 - Regulatory

Challenges: Possible challenges with this project will include shutdowns of the secondary water system and abatement of asbestos and lead for this building built 1940's. Some utility service lines may be shared with adjoining Complex II Incinerator and Complex I Dewa



WRRF Complex I Incinerators Decommissioning and Reusability

New CIP# **213005**

Old CIP# **1284**

Other Important Info: *Innovation note: Future uses may include alternative sludge handling; keep aligned with Master Plan and Research & Innovation.

Related Project: n/a



WRRF Complex I Incinerators Decommissioning and Reusability

Phase Overview

Phase Title Complex I Incinerators Decommissioning and Reusability at Wastewater Treatment Plant (WRRF)

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

PPAT (Phase Program/Allowance Task) Information

Phase Status: Future Planned Start

PPAT CIP Number

Start Date: 1/8/2021

PPAT SOW

End Date: 8/29/2023

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Change PPAT PM

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

Phase Overview

Phase Title Complex I Incinerators Decommissioning and Reusability at Wastewater Treatment Plant (WRRF)

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

PPAT (Phase Program/Allowance Task) Information

Phase Status: Future Planned Start

PPAT CIP Number

Start Date: 3/7/2022

PPAT SOW

End Date: 8/29/2023

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Change PPAT PM

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:



WRRF Complex I Incinerators Decommissioning and Reusability

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	
Phase Title	Complex I Incinerators Decommissioning and Reusability at Wastewater Treatment Plant (WRRF)	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services				140	80	80	50
GLWA Salaries				14	8	8	5
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	6	3	3	2
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	1	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	161	91	91	57



WRRF Complex I Incinerators Decommissioning and Reusability

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No

Phase Title **Complex I Incinerators Decommissioning and Reusability at Wastewater Treatment Plant (WRRF)** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					1,000	2,000	985
Engineering Services							
GLWA Salaries					90	180	89
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	0	0	0	36	72	36
Current Phase Non-Personnel Expenses	0	0	0	0	4	9	4
Current Phase Total	0	0	0	0	1,130	2,261	1,114

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	161	1,221	2,352	1,171

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No					
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	5/10/2021	180	11/6/2021
		Procurement	11/6/2021	180	5/5/2022
		Project Execution	5/6/2022	540	10/28/2023
		Project Closeout	8/29/2023	60	10/28/2023



WRRF Complex I Incinerators Decommissioning and Reusability

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	12/4/2019	180	6/1/2020
Procurement	6/1/2020	220	1/7/2021
Project Execution	1/8/2021	1023	10/28/2023
Project Closeout	10/29/2023	60	12/28/2023

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	2	Asset has <25% of its design serv
Performance (Service Level/Reli	3	Process is out of service
Regulatory (Environmental/Lega	1	Moderate risk of causing regulat
O&M	3	Moderate positive impact on O&
Public Health & Safety	1	Likely to address minor hazard is
Public Benefit	1	Moderate savings for GLWA
Financial	2	Will generate savings
Efficiency and Innovation	3	Project will have a moderate im

Project Manager Weighted Score

38.4

Review Committee Score

Criteria	Score	Score Comment
Condition	2	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	1	
O&M	3	
Public Health & Safety	1	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	3	

Review Committee Weighted Score

38.4

Describe Here the Changes from the 2018 CIP to 2019 CIP

Previous estimate was changed from last year.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			900	200						1,100
2019			0	0	0	161	1,221	2,352	1,171	4,905

**CIP 213006: Improvements to Sludge Feed Pumps at Dewatering
Facilities**



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Project Significance Improved sludge feed pumping system will provide wide range of operating conditions.

Year Added: 2016

CIP Type: Project

Date Original BCE Prepared:

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Ravi Yelamanchi

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Residuals Management

Phone: (313) 297-5965

Project Location: City of Detroit

Email: Ravi.Yelamanchi@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

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

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.

Driver: 2 - Performance

Challenges: Maintaining Plant Operational Capacity during construction.

Other Important Info:

Related Project: PC - 791 and CON -197.



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

New CIP# **213006**

Old CIP# **1309**



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Overview

Phase Title Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

PPAT (Phase Program/Allowance Task) Information

Phase Status: Future Planned Start

PPAT CIP Number

Start Date: 6/7/2021

PPAT SOW

End Date: 11/9/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Change PPAT PM

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

Phase Overview

Phase Title Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

PPAT (Phase Program/Allowance Task) Information

Phase Status: Future Planned Start

PPAT CIP Number

Start Date: 4/10/2020

PPAT SOW

End Date: 11/29/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Change PPAT PM

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					2,055	1,000	
Engineering Services							
GLWA Salaries					185	90	
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	74	36	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	9	4	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	2,323	1,130	0



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No

Phase Title **Improvements to Sludge Feed Pumps at Dewatering Facilities** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			50	240	60		
GLWA Salaries			5	24	6		
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
			2	10	2		
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
			0	1	0		
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
			57	275	68		

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	57	275	2,391	1,130	0

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No					
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	4/10/2020	300	2/4/2021
		Procurement	2/6/2021	180	8/5/2021
		Project Execution	8/6/2021	540	1/28/2023
		Project Closeout	1/29/2023	60	3/30/2023



WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	3/6/2019	180	9/2/2019
Procurement	9/2/2019	220	4/9/2020
Project Execution	4/10/2020	1023	1/28/2023
Project Closeout	1/29/2023	60	3/30/2023

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	3	Moderate renewal or rehab nee
Performance (Service Level/Reli	4	Expected performance failures u
Regulatory (Environmental/Lega	4	Not Imminent risk
O&M	3	Moderate levels of O&M
Public Health & Safety	3	Likely to address minor hazard is
Public Benefit	3	Moderate savings for GLWA
Financial	2	Low Financial impact at this time
Efficiency and Innovation	4	Right sizing system will have sign

Project Manager Weighted Score

66.4

Review Committee Score

Criteria	Score	Score Comment
Condition	3	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	5	
Public Health & Safety	2	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	4	

Review Committee Weighted Score

67.8

Describe Here the Changes from the 2018 CIP to 2019 CIP

The original BCE submitted for the 2018-2022 CIP estimated projected expenses at \$3.3M for this project. Revisions made for the final 2018-2022 CIP at \$1.2M were incorrect. Based upon revisiting the scope of work and the schedule, the 2019-2023 CIP projected expenses were slightly higher than the original BCE.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		33	402	750						1,185
2019	1	3	0	0	57	275	2,391	1,130	0	3,857

**CIP 213007: Modification to Incinerator Sludge Feed Systems at
Complex -II**



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Project Significance 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.

Year Added: 2016

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Residuals Management

Phone: (313) 297-9825

Project Location: City of Detroit

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

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



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

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.

Driver: 3 - Regulatory

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.

Other Important Info: n/a

Related Project: The change order to Contract PC-791 was issued by GLWA to address the fire emergency and restore the operation of C-II Incineration.



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase Overview

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

Phase Category: C

Construction

Budget: Wastewater

Contract Number: CON-197

Phase Status: Under Procurement

Start Date: 2/5/2018

End Date: 1/27/2020

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Wastewater Treatment Plant, Lift Station and Wastewater Collection System Structures Allowance

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Active

Start Date: 8/22/2016

End Date: 10/31/2018

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

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

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

Phase Expenses

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	CON-197
Phase Title	CON-197 Modification to Incinerator Sludge Feed Systems at Complex -II	PPAT CIP Number		Phase Status	Under Procurement

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	89	5,913	10,000	3,075			
Engineering Services							
GLWA Salaries	8	532	900	277			
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3	213	360	111	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	27	45	14	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	100	6,685	11,305	3,477	0	0	0



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No

Phase Title **Wastewater Treatment Plant, Lift Station and Wastewater Collection System Structures Allowance** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	413	91	45				
GLWA Salaries	37	8	4				
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	15	3	2	0	0	0	0
Current Phase Non-Personnel Expenses	2	0	0	0	0	0	0
Current Phase Total	467	102	51	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	567	6,787	11,356	3,477	0	0	0

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Under Procurement			
Contract No	CON-197			
Cost Est Class				
	Task Name	Start Date	Duration	End Date
	Scope Development	8/22/2016	430	10/26/2017
	Procurement	10/30/2017	172	4/20/2018
	Project Execution	4/21/2018	1035	2/19/2021
	Project Closeout	2/20/2021	60	4/21/2021



WRRF Modification to Incinerator Sludge Feed Systems at Complex -II

New CIP# **213007**

Old CIP# **1311**

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	8/22/2016	1642	2/19/2021
Project Closeout	2/20/2021	60	4/21/2021

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Immediate replacement require
Performance (Service Level/Reli	5	Causing Significant Capacity Pro
Regulatory (Environmental/Lega	5	Significant fines for Compliance
O&M	4	Significant Positive impact on O
Public Health & Safety	5	Project will have a major & meas
Public Benefit	4	Significant, noticeable impact on
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Project will remove significant o

Project Manager Weighted Score

92.4

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	5	
Regulatory (Environmental/Legal)	5	
O&M	4	
Public Health & Safety	4	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	3	

Review Committee Weighted Score

87.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Additional scope to the previous CIP. Construction of two Small Capital Projects, Replacement of 19 MCCs and Replacement of the unit substation EB-26, were combined with this construction project to avoid multiple shut downs in Incineration Complex II and to coordinate the works more effectively. The estimated cost has also changed.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		1,500	9,600	7,822						18,922
2019			567	6,787	11,356	3,477	0	0	0	22,187

CIP 213008: Rehabilitation of the Ash Handling Systems



WRRF Rehabilitation of the Ash Handling Systems

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **WRRF Rehabilitation of the Ash Handling Systems**

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

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Alfredo Lava

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Residuals Management

Phone: (313) 297-5940

Project Location: City of Detroit

Email: Alfredo.Lava@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

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.

Driver: 1 - Condition

Challenges: Maintaining the dry ash system at capacity while the wet ash system is being built will be a challenge.

Other Important Info: *Innovation note: Due to only 10-15 years remaining useful life on Complex I, reconsider recommissioning wet ash. Recommend focusing



WRRF Rehabilitation of the Ash Handling Systems

New CIP# **213008**

Old CIP# **1383**

on reuse of dry ash elements of Complex I, and adding redundancy and automation to the dry ash system.

Related Project: This project should be coordinated with the decommissioning of the C-I Incinerators as well as any planned plant wide pipe rehabilitation program.



WRRF Rehabilitation of the Ash Handling Systems

Phase Overview

Phase Title Rehabilitation of the Ash Handling Systems

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 11/8/2019

End Date: 12/14/2014

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Rehabilitation of the Ash Handling Systems

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 12/30/2021

End Date: 12/14/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Rehabilitation of the Ash Handling Systems

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			600	800	150	200	250
GLWA Salaries			60	80	50	20	25
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	24	32	20	8	10
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	3	4	2	1	1
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	687	916	222	229	286



WRRF Rehabilitation of the Ash Handling Systems

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	Rehabilitation of the Ash Handling Systems	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					3,000	5,166	8,000
Engineering Services							
GLWA Salaries					270	465	720
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	108	186	288
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	14	23	36
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	3,392	5,840	9,044

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	687	916	3,614	6,069	9,330

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No					
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	11/8/2019	660	8/29/2021
		Procurement	8/31/2021	180	2/27/2022
		Project Execution	2/28/2022	1080	2/12/2025
		Project Closeout	2/13/2025	60	4/14/2025



WRRF Rehabilitation of the Ash Handling Systems

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	10/3/2018	180	4/1/2019
Procurement	4/1/2019	220	11/7/2019
Project Execution	11/8/2019	1923	2/12/2025
Project Closeout	2/13/2025	60	4/14/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Asset has <25% of its design serv
Performance (Service Level/Reli	4	Expected performance failures u
Regulatory (Environmental/Lega	3	Moderate risk of causing regulat
O&M	4	Significant Positive impact on O
Public Health & Safety	3	Likely to address minor hazard is
Public Benefit	2	Additional Savings in O&M
Financial	3	Project will generate significant s
Efficiency and Innovation	3	Project will have a moderate im

Project Manager Weighted Score

66

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	3	
O&M	4	
Public Health & Safety	3	
Public Benefit	1	
Financial	3	
Efficiency and Innovation	1	

Review Committee Weighted Score

57.8

Describe Here the Changes from the 2018 CIP to 2019 CIP

Estimated construction cost has been modified since previous CIP.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			530	1,045	6,225	5,725	4,791			18,316
2019			0	0	687	916	3,614	6,069	9,330	20,616

CIP 213009: Phosphorous Recovery Facility at the WRRF



WRRF Phosphorous Recovery Evaluation

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Cancelled

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
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 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF Phosphorous Recovery Evaluation

Project Significance This study will evaluate the cost/benefit of harvesting phosphorous from the waste stream. A secondary benefit is the reduction in struvite formation/clogging in the plant piping

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 10/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Ravi Yelamanchi

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: Residuals Management

Phone: (313) 297-5965

Project Location: City of Detroit

Email: Ravi.Yelamanchi@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The scope of work will be a study that includes: quantifying the amount of phosphorous in the sludge streams, estimating the potential amount of phosphorous that can be recovered, evaluating the potential market for recovered phosphorous, evaluating the alternatives for recovering phosphorous, developing an alternatives evaluation that includes life-cycle cost estimates and overall cost benefit analysis, identification of potential locations for a phosphorous recovery facility (if proven feasible), and preliminary layouts of facility equipment (if feasible). Construction of the facility if feasible.

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 and relying on normal phosphorous consumption in the secondary treatment process. By removing phosphorous in both the primary and secondary processes, phosphorous is then concentrated in the primary and waste activated sludges. Phosphorous is a valuable commodity that can be reused in other products such as fertilizer. The recovery of phosphorous is becoming more prevalent at other WWTPs.



WRRF Phosphorous Recovery Evaluation

New CIP# **213009**

Old CIP# **1399**

Driver: 6 - Public Benefit

Challenges: Potential locations for a phosphorous recovery facility.

Other Important Info: n/a

Related Project: Related projects include the ferric feed at both PS-1 and PS-2. These projects are for removing phosphorous from the liquid stream. The PS-1 project will also include study of alternative ferric feed locations for phosphorous removal. This study should also be coordinated with the BDF. If the BDF plans to sell the dried Biosolids pellets, coordination with any required phosphorous content in the pellets needs to be done.



WRRF Phosphorous Recovery Evaluation

Phase Overview

Phase Title Phosphorous Recovery at WRRF

Phase Category: S/D/CA

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 6/11/2021

End Date: 12/25/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

Study and Design and Construction Assistance

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Phosphorous Recovery at WRRF

Phase Category: C

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 1/5/2023

End Date: 12/25/2024

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

Construction

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF Phosphorous Recovery Evaluation

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



WRRF Phosphorous Recovery Evaluation

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No

Phase Title **Phosphorous Recovery at WRRF** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	3/10/2022	180
		Procurement	9/6/2022	120
		Project Execution	1/5/2023	720
		Project Closeout	12/25/2024	60
			End Date	
			9/6/2022	
			1/4/2023	
			12/25/2024	
			2/23/2025	



WRRF Phosphorous Recovery Evaluation

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	5/6/2020	180	11/2/2020
Procurement	11/2/2020	220	6/10/2021
Project Execution	6/11/2021	1293	12/25/2024
Project Closeout	12/25/2024	60	2/23/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	3	Moderate renewal or rehab nee
Performance (Service Level/Reli	3	Project will have moderate posit
Regulatory (Environmental/Lega	1	No regulatory benefit
O&M	3	Project will have moderate posit
Public Health & Safety	3	Project will have moderate posit
Public Benefit	5	Additional Savings for GLWA
Financial	5	Additional Revenue
Efficiency and Innovation	4	Process efficiency for a more rob

Project Manager Weighted Score

61.8

Review Committee Score

Criteria	Score	Score Comment
Condition	1	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	1	
O&M	4	
Public Health & Safety	1	
Public Benefit	1	
Financial	2	
Efficiency and Innovation	2	

Review Committee Weighted Score

39.4

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018				500	2,000	6,250	6,250			15,000
2019			0	0	0	0	0	0	0	0

**CIP 214001: Construction of new Industrial Waste Control Division
and Analytical Laboratory Operations**



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

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

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

Year Added: 2014

CIP Type: Project

Date Original BCE Prepared: 10/12/2016

Budget: Wastewater

Date BCE Last Updated: 9/18/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: IWC

Phone: (313) 297-9825

Project Location: City of Detroit

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

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

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



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

New CIP# **214001**

Old CIP# **1285**

underutilized GLWA facilities rather than lease space from a 3rd party.

Driver: 3 - Regulatory

Challenges: Maintaining the laboratory operations during relocation.

Other Important Info:

Related Project: none



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Phase Overview

Phase Title Construction of new Industrial Waste Control Division and Analytical Laboratory Operations

Phase Category: C

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: IWC

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		3,540	6,868	884			
Engineering Services							
GLWA Salaries		318	618	80			
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	127	247	32	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	16	31	4	0	0	0



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	4,001	7,764	1,000	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	4,001	7,764	1,000	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	1/4/2018	180	7/3/2018
Procurement	7/3/2018	172	12/22/2018
Project Execution	12/23/2018	540	6/15/2020
Project Closeout	6/16/2020	60	8/15/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	3	Immediate replacement require
Performance (Service Level/Reli)	4	Likelyhood of serious inconvenie
Regulatory (Environmental/Lega	5	Project is part of a mandated or
O&M	2	Major,measurable positive impa
Public Health & Safety	3	Cancelling project will continue
Public Benefit	3	Supports neighborhood growth
Financial	3	securing of grants/external fund
Efficiency and Innovation	5	Substantial operational efficienci

Project Manager Weighted Score

71.6

Review Committee Score

Criteria	Score	Score Comment
Condition	3	
Performance (Service Level/Reliabilit	2	
Regulatory (Environmental/Legal)	5	
O&M	2	
Public Health & Safety	2	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	5	

Review Committee Weighted Score

62.2

Describe Here the Changes from the 2018 CIP to 2019 CIP



WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations

Estimated cost changed because the previous estimate was low. Refined the scope and Project History.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			5,000	2,000						7,000
2019		182	0	4,001	7,764	1,000	0	0	0	12,947

CIP 215001: CSO Facilities Improvement Program



CSO FACILITIES IMPROVEMENT PROGRAM (Reclassified)

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Reclassified

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

CSO FACILITIES IMPROVEMENT PROGRAM (Reclassified)

Project Significance PROJECT RECLASSIFIED TO CIP 260600. 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.

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/19/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Chris Nastally

Project Classification Level 2: WRRF

Title: Manager

Project Classification Level 3: CSO RTB & SDF

Phone: (313) 297-5922

Project Location: City of Detroit

Email: christopher.nastally@glwater.o

Fund: 5421

Manager: Chris Nastally

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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 facilitate improvements to the disinfection systems, screening systems, facility automation, safety systems, flushing systems, instrumentation & controls, electrical systems, various buildings systems (HVAC, lighting, etc.), and other miscellaneous improvements identified at the facilities throughout the life of this program. 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 assessment.

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

CSO FACILITIES IMPROVEMENT PROGRAM (Reclassified)

1994 and the most recent facility being constructed in 2011. A scheduled replacement plan was completed in 2013 along with a needs assessment conducted in 2016. These efforts, along with continuous feedback from operations and maintenance, are the main drivers at the onset of this program. Establishment of condition of the facilities is planned as a part of O&M but may demand resources under this program depending on the nature, risk, and degree of issues identified during these various condition assessment/inspection programs. A Goal of this program includes standardization of the systems utilized at each facility. Given the eras in which they 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.

Driver: Varies

Challenges: As this program starts off, there is a lot of design RFPs in the beginning which will lead to 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.

Other Important Info: (Replaces CIP1313).

Related Project: The proposed new CIP budget for rehabilitation for all the CSO RTB and SDF facilities is based on the 2016 Needs Assessment Study Report and condition assessment performed under CS-1499, Task 18. The condition assessment identified deficient process equipment, systems and deteriorating structural conditions that required near-term remedial work at the three RTB's: the Puritan-Fenkell Basin and dry weather pump station (completed in 1998 under PC-697), the Seven Mile (Completed in 1999 under PC-696) and the Conner Creek (completed in 2005 under PC-739). The 2016 Needs Assessment Facility walkthrough have identified that CSO RTB and SDF's at Hubbell Southfield, St. Aubin & Leib, Baby Creek and Bell Isle needs rehabilitation. The Puritan-Fenkell and Seven Mile RTB's will be combined with this new capital improvements plan for all the remaining CSO facilities. GLWA staff have identified that Conner Creek CSO facility rehabilitation is critical to the wastewater operation and few projects has initiated as an emergency repair work. Due to recent rain events under emergency repair activities the following scope items at GLWA's Conner Creek CSO RTB are ongoing; Install additional automation, continue repairs to existing automation, replace five sodium hypochlorite pumps, repair piping leaks and relocate piping for the flushing water system, replace 5 Accusonic meters upstream, replace electrical power and controls raceway above the RTB, replace emergency relief gates causing concrete damage, replace all disinfection valves, replace all insulation and heat taping for exposed sodium hypochlorite lines, replace all sodium hypochlorite mixers in the channels. The above Conner Creek CSO RTB facility emergency repair list include only operation critical rehabilitation needs to avoid flooding's, the remaining non critical rehabilitation needs identified in the Needs Assessment Report will be addressed through this proposed project at this facility.



CSO FACILITIES IMPROVEMENT PROGRAM (Reclassified)

New CIP# **215001**

Old CIP# **1384**

ALL PHASES TOTAL

PROJECT PRIORITIZATION SCORING

Project Manager Score

Review Committee Score

Project Manager Score

Project Manager Weighted Score
82

Review Committee Weighted Score
90.6

Describe Here the Changes from the 2018 CIP to 2019 CIP

Costs for FY 2019 construction have increased due to the emergency nature of the required projects at the Conner Creek CSO Facility. There are costs for FY 19/20 for construction in the program that are placeholders in case any of the inspection programs under maintenance find issues with the facilities which are emergency in nature and require repair immediately. Furthermore, the costs from the 2018 CIP to the 2019 CIP have increased significantly, primarily in Fiscal Years 21,22,23, and 24 & Beyond. The primary reason for this is the items previously identified in the CIP were not laid out and grouped as projects to determine total project cost and lay out the projected completion of these projects from design-phase to construction-phase. Beginning in FY 18, a significant effort is anticipated by the emerging CSO Control Program Group to develop several RFPs seeking design-phase consulting assistance to complete the identified projects from the Needs Assessment, Scheduled Replacement Plan, and those identified by Operations/Maintenance as equipment which requires significant effort to maintain & operate or has failed. The RFPs and resulting design work are anticipated to ramp up heavily in FY20 with the fruits of those designs (construction projects) beginning construction in FY 21 and continuing through FY 23. Beyond FY 23 is a budgeted amount which will most likely



CSO FACILITIES IMPROVEMENT PROGRAM (Reclassified)

New CIP# **215001**

Old CIP# **1384**

change over the next fiscal year or two as more information is obtained in assessing the CSO Facilities condition and as efforts from the Wastewater Master Plan may affect the overall direction of the program. This same goes for the identified design (consulting) efforts which are presently shown to tail off in FY 22. As more projects become identified and prioritized, the design efforts for FY 22 and beyond will likely require adjustment under this program, or possibly could justify their own CIP project number and means of individual tracking.

CIP 216001: Underground Electrical Duct Bank Repair and EB-1, EB-2, and EB-10 Primary Power Service Improvements - WRRF



New CIP# 216001

Old CIP# 366

Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements**

Project Significance Procure and install electrical power system to meet safety standards and prove third redundant electric feeder per NPDES permit

Year Added: 1998

CIP Type: Project

Date Original BCE Prepared: 5/7/1998

Budget: Wastewater

Date BCE Last Updated: 10/22/2017

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Engineer/Manager: Phillip Kora

Project Classification Level 3: General Purpose

Title: Engineer

Project Location: City of Detroit

Phone: (313) 297-5909

Fund: 5421

Email: Philip.Kora@glwater.org

Cost Center: 892211

Manager: Philip Kora

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: This project involves the study, design, and construction assistance work for repairing the 15KV Primary Switch Gears A & B, unit substation EB-1, EB-2, and EB-10, unit 5KV substation and switch gear DE-1, and two outdoor 3-phase primary transformers; and repair of building structure and associated components. The work will also include coordination of system shut-down, and coordination of system reconnection with new cables.

Project History:

Driver: N/A - Pending Closeout

Challenges: N/A - Pending Closeout

Other Important Info:

Related Project:



Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements

Phase Overview

Phase Title **PC-783 Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements**

Phase Category: **C** **Construction**

Budget: **Wastewater**

Contract Number: **PC-783**

Phase Status: **Pending Close-out**

Start Date: **5/21/2012**

End Date: **5/21/2016**

Phase Cost Allocation: **CTA**

Phase Financial Source: **Bond**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: **Contract**

Cost Estimation Prep By:

Useful Life > 20Yrs **Yes**

Comments: **Weiss Construction**

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **PC-783**

Phase Title **PC-783 Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements** PPAT CIP Number Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	914						
Engineering Services							
GLWA Salaries	82						
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	33						

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	4						



Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	1,033							

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	1,033							

Phase Tasks and Dates	
Phase Category	C Construction
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	PC-783
Cost Est Class	

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli)		
Regulatory (Environmental/Lega		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP



Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Service Improvements

New CIP# **216001**

Old CIP# **366**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	23,037	2,575	1,532							27,144
2019	30,564	1,072	1,033							32,669

**CIP 216002: Plant-wide Fire Alarm Systems Upgrade/ Integration and
Fire Protection Improvements**



New CIP# 216002

Old CIP# 1028

Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Pending Closeout

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

Project Significance Install an integrated Fire Alarm system to facilitate centralized monitoring

Year Added: 2004

CIP Type: Project

Date Original BCE Prepared: 4/13/2004

Budget: Wastewater

Date BCE Last Updated: 10/11/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Vinod Sharma

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: General Purpose

Phone: (313) 297-5957

Project Location: City of Detroit

Email: Vinod.Sharma@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept N/A - Pending Closeo

PROJECT INFORMATION

Scope of Work: This project involves the installation of an Integrated Plant-wide Fire Alarm System in approximately 100 buildings (of which 50+ have a stand-alone fire alarm system) at the WRRF in order to facilitate centralized monitoring and assure faster corrective action. The new system will be interfaced with the existing WRRF Control System.

Project History:

Driver: N/A - Pending Closeout

Challenges: N/A - Pending Closeout

Other Important Info:

Related Project:



Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

Phase Overview

Phase Title PC-782 Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PC-782

Phase Status: Closed Out

Start Date: 4/15/2013

End Date: 11/4/2016

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title CS-1443 Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-1443

Phase Status: Pending Close-out

Start Date: 6/12/2008

End Date: 12/31/2015

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

Phase Expenses

CURRENT PHASE	<input type="text" value="Construction"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text" value="PC-782"/>	
Phase Title	<input type="text" value="PC-782 Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements"/>		PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Closed Out"/>

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No **CS-1443**
 Phase Title **CS-1443 Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements** PPAT CIP Number Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Phase Tasks and Dates

Phase Category **C**
 Budget **Wastewater**
 Phase Status **Closed Out**
 Contract No **PC-782**
 Cost Est Class

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			



Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection Improvements

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CS-1443
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reli)		
Regulatory (Environmental/Lega)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Project Manager Weighted Score		

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		
Review Committee Weighted Score		

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	5,390	624								6,014
2019	347	503	0	0	0	0	0	0	0	850

**CIP 216003: Study/ Repair Potable Water, Screened Final Effluent,
Natural Gas and Compressed Air Pipe Lines at the WRRF**



New CIP# **216003**

Old CIP# **1140**

Study/ Repair Potable Water, Screened Final Effluent, Natural Gas and Compressed Air Pipe Lines at the WRRF

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Reclassified

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Study/ Repair Potable Water, Screened Final Effluent, Natural Gas and Compressed Air Pipe Lines at the WRRF**

Project Significance PROJECT RECLASSIFIED TO 216006. These utilities are vital to the operations of the WRRF. The integrity of these systems is necessary to operate the WRRF reliably.

Year Added: 2006

CIP Type: Project

Date Original BCE Prepared:

Budget: Wastewater

Date BCE Last Updated: 11/1/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager:

Project Classification Level 2: WRRF

Title:

Project Classification Level 3: General Purpose

Phone:

Project Location: City of Detroit

Email:

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The potable water supply to WRRF is experiencing low pressure problem. The study design and construction for the secondary water system improvements to improve reliability and water pressure to the WRRF ids required. Other tasks include repair/replace the aging and corroded pipes, valves and fittings for Potable Water Supply System. Repair/replace the aging and corroded pipes, valves and fittings for Natural Gas system. Repair/replace the aging and corroded pipes, valves and fittings for the SFE system. Repair/replace the aging and corroded pipes, valves and fittings for the Compressed Air System. Design and Install Compressed Air to supply the required air to the pneumatic tools in Pump Station #2.

Project History:

Driver: 1 - Condition

Challenges: Temporary air, water, natural gas system shutdowns may be required to perform the work.

Other Important Info:

Related Project:



Study/ Repair Potable Water, Screened Final Effluent, Natural Gas and Compressed Air Pipe Lines at the WRRF

ALL PHASES TOTAL

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	0	
Performance (Service Level/Reli	0	
Regulatory (Environmental/Lega	0	
O&M	0	
Public Health & Safety	0	
Public Benefit	0	
Financial	0	
Efficiency and Innovation	0	

Project Manager Weighted Score

0

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	3	
O&M	3	
Public Health & Safety	2	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	2	

Review Committee Weighted Score

55.6

Describe Here the Changes from the 2018 CIP to 2019 CIP

Project has been reclassified under Project 216006

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		50	690	1,900	1,150	1,200				4,990

**CIP 216004: Rehabilitation of Grit and Screening System at PS-2 and
Rehabilitation of Sampling Sites at WRRF**



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

New CIP# **216004**

Old CIP# **1223**

PROJECT SUMMARY

- Innovation**
- MP Right Sizing**
- System Reliability**

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

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

Project Significance 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.

Year Added: 2010

Date Original BCE Prepared: 8/1/2016

Date BCE Last Updated: 9/19/2017

Project Engineer/Manager: Beena Chackunkal

Title: Engineer

Phone: (313) 297-9825

Email: Beena.Chackunkal@glwater.or

Manager: Ali Khraizat

Managing Dept WW Eng

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: WRRF

Project Classification Level 3: General Purpose

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

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



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

New CIP# **216004**

Old CIP# **1223**

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.

Driver: 2 - Performance

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

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.

Related Project: CIP 211008 also concerns Ferric Chloride system.

PC-757: Rehabilitation of Primary Clarifiers, Drain Lines, Hot Water, and Scum Lines, PC 789 – Pump Station No. 1 Rack and Grit Building, MPI and JSS Improvements, PC 795 – Pump Station No. 2 Improvements.



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

Phase Overview

Phase Title Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WRRF

Phase Category: C

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 4/2/2018

End Date: 9/24/2019

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	36	487	3,500	500			
Engineering Services							
GLWA Salaries	3	44	315	45			
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1	18	126	18	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2	16	2	0	0	0



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

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	40	551	3,957	565	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	40	551	3,957	565	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	2/13/2018	180	8/12/2018
Project Execution	8/13/2018	600	4/4/2020
Project Closeout	4/4/2020	60	6/3/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Excessive Maintenance levels for
Performance (Service Level/Reli	5	Equipment obsolete/extremely
Regulatory (Environmental/Lega	5	Compliance Failure will lead to si
O&M	4	High levels of O&M
Public Health & Safety	3	Moderate positive impact on pu
Public Benefit	3	Moderate savings for GLWA
Financial	4	Project will likely result in avoida
Efficiency and Innovation	3	Process efficiency for a more rob

Project Manager Weighted Score

82.2

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	5	
Regulatory (Environmental/Legal)	5	
O&M	4	
Public Health & Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	3	

Review Committee Weighted Score

82.2

Describe Here the Changes from the 2018 CIP to 2019 CIP



**Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at
WRRF**

New CIP# **216004**

Old CIP# **1223**

Refined scope.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			2,500	2,500						5,000
2019		312	40	551	3,957	565	0	0	0	5,425

**CIP 216005: Rehabilitation of the Main Plant Maintenance Building,
Replacement of Various Plant Maintenance Areas and Work
Environment Improvement**



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Cancelled

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

Project Significance Rehabilitate permanent structure to maximize the occupancy and eliminate unnecessary temporary structures.

Year Added: 2011

CIP Type: Project

Date Original BCE Prepared: 8/2/2016

Budget: Wastewater

Date BCE Last Updated: 9/19/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: General Purpose

Phone: (313) 297-9825

Project Location: City of Detroit

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: Study and Evaluate the existing maintenance facilities throughout the plant for suitable modifications to provide sufficient storage and better maintenance areas. The various building systems, including heating, ventilation, electrical, and lighting would be improved to be in compliance with applicable building codes and regulations.

Construction of the suggested modifications will follow.

Project History: The main facilities such as Main Plant Maintenance Building, Vehicle and Grounds Maintenance Building, Dick Storage Building, Machine Shop Building, Chain Storage Building, Fire Brick Storage Building, and miscellaneous maintenance shops in the Incineration and Dewatering complexes are spread throughout the WWTP. Some of the buildings are in bad condition and need rehabilitation. Based on the current GLWA maintenance structure with new optimization plan implemented the need for a consolidated and distributed maintenance area(s) be studied for design and rehabilitation of existing maintenance buildings or construction of new Maintenance Building.

Also, WRRF work environment is deteriorating and some of the roads and paving needs rehabilitation. The Plant wide Critical roads have been paved under the PC-783 contract. Other items identified as part of approved CIP-972 was consolidated with this CIP 1237.

Driver: 2 - Performance



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

New CIP# **216005**

Old CIP# **1237**

Challenges: Requires significant input from Operations and Maintenance due to changes in the organizational structure and functions since the original CIP proposal approved on 03/11/11. Also, require temporary work spaces to accommodate new rehabilitation of the existing maintenance areas.

Other Important Info: PC-744 Contract DWP-1022: Space Utilization Study, DWP-1007, DWP-1046, PC-787, DWP-1047, DWP-1021, DWP-1074, CIP 1221, CIP 1285, NAS 2010, 2013, and 2016

Related Project: PC-783, PC-789, PC-790, and PC-798A



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

Phase Overview

Phase Title Rehabilitation of the Main Plant Maintenance Building, Replacement of Various Plant Maintenance Areas and Work Environment Improvement

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

PPAT (Phase Program/Allowance Task) Information

Phase Status: Future Planned Start

PPAT CIP Number

Start Date: 9/11/2020

PPAT SOW

End Date: 10/18/2025

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Change PPAT PM

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

Phase Overview

Phase Title Rehabilitation of the Main Plant Maintenance Building, Replacement of Various Plant Maintenance Areas and Work Environment Improvement

Phase Category: C

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 11/3/2022

End Date: 10/18/2025

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	Rehabilitation of the Main Plant Maintenance Building, Replacement of Various Plant Maintenance Areas and Work Environment Improvement	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	0	0	0	0	0	0	0	

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
Task Name	Start Date	Duration	End Date	
Scope Development	1/6/2022	180	7/5/2022	
Procurement	7/5/2022	120	11/2/2022	



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

New CIP# **216005**

Old CIP# **1237**

Task Name	Start Date	Duration	End Date
Project Execution	11/3/2022	1080	10/18/2025
Project Closeout	10/18/2025	60	12/17/2025

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	8/7/2019	180	2/3/2020
Procurement	2/3/2020	220	9/10/2020
Project Execution	9/11/2020	1863	10/18/2025
Project Closeout	10/18/2025	60	12/17/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	3	Moderate renewal or rehab nee
Performance (Service Level/Reli	3	Expected performance failures u
Regulatory (Environmental/Lega	3	Moderate to low impact on regu
O&M	3	Project will have significant impa
Public Health & Safety	3	Likely to address minor hazard is
Public Benefit	3	Moderate savings for GLWA
Financial	3	Will generate savings
Efficiency and Innovation	3	Significant Operational efficiency

Project Manager Weighted Score

60

Review Committee Score

Criteria	Score	Score Comment
Condition	3	Moderate
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	3	
O&M	3	
Public Health & Safety	3	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	3	

Review Committee Weighted Score

60

Describe Here the Changes from the 2018 CIP to 2019 CIP

Estimated cost changed with refined scope.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total



Rehabilitation of the Main Plant Maintenance Building & Other Maintenance Areas and Improvement of Work Environment

New CIP#

Old CIP#

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total	
2019			0	0	0	0	0	0	0	0	

CIP 216006: Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Pipelines & SFE Pump Station



New CIP# **216006**

Old CIP# **1381**

Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

PROJECT SUMMARY

- Innovation**
- MP Right Sizing**
- System Reliability**

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

Project Significance The utilities are vital to the operations of the WRRF. The integrity of these systems will be maintained with this project. 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. 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.

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/20/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Ali Khraizat

Project Classification Level 2: WRRF

Title: Manager

Project Classification Level 3: General Purpose

Phone: (313) 297-8819

Project Location: City of Detroit

Email: ali.khraizat@glwater.org

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: This project will include the study, design, and construction for the needed improvements to the SFE and Secondary Water pump stations. This includes required capacity, pumps, strainers, piping, controls, building improvements, and electrical supply. It is possible that the secondary water system may need to be relocated. 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. The distribution models for both water systems will also be updated. A redundant potable water feed to the WRRF will also be evaluated. The evaluation of all alternatives will include the ability to reduce energy and potable water usage.

This project will also include study, design and construction of the repair/replacement of the aging and corroded pipes, valves and fittings for the



Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

Potable Water Supply System, the Natural Gas system, the SFE system, and the Compressed Air System. The As Builts for all the utilities will be generated as part of this project.

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. The secondary water system headworks was rehabilitated in 2006. However, due to moisture and chlorine in the room air, there has been significant corrosion of the piping, valves and other equipment. A complete rehabilitation of secondary water system headworks is required.

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.

Driver: 1 - Condition

Challenges: Maintaining the adequate supply of SFE and Secondary Water to the other treatment processes during construction of the SFE improvements, will be the most significant challenge on this project. Temporary air, water, natural gas system shutdowns may also be required to perform the work.

Other Important Info: *Innovation note: Low-hanging fruit - re-use SFE for chlorination/ dechlorination; need package plant to condition SFE.

Related Project: There are no other specific projects for the SFE and Secondary Water pump stations that need to be coordinated with, however many other projects require SFE and Secondary Water and the ability to consistently supply the required quantities will need to be coordinated with these projects during construction of the improvements.



Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

Phase Overview

Phase Title Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 9/13/2019

End Date: 10/19/2024

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 11/4/2021

End Date: 10/19/2024

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

Phase Expenses

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	<input type="text"/>
Phase Title	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System	PPAT CIP Number	<input type="text"/>	Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			1,500	3,500	500	500	250
GLWA Salaries			150	350	50	50	25
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	60	140	20	20	10
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	8	18	2	2	1
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	1,718	4,008	572	572	286



Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No		
Phase Title	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System		PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					5,840	15,000	21,000
Engineering Services							
GLWA Salaries					526	1,350	1,890
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	0	0	0	210	540	756
Current Phase Non-Personnel Expenses	0	0	0	0	26	68	94
Current Phase Total	0	0	0	0	6,602	16,958	23,740

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	1,718	4,008	7,174	17,530	24,026

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No				
Cost Est Class				
	Task Name	Start Date	Duration	End Date
	Scope Development	2/7/2020	660	11/28/2021
	Procurement	11/30/2021	180	5/29/2022
	Project Execution	5/30/2022	1080	5/14/2025
	Project Closeout	5/15/2025	60	7/14/2025



Rehabilitation of Potable Water, Screened Final Effluent (SFE), Natural Gas, Secondary Water System and Compressed Air Pipelines & SFE Pump Station

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	7/1/2019	220	2/6/2020
Project Execution	2/7/2020	1923	5/14/2025
Project Closeout	5/15/2025	60	7/14/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Asset has exceeded its design se
Performance (Service Level/Reli	4	Expected performance failures u
Regulatory (Environmental/Lega	4	Regulatory Compliance failure w
O&M	4	Project will have significant impa
Public Health & Safety	4	Likely to address significant haza
Public Benefit	3	Moderate additional savings
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Right sizing system will have sign

Project Manager Weighted Score

80.8

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	4	
Public Health & Safety	4	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Review Committee Weighted Score

78.6

Describe Here the Changes from the 2018 CIP to 2019 CIP

Combined CIP 1140 (New number 216003) with this CIP 1381(New number 216006). Therefore, the total estimated cost for this CIP has changed.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			1,700	2,000	12,000	15,600	16,279	4,141		51,720
2019			0	0	1,718	4,008	7,174	17,530	24,026	54,456

CIP 216007: DTE Primary Electric 3rd Feed Supply to WRRF



DTE Primary Electric 3rd Feed Supply to WRRF

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

DTE Primary Electric 3rd Feed Supply to WRRF

Project Significance GLWA's WWTP will have a redundant primary electrical service to power the WRRF equipment.

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/20/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Phillip Kora

Project Classification Level 2: WRRF

Title: Engineer

Project Classification Level 3: General Purpose

Phone: (313) 297-5909

Project Location: City of Detroit

Email: Philip.Kora@glwater.org

Fund: 5421

Manager: Philip Kora

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: The scope of this design-build project includes design and construction of 3rd 120 kV primary electric supply transmission line owned 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. The design-build services also include securing the property right-of-way easements from the property owners, as well as the design and construction of power transmission supply line. This primary transmission power line will energize the already installed new 120-13.8 industrial substation owned by GLWA near EB-1.

Project History: The WRRF has been supplied primary electrical power through the DTE Maxwell Switching Station via two power supply lines Maxwell 1 and Maxwell 2. The two main electrical buildings at the WRRF which feed the primary and secondary facilities are Electrical Building 1 and 2 (EB-1 and EB2). EB2 supply electrical power to the pump station #1 and all the primary treatment facilities. EB1 supply power to pump station #2, secondary treatment facilities, dewatering, incineration and all other remaining facilities. The City of Detroit's Public Lighting Department (PLD) provided a redundant 24kV back-up electrical services to EB2 through the City of Detroit 24kV industrial substation. In the event of DTE power supply failure the PLD 24kV power supply line provided redundancy and reliability to EB2. The back-up power supply by PLD at EB-2 required a manual switch over in the event of DTE power failure. The City of Detroit's PLD discontinued its power generation in the late 1980's. PLD also started curtailing electrical power supply distribution to its customers. The study by HRC in 1988 and later by Metcalf & Eddy in the early 90's during design and construction of Pump Station # 2 project identified the need for a 3rd primary electrical supply line. In order to provide reliable and redundant



DTE Primary Electric 3rd Feed Supply to WRRF

primary electric power supply to the WRRF after the September 8, 2011 power failure event, GLWA initiated a consulting services contract “CS-1449 Underground Electrical Duct Bank Repair and EB-1, EB-2 and EB-10 Primary Power Services Improvements at the WWTP”. This CS-1449 scope required to study and design reliable and redundant primary electrical power system improvements. The study recommended to abandon PLD’s 24kV back-up electric power supply to EB-2 and replace with a 3rd power supply feed line from DTE’s Waterman substation. In addition to the 3rd power feed line, the study also recommended a new 120-13.8 kV transformer near EB-1 and a new 15kV power supply line to EB-2, to address power redundancy and reliability. Construction of the primary power services improvements design through CS-1449 were procured through contract PC-783. The contract PC-783 in the 1st quarter of 2016 abandoned and removed the 24kV power feed line and industrial substation owned by PLD. On May 29, 2012, GLWA signed a letter of agreement with DTE to provide a 3rd 120kV feed transmission line owned by DTE (paid by GLWA) to a new 120-13.8 kV industrial substation built and owned by GLWA. The DTE agreed to obtain all required property right-of-way and easements for the route with reasonable effort per the agreement with GLWA. The PC-783 contract allocated \$1.30 Million budget for DTE to execute these services. GLWA, through construction contract PC-783, has already installed a new 120-13.8 industrial substation near EB-1, a new 15kV power supply line from the new transformer to EB-2, and removed 24kV back-up electrical service line and industrial substation owned by PLD. However, DTE failed to get property right-of-way and easements for the route. DTE’s original design route for transmission line was along the railroad tracks but the rail company declined to provide right-of-way for DTE’s new transmission line. DTE later planned a longer transmission route to buy property from private owners, but a property owner increased the price sensing urgency for GLWA. The new cost estimate by DTE for this new transmission line is \$4.3 Million. GLWA’s WRRF requires a reliable and redundant electrical power supply in order to be in compliance with NPDES permit requirements. The disconnection and removal of backup power supply from PLD leaves GLWA vulnerable for power failure and this urgent power supply line needs to be installed at the earliest. In order to speed design and construction GLWA is proposing a design-build project delivery method for the 3rd power supply line project. Presently there is no true redundant primary electrical service feed line to the WRRF, both the primary electric supply lines originate from the DTE Maxwell Switching Station. GLWA’s General Counsel is currently working on utilizing the “Condemnation Process” to acquire easement from the private property owners for this route.

Driver: 3 - Regulatory

Challenges: Negotiation with private property owners and testing of the automatic switch over will require co-ordination with operations.

Other Important Info: n/a

Related Project: PC-783 project.



DTE Primary Electric 3rd Feed Supply to WRRF

Phase Overview

Phase Title DTE Primary Electric 3rd Feed Supply to WRRF

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 6/6/2018

End Date: 6/6/2019

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 7/27/2016

Cost Estimation Source:

Cost Estimation Prep By: Tarlochan Bhullar

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE

Construction

BUDGET

Wastewater

Contract No

Phase Title DTE Primary Electric 3rd Feed Supply to WRRF

PPAT CIP Number

Phase Status Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		1,771	1,173	2,942			
Engineering Services							
GLWA Salaries		159	106	265			
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	64	42	106	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	8	5	13	0	0	0



DTE Primary Electric 3rd Feed Supply to WRRF

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2,002	1,326	3,326	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2,002	1,326	3,326	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	7/1/2017	400	8/5/2018
Procurement	8/5/2018	180	2/1/2019
Project Execution	2/2/2019	547	8/2/2020
Project Closeout	8/3/2020	60	10/2/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	Immediate replacement/rehabili
Performance (Service Level/Reli	5	High Risk of Performance Failure
Regulatory (Environmental/Lega	5	Imminent risk of causing permit
O&M	2	Repair of equipment will cost m
Public Health & Safety	5	Catastrophic failure w/safety/he
Public Benefit	5	Additional Savings for GLWA
Financial	5	Project will result in avoidance o
Efficiency and Innovation	3	Project will have a moderate im

Project Manager Weighted Score

89.8

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	5	
Regulatory (Environmental/Legal)	5	
O&M	2	
Public Health & Safety	4	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	1	

Review Committee Weighted Score

82.8

Describe Here the Changes from the 2018 CIP to 2019 CIP



DTE Primary Electric 3rd Feed Supply to WRRF

New CIP# **216007**

Old CIP# **1402**

The estimated cost went down because some of the scope was already done. The project has changed from Design/Build to Construction only.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			3,500	3,500						7,000
2019		15	0	2,002	1,326	3,326	0	0	0	6,669

**CIP 222001: Oakwood District Intercommunity Relief Sewer
Modification at Oakwood District**



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

- PROJECT SUMMARY
- Innovation
 - MP Right Sizing
 - System Reliability

Project Status

Project Status Guide:
 Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Project Significance 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).

Year Added: 2014
Date Original BCE Prepared: 7/27/2016
Date BCE Last Updated: 10/20/2017
Project Engineer/Manager: Todd King
Title: Director - Field Services
Phone: (313) 926-8114
Email: Todd.King@glwater.org
Manager: Todd King
Managing Dept Field Services

CIP Type: Project
Budget: Wastewater
Project Classification Level 1: Wastewater
Project Classification Level 2: Field Services
Project Classification Level 3: Interceptors
Project Location: Multiple Counties
Fund: 5421
Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

Project History: 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

Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

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 through 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 area 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 1950's, to meet increased service needs in the far western sewer districts of the City of Detroit and neighboring communities of Wayne County and otherwise mitigate increased public health risks, the county (with endorsements from a coalition of these municipalities) commissioned construction of the 10'-0" cylinder Northwest Interceptor (NWI). The NWI was constructed in segments, phased over 10 years. Its alignment generally extends 15 miles northwest from its terminus near Fort and Bayside within the Oakwood District --largely following the original watercourse of main trunk of the Rouge thence northerly beneath the Southfield Freeway (M-39) to a connection with the tributary 7'-6" cylindrical Ford Road intercepting sewer--which transports upstream drainage from Detroit's Rouge River District as well as drainage from several hydraulically-connected suburban communities. The NWI's transport capacity, although initially sized to convey wet weather flows resulting up to the typical 10-year uniform rainstorm simulated across the collection system, contributes to ¼ or more of all annual tributary influent flows to the WRRF, on average--depending on prevailing transport capacities along its extensive run as well as limited transport capacities within the downstream ONWI.

It should be recognized that the sole hydraulic-connection from the Oakwood Sewer District for drainage to the NWI is via a drop manhole connection of the aforementioned 36" sanitary discharge main leading from the new (replacement) Oakwood pump station and integral CSO retention treatment basin built in 2011 (PC-755). This connection, which is located beneath Fort St just upstream of the above-mentioned 1950's hydraulic drop shaft structure located at Fort at Bayside with a connected 6'-3" siphon to the ONWI. For more information on Oakwood District refer to Section 2.4 of the linked Description of Sewer Service Districts from the 2003 Wastewater Master Plan, some subject to revisions, since the Oakwood Pump Station and CSO Control Facility was constructed in 2011. Also for further reference, refer to linked Oakwood District Sewer Maps.

Prior Drainage Plans; Continued Interim Plans As part of overall renovation, larger, deeper intercepting sewers and relief sewers were proposed to



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Oakwood District to alleviate the surcharging and flooding of basement. Contact PCS-79 (2011) implemented sewer modifications designed in the Oakwood Heights area as well as Junction Chamber No. 1 at the headworks (influent channels) to the new Oakwood pump station/CSO RTB just east of Pleasant Ave; PCS-80 (2012) implemented select designed relief and replacement sewers in tributary area to the existing 9'-0" - Liddesdale intercepting sewer. In addition, the proposed system also consisted of a replacement of the existing sewer systems through the district area. The existing sewer system generally consists of sewer line located behind homes, which is connecting sanitary flows from homes and storm flows from the catch basins located in the street.

Previously, GLWA authorized a new task to Applied Science, Inc. (ASI) under CS-1482 to perform the baseline hydraulic and hydrologic analysis for the impacted areas of the Oakwood District based on the recent condition of the site, such as conversion of the green space by the Marathon Oil Company, current hydrologic factors given the current land use, and assessment of other land and abandoned properties.

Moreover, extended efforts have been undertaken by ASI, as engineering representative of Wayne County, and GLWA to address wet weather capacity needs for the intercommunity districts tributary to GLWA's NWI and the county's Rouge Valley Interceptor (1965) illustrated on above map)--which are hydraulically-connected with a passive structure (B-097) built in the 1960's at their crossing (i.e., double 6'-6" siphons of the RVI beneath the NWI's alignment) in proximity of Pleasant Ave and Oakwood Ave intersection.

Driver: 2 - Performance

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: 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.

Related Project: CS-1482, Oakwood District Analysis (ongoing) ; CS-1522 (DWSD), Green Infrastructure; Wastewater Master Plan (GLWA CS-036) ; CS-1525, Regulatory Assistance



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Overview

Phase Title Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Category: C **Construction**

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 8/1/2021

End Date: 6/16/2024

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Category: S/D/CA **Study and Design and Construction Assistance**

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 11/6/2019

End Date: 6/12/2024

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Expenses

CURRENT PHASE	<input type="text" value="Construction"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text" value="NA"/>
Phase Title	<input type="text" value="Oakwood District Intercommunity Relief Sewer Modification at Oakwood District"/>	PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Future Planned Start"/>

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					4,589	8,920	17,651
Engineering Services							
GLWA Salaries							
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	4,589	8,920	17,651



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	NA
Phase Title	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services			10	1,372	1,372	1,372	2,714
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	10	1,372	1,372	1,372	2,714

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	10	1,372	5,961	10,292	20,365

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	7/1/2019	728	6/28/2021
		Procurement	6/28/2021	180	12/25/2021
		Project Execution	12/25/2021	1275	6/22/2025
		Project Closeout	6/22/2025	60	8/21/2025



Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	7/1/2019	91	9/30/2019
Procurement	9/30/2019	272	6/28/2020
Project Execution	6/28/2020	1820	6/22/2025
Project Closeout	6/22/2025	60	8/21/2025

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	1	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega)	2	
O&M	1	
Public Health & Safety	3	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Project Manager Weighted Score

51.8

Review Committee Score

Criteria	Score	Score Comment
Condition	1	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	2	
O&M	1	
Public Health & Safety	3	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Review Committee Weighted Score

51.8

Describe Here the Changes from the 2018 CIP to 2019 CIP

According to ASI Feb 2016 report, there are six projects that should be considered to address the issues within the Oakwood District. These total approximately \$38 million at a conceptual level of detail. The Wastewater Master Plan will review these projects in the context of the overall needs of the GLWA system and develop a comprehensive set of projects to address the Oakwood District. This project will be updated with the results of the Wastewater Master Plan when available.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018				550	2,750	5,500	2,200			11,000



New CIP#

Old CIP#

Oakwood District Intercommunity Relief Sewer Modification at Oakwood District

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2019			0	0	10	1,372	5,961	10,292	20,365	38,000

**CIP 222002: Detroit River Interceptor (DRI) Evaluation and
Rehabilitation**



New CIP# 222002

Old CIP# 1329

Detroit River Interceptor (DRI) Evaluation and Rehabilitation

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Project Significance 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.

Year Added: 2016

Date Original BCE Prepared: 10/11/2016

Date BCE Last Updated: 9/1/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: Field Services

Project Classification Level 3: Interceptors

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

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.

Driver: 1 - Condition

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.

Other Important Info: n/a



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

New CIP# **222002**

Old CIP# **1329**

Related Project: CON-183



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase Overview

Phase Title Con-183 Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase Category: DB

Design and Build

Budget: Wastewater

Contract Number: Con-183

Phase Status: Pending Close-out

Start Date: 10/1/2017

End Date: 6/30/2020

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Future Projects for DRI under SRF Funding

Phase Category: DB

Design and Build

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Contractor

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase Expenses

CURRENT PHASE	<input type="text" value="Design and Build"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text" value="Con-183"/>
Phase Title	<input type="text" value="Con-183 Detroit River Interceptor (DRI) Evaluation and Rehabilitation"/>	PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Pending Close-out"/>

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	2,200						
Engineering Services							
GLWA Salaries	22						
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	9	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2,232	0	0	0	0	0	0



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

CURRENT PHASE **Design and Build** BUDGET **Wastewater** Contract No **NA**

Phase Title **Future Projects for DRI under SRF Funding** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		1,084	8,052	10,187	10,187	10,187	2,491
Engineering Services							
GLWA Salaries							
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
		1,084	8,052	10,187	10,187	10,187	2,491

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2,232	1,084	8,052	10,187	10,187	10,187	2,491

Phase Tasks and Dates				
Phase Category	DB	Design and Build		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No	NA			
Cost Est Class				
	Task Name	Start Date	Duration	End Date
	Scope Development	10/1/2017	91	12/31/2017
	Procurement	12/31/2017	272	9/29/2018
	Project Execution	9/29/2018	1248	2/28/2022
	Project Closeout	2/28/2022	30	3/30/2022



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

Phase Category	DB
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	Con-183
Cost Est Class	

Design and Build

Task Name	Start Date	Duration	End Date
Scope Development	10/1/2017	91	12/31/2017
Procurement	12/31/2017	272	9/29/2018
Project Execution	9/29/2018	1248	2/28/2022
Project Closeout	2/28/2022	90	5/29/2022

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega)	4	
O&M	3	
Public Health & Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	2	

Project Manager Weighted Score

73.2

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	3	
O&M	1	
Public Health & Safety	3	
Public Benefit	4	
Financial	5	
Efficiency and Innovation	1	

Review Committee Weighted Score

65.4

Describe Here the Changes from the 2018 CIP to 2019 CIP

CON-183, DRI Repair/Rehabilitation in the Downtown Area is a project that is going for construction in 9/2017. GLWA has requested SRF funding for the rehabilitation of DRI. Availability of this funding is a deciding factor for the execution of the rest of the projects under this program. No projections are made.

Shifted FY2018 & 2019 funds for Future Projects for DRI under SRF Funding

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		321	10,000	5,000	5,000					20,321



Detroit River Interceptor (DRI) Evaluation and Rehabilitation

New CIP# **222002**

Old CIP# **1329**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2019		5	2,232	1,084	8,052	10,187	10,187	10,187	2,491	44,425

**CIP 222003: North Interceptor East Arm (NIEA) Evaluation and
Rehabilitation**



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **North Interceptor East Arm (NIEA) Evaluation and Rehabilitation**

Project Significance Evaluation of the existing condition of NIEA, and rehabilitation/replacement of portions with structural deficiencies based on the evaluation results are essential to optimize the transportation capacity of the GLWA collection system and to increase its service life

Year Added: 2016

CIP Type: Project

Date Original BCE Prepared: 3/3/2017

Budget: Wastewater

Date BCE Last Updated: 8/25/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Todd King

Project Classification Level 2: Field Services

Title: Director - Field Services

Project Classification Level 3: Interceptors

Phone: (313) 926-8114

Project Location: Multiple Counties

Email: Todd.King@glwater.org

Fund: 5421

Manager: Todd King

Cost Center: 892211

Managing Dept Field Services

PROJECT INFORMATION

Scope of Work: Provide CCTV and or sonar inspection of the NIEA 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, minimize the inflow and infiltration into the collection system, and to extend the service life.

Project History: The installation of some of the GLWA interceptors and sewers are dated back to 1912 under various contracts. NIEA inspection by NTH recently revealed structural deficiencies and sludge deposits. Detroit River Interceptor inspection was recently completed and there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection also 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.

Driver: 1 - Condition



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

New CIP# **222003**

Old CIP# **1332**

Challenges: NIEA may have flow control challenges for both inspection and rehabilitation.

Other Important Info: *Innovation note: Consider new techniques for assessment.

Related Project: PCI-4, PCI-18, PCI-19
CIP 222007 also on NIEA



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Phase Overview

Phase Title North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: OMID

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Phase Category: D

Design

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: OMID

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Phase Overview

Phase Title North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Phase Category: S

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: OMID

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other				10,120	11,130	2,760	

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	10,120	11,130	2,760	0

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other				550	530	150	

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	550	530	150	0



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

CURRENT PHASE	Study	BUDGET	Wastewater	Contract No	NA
Phase Title	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other				330	340	90	

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	330	340	90	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	11,000	12,000	3,000	0

Phase Tasks and Dates	
Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	
Construction	
Task Name	Start Date Duration End Date
Scope Development	
Procurement	
Project Execution	
Project Closeout	



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

New CIP# **222003**

Old CIP# **1332**

Phase Category	D
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Design

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

Phase Category	S
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Study

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega)	4	
O&M	3	
Public Health & Safety	3	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	2	

Project Manager Weighted Score

73.2

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	3	
O&M	1	
Public Health & Safety	3	
Public Benefit	4	
Financial	5	
Efficiency and Innovation	1	

Review Committee Weighted Score

65.4

Describe Here the Changes from the 2018 CIP to 2019 CIP



North Interceptor East Arm (NIEA) Evaluation and Rehabilitation

New CIP# **222003**

Old CIP# **1332**

This project is for the OMID portion of NIEA. No projects have been initiated yet. Projects under this program depend on the future ownership of this. No projections are made from a timing perspective.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			11,000	12,000	3,000					26,000
2019			0	0	0	11,000	12,000	3,000	0	26,000

**CIP 222004: Collection System Valve Remote Operation Structures
Improvements**



New CIP# **222004**
Old CIP# **1392**

Collection System Valve Remote Operation Structure Improvements

- PROJECT SUMMARY
- Innovation
 - MP Right Sizing
 - System Reliability

Project Status
Future Planned

Project Status Guide:
 Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Collection System Valve Remote Operation Structure Improvements**

Project Significance VR-Gates are operational elements in the collection system that help in minimizing the untreated overflows and maximizing the flows to the wastewater treatment plant and CSO control facilities.

Year Added: 2017

Date Original BCE Prepared: 7/28/2016

Date BCE Last Updated:

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: Field Services

Project Classification Level 3: Interceptors

Project Location: Multiple Counties

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: Evaluate the existing conditions of the VR-Gates and their structures, provide the necessary design for the replacement of the SCUBA actuators and rehabilitation of the structures, purchase and replace.

Project History: There are Valve Remote gates throughout the collection system that are installed in 1999 under PC-695. Most of the actuator components have reached their life expectancy and are hard to operate properly. VR-15 and VR-16 had great difficulty in controlling the flow and their SCUBA units were replaced with electrical actuators in 2016 under Small Capital Project SCP-SCC-019. Flow control is essential for the collection system flow management. These gate structures play vital roles in controlling the flow, increasing the storage capacity, and in meeting the NPDES permits.

Driver: 1 - Condition

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

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

Related Project: SCP-SCC-019, PC-695



Collection System Valve Remote Operation Structure Improvements

New CIP# **222004**

Old CIP# **1392**



Collection System Valve Remote Operation Structure Improvements

Phase Overview

Phase Title Collection System Valve Remote Operation Structures Improvements

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 1/1/2019

End Date: 6/30/2020

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Contractor

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Collection System Valve Remote Operation Structures Improvements

Phase Category: D

Design

Budget: Wastewater

Contract Number: NA

Phase Status: Closed Out

Start Date: 7/1/2018

End Date: 12/30/2018

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Collection System Valve Remote Operation Structure Improvements

Phase Overview

Phase Title

Phase Category: S

Budget: Wastewater

Contract Number: NA

Phase Status: Closed Out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		1,000	1,000				
Engineering Services							
GLWA Salaries		13	10				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	5	4	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	1	0	0	0	0	0



Collection System Valve Remote Operation Structure Improvements

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	1,019	1,014	0	0	0	0

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



Collection System Valve Remote Operation Structure Improvements

CURRENT PHASE	Study	BUDGET	Wastewater	Contract No	NA
Phase Title	Collection System Valve Remote Operation Structures Improvements	PPAT CIP Number		Phase Status	Closed Out

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	341						
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	341	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	341	1,019	1,014	0	0	0	0

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	10/11/2018	10	10/21/2018
		Procurement	10/21/2018	120	2/18/2019
		Project Execution	2/19/2019	413	4/7/2020
		Project Closeout	4/8/2020	83	6/30/2020



Collection System Valve Remote Operation Structure Improvements

New CIP# **222004**

Old CIP# **1392**

Phase Category	D
Budget	Wastewater
Phase Status	Closed Out
Contract No	NA
Cost Est Class	

Design

Task Name	Start Date	Duration	End Date
Scope Development	7/1/2018	10	7/11/2018
Procurement	7/12/2018	90	10/10/2018
Project Execution	10/11/2018	81	12/31/2018
Project Closeout	12/31/2018	60	3/1/2019

Phase Category	S
Budget	Wastewater
Phase Status	Closed Out
Contract No	NA
Cost Est Class	

Study

Task Name	Start Date	Duration	End Date
Scope Development	7/1/2018	10	7/11/2018
Procurement	7/12/2018	90	10/10/2018
Project Execution	10/11/2018	81	12/31/2018
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega	3	
O&M	4	
Public Health & Safety	4	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	3	

Project Manager Weighted Score

72.6

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	3	
O&M	5	
Public Health & Safety	3	
Public Benefit	2	
Financial	3	
Efficiency and Innovation	3	

Review Committee Weighted Score

68.2

Describe Here the Changes from the 2018 CIP to 2019 CIP



Collection System Valve Remote Operation Structure Improvements

New CIP# **222004**

Old CIP# **1392**

Study and Design from FY 2018 is moved to FY 2019. All expenses for study and design combined.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			341	1,000	1,422					2,763
2019			341	1,019	1,014	0	0	0	0	2,374

CIP 222005: Collection System Access Hatch Improvements



New CIP# **222005**

Old CIP# **1393**

Collection System Access Hatch Improvements

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Collection System Access Hatch Improvements

Project Significance Access Hatches are structures in the collection system to provide reliable access to buried equipment and pipe lines. Many are deteriorated and dangerous to operate.

Year Added: 2017

Date Original BCE Prepared: 7/28/2016

Date BCE Last Updated: 8/25/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: Field Services

Project Classification Level 3: Interceptors

Project Location: Multiple Counties

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: Locate the deteriorating access hatches, evaluate the existing conditions, provide the necessary replacement/ rehabilitation to minimize the inflow into the collection system and underground structures. Access hatches in the collection system are installed under various projects for providing access to underground vaults and equipment.

Project History: Access hatches in the collection system are installed under various projects for providing access to underground vaults and equipment.

Driver: 1 - Condition

Challenges: NA

Other Important Info: n/a

Related Project: Various



Collection System Access Hatch Improvements

Phase Overview

Phase Title

Phase Category: C

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	341	1,000	1,422				
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0



Collection System Access Hatch Improvements

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	341	1,000	1,422	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	341	1,000	1,422	0	0	0	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	3	
Regulatory (Environmental/Lega)	2	
O&M	3	
Public Health & Safety	4	
Public Benefit	5	
Financial	2	
Efficiency and Innovation	3	

Project Manager Weighted Score

65.8

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit)	3	
Regulatory (Environmental/Legal)	2	
O&M	2	
Public Health & Safety	4	
Public Benefit	4	
Financial	1	
Efficiency and Innovation	1	

Review Committee Weighted Score

56.4

Describe Here the Changes from the 2018 CIP to 2019 CIP



Collection System Access Hatch Improvements

New CIP# **222005**

Old CIP# **1393**

Need to discuss possible combining of CIP 1393, CIP 1357 and CIP 1409

222005 , 222006, 233001 combine into a program for CSO Outfall Rehabilitation

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			3,196	2,000	2,001					7,197
2019			341	1,000	1,422	0	0	0	0	2,763

CIP 222006: CSO Outfall Rehabilitation



CSO Outfall Rehabilitation

New CIP# 222006

Old CIP# 1409

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Reclassified

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

CSO Outfall Rehabilitation

Project Significance RECLASSIFIED BECAUSE PROJECT PROJECTED EXPENSES MOVED INTO NEW PROGRAM 260500. 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.

Year Added: 2017

Date Original BCE Prepared: 3/3/2017

Date BCE Last Updated: 8/25/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: SCC

Project Classification Level 3: Interceptors

Project Location: Multiple Counties

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Driver:

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

Other Important Info: n/a

Related Project: CIP 1357, CS-168



CSO Outfall Rehabilitation

New CIP# **222006**

Old CIP# **1409**

ALL PHASES TOTAL

PROJECT PRIORITIZATION SCORING

Project Manager Score

Review Committee Score

Project Manager Score

Project Manager Weighted Score	
72.8	

Review Committee Weighted Score	
72.8	

Describe Here the Changes from the 2018 CIP to 2019 CIP

**CIP 222007: North Interceptor East Arm (NIEA) Evaluation and
Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.**



New CIP# 222007
Old CIP# 1411

NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

Project Significance Rehabilitation and replacement program of the existing NIEA based upon structural deficiencies identified from the evaluation results. This is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 3/3/2017

Budget: Wastewater

Date BCE Last Updated: 8/25/2017

Project Classification Level 1: Wastewater

Project Classification Level 2: Field Services

Project Engineer/Manager: Todd King

Project Classification Level 3: Interceptors

Title: Director - Field Services

Project Location: City of Detroit

Phone: (313) 926-8114

Fund: 5421

Email: Todd.King@glwater.org

Cost Center: 892211

Manager: Todd King

Managing Dept Field Services

PROJECT INFORMATION

Scope of Work: Preliminary Scope of Work of the Project is as follows: Review available data, provide the necessary rehabilitation/replacement option, design and implement them to optimize the design capacity of the collection system, minimize the inflow and infiltration into the collection system, and extend the service life.

Project History: The installation of some of the GLWA interceptors and sewers are dated back to 1912 under various contracts. NIEA inspection upstream of this segment by NTH recently revealed structural deficiencies and sludge deposits. Recent Detroit River Interceptor and North West Interceptor inspections revealed that there were portions deteriorated with visible surface aggregates, attached encrustation and infiltration. Some trunk sewer inspection also 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

Driver: 1 - Condition

Challenges: NIEA may have flow control challenges for both inspection and rehabilitation.



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

New CIP# **222007**

Old CIP# **1411**

Other Important Info: *Innovation note: Consider new techniques for assessment.

Related Project: CIP 222003 also on NIEA



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

Phase Overview

Phase Title NIEA Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 1/2/2019

End Date: 6/30/2021

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title NIEA Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

Phase Category: D

Design

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 7/1/2018

End Date: 12/30/2020

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

Phase Expenses

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	NA
Phase Title	NIEA Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction				2,435	4,829	4,829	4,825
Engineering Services							
GLWA Salaries				70	70	70	
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	28	28	28	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	4	4	4	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	2,537	4,931	4,931	4,825



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

CURRENT PHASE	Design	BUDGET	Wastewater	Contract No	NA
Phase Title	NIEA Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.		PPAT CIP Number	Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services		4	760	758	758	758	741
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	4	760	758	758	758	741

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	4	760	3,295	5,689	5,689	5,566

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	4/28/2020	61	6/28/2020
		Procurement	6/28/2020	180	12/25/2020
		Project Execution	12/25/2020	1275	6/22/2024
		Project Closeout	6/22/2024	60	8/21/2024



NIEA Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.

Phase Category	D
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Design

Task Name	Start Date	Duration	End Date
Scope Development	7/1/2018	91	9/30/2018
Procurement	9/30/2018	272	6/29/2019
Project Execution	6/29/2019	1820	6/22/2024
Project Closeout	6/22/2024	90	9/20/2024

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega)	3	
O&M	4	
Public Health & Safety	3	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	4	

Project Manager Weighted Score

69.8

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	4	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	3	

Review Committee Weighted Score

72.8

Describe Here the Changes from the 2018 CIP to 2019 CIP

Moved \$7 M from FY 2018 to FY 2020. Inspection of this stretch of NIEA needs lots of coordination with OMID and is not completed yet. Inspection must be completed to reveal the existing conditions and then to plan on design and rehabilitation/ repair.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			7,000	7,000	7,000					21,000
2019			0	4	760	3,295	5,689	5,689	5,566	21,003

**CIP 232001: Fairview Pumping Station - Replace Four Sanitary
Pumps**



New CIP# 232001

Old CIP# 1241

Fairview Pumping Station - Replace Four Sanitary Pumps

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Fairview Pumping Station - Replace Four Sanitary Pumps**

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

Year Added: 2011

CIP Type: Project

Date Original BCE Prepared: 3/9/2011

Budget: Wastewater

Date BCE Last Updated: 9/26/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Jorge Nicolas

Project Classification Level 2: SCC

Title: Engineer

Project Classification Level 3: Pumping Stations

Phone: (313) 926-8130

Project Location: City of Detroit

Email: Jorge.Nicolas@glwater.org

Fund: 5421

Manager: Grant Gartrell

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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.

Project History: n/a

Driver: 1 - Condition

Challenges: N/A - Active

Other Important Info: n/a

Related Project: Wastewater Master Plan and ongoing discussions between GLWA and MDEQ regarding wet weather operational procedures.



Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Overview

Phase Title Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: consultant

Cost Estimation Prep By: Consultant Brown & Caldwell

Useful Life > 20Yrs Yes

Comments: Now CS-201

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

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

Phase Category: D/CA

Design & Construction Assistance

Budget: Wastewater

Contract Number: CS-1747

Phase Status: Active

Start Date: 7/5/2016

End Date: 10/5/2021

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: consultant

Cost Estimation Prep By: Consultant Brown & Caldwell

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Expenses

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	NA
Phase Title	Fairview Pumping Station - Replace Four Sanitary Pumps	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		11,600	13,920	3,480			
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	11,600	13,920	3,480	0	0	0



New CIP# **232001**

Fairview Pumping Station - Replace Four Sanitary Pumps

Old CIP# **1241**

CURRENT PHASE **Design & Construction Assistance** BUDGET **Wastewater** Contract No **CS-1747**

Phase Title **CS-1747 Fairview Pumping Station - Replace Four Sanitary Pumps** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	480	480	480	480			
GLWA Salaries	20	10	10	10			
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	8	4	4	4	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	508	494	494	494	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	508	12,094	14,414	3,974	0	0	0

Phase Tasks and Dates				
Phase Category	C			
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No	NA			
Cost Est Class	<input type="text"/>			
	Construction			
	Task Name	Start Date	Duration	End Date
	Scope Development	4/27/2016	765	6/1/2018
	Procurement	6/1/2018	92	9/1/2018
	Project Execution	9/1/2018	761	10/1/2020
	Project Closeout	10/1/2020	92	1/1/2021



Fairview Pumping Station - Replace Four Sanitary Pumps

Phase Category	D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-1747
Cost Est Class	

Design & Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	7/22/2015	124	11/23/2015
Procurement	11/23/2015	154	4/25/2016
Project Execution	4/25/2016	1620	10/1/2020
Project Closeout	10/1/2020	90	12/30/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega)	4	
O&M	3	
Public Health & Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	4	

Project Manager Weighted Score

72.8

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP

Updated Project Prioritization and project expenses. Also updated phase tasks and dates.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018	128	472	2,100	14,350	15,350					32,400
2019		778	508	12,094	14,414	3,974	0	0	0	31,768

CIP 232002: Freud & Conner Creek Pump Station Improvements



Freud & Conner Creek Pump Station Improvements

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Freud & Conner Creek Pump Station Improvements**

Project Significance 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.

Year Added: 2016

Date Original BCE Prepared: 10/12/2016

Date BCE Last Updated: 9/1/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: SCC

Project Classification Level 3: Pumping Stations

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: 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.

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 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



Freud & Conner Creek Pump Station Improvements

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

Driver: 2 - Performance

Challenges: Meeting the collection system transport capacity during the construction

Other Important Info: n/a

Related Project: CS-120 Freud and Connor Creek PS Improvements, CON-109, PO #s 3783,3784,3785,&3786



Freud & Conner Creek Pump Station Improvements

Phase Overview

Phase Title PO-3785 Freud PS Imprvmts

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PO-3785

Phase Status: Closed Out

Start Date: 9/30/2016

End Date: 6/30/2017

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM Todd King

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: Freud transformer T1 upgrades

Phase Overview

Phase Title PO-3786, Vacuum priming system validation

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PO-3786

Phase Status: Closed Out

Start Date: 9/30/2016

End Date: 6/30/2017

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: NA

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: Vacuum priming system validation



Freud & Conner Creek Pump Station Improvements

Phase Overview

Phase Title Construction phase from CS-120

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Contractor

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments: Construction Contract originating from CS-120.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title PO-3784, Roof upgrade and structural repairs for Conner Pump Station

Phase Category: C

Construction

Budget: Wastewater

Contract Number: PO-3784

Phase Status: Closed Out

Start Date: 9/30/2016

End Date: 6/30/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments: Roof upgrade and structural repairs for Conner Pump Station

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Freud & Conner Creek Pump Station Improvements

Phase Overview

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

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-120

Phase Status: Active

Start Date: 6/7/2017

End Date: 8/15/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

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

Phase Category: C

Construction

Budget: Wastewater

Contract Number: CON-109

Phase Status: Active

Start Date: 12/19/2016

End Date: 12/19/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

Freud Pump Rehabilitation and procurement of new pump and a switchgear.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Freud & Conner Creek Pump Station Improvements

New CIP# **232002**

Old CIP# **1315**

Phase Overview

Phase Title **PO-3783, Conner PLC upgrades**

Phase Category: **C**

Construction

Budget: **Wastewater**

Contract Number: **PO-3783**

Phase Status: **Closed Out**

Start Date: **9/30/2016**

End Date: **6/30/2017**

Phase Cost Allocation: **CTA**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date: **8/31/2017**

Cost Estimation Source: **Contractor**

Cost Estimation Prep By: **Biren Saparia**

Useful Life > 20Yrs **No**

Comments: **Conner PLC upgrades**

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **PO-3785**

Phase Title **PO-3785 Freud PS Imprvmts** PPAT CIP Number Phase Status **Closed Out**

Current Phase Fringe
Benefit Expenses

Current Phase Non-
Personnel Expenses

Current Phase Total



Freud & Conner Creek Pump Station Improvements

New CIP# **232002**

Old CIP# **1315**

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **PO-3786**
 Phase Title **PO-3786, Vacuum priming system validation** PPAT CIP Number Phase Status **Closed Out**

Current Phase Fringe Benefit Expenses

Current Phase Non-Personnel Expenses

Current Phase Total

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **NA**
 Phase Title **Construction phase from CS-120** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction					582	10,000	15,000
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
					0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
					0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
					582	10,000	15,000



New CIP# **232002**

Freud & Conner Creek Pump Station Improvements

Old CIP# **1315**

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	PO-3784
Phase Title	PO-3784, Roof upgrade and structural repairs for Conner Pump Station	PPAT CIP Number		Phase Status	Closed Out

Current Phase Fringe Benefit Expenses

Current Phase Non-Personnel Expenses

Current Phase Total

CURRENT PHASE	Study and Design and Construction Assistance	BUDGET	Wastewater	Contract No	CS-120
Phase Title	CS-120, Freud & Conner Creek Pump Station Improvements	PPAT CIP Number		Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	101	1,070		223	1,000	1,000	
GLWA Salaries	55	84					
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	22	34	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3	4	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	181	1,192	0	223	1,000	1,000	0



Freud & Conner Creek Pump Station Improvements

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	CON-109
Phase Title	CON-109, Freud & Conner Creek Pump Station Improvements		PPAT CIP Number	Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	1,203						
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1,203	0	0	0	0	0	0



Freud & Conner Creek Pump Station Improvements

New CIP# **232002**

Old CIP# **1315**

CURRENT PHASE		Construction				BUDGET		Wastewater		Contract No	PO-3783
Phase Title		PO-3783, Conner PLC upgrades				PPAT CIP Number				Phase Status	Closed Out
Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond				
Construction											
Engineering Services											
GLWA Salaries											
Materials											
Other											
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond				
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond				
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond				

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1,384	1,192	0	223	1,582	11,000	15,000

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Closed Out			
Contract No	PO-3783			
Cost Est Class				
		Task Name	Start Date	Duration
		Project Closeout	9/30/2016	273
				End Date
				6/30/2017



Freud & Conner Creek Pump Station Improvements

Phase Category	C
Budget	Wastewater
Phase Status	Active
Contract No	CON-109
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	11/15/2016	15	11/30/2016
Procurement	9/30/2016	0	9/30/2016
Project Execution	9/30/2016	400	11/4/2017
Project Closeout	11/5/2017	44	12/19/2017

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	PO-3784
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Project Closeout	9/30/2016	273	6/30/2017

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	10/1/2018	60	11/30/2018
Procurement	12/1/2018	97	3/8/2019
Project Execution	3/9/2019	1140	4/22/2022
Project Closeout	3/25/2022	30	4/24/2022

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	PO-3786
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Project Closeout	9/30/2016	273	6/30/2017

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	PO-3785
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Project Closeout	9/30/2016	273	6/30/2017



Freud & Conner Creek Pump Station Improvements

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-120
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	9/14/2018	95	12/18/2018
Procurement	12/18/2018	122	4/19/2019
Project Execution	4/19/2019	1098	4/21/2022
Project Closeout	1/12/2022	215	8/15/2022

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	5	
Regulatory (Environmental/Lega)	5	
O&M	3	
Public Health & Safety	3	
Public Benefit	4	
Financial	2	
Efficiency and Innovation	2	

Project Manager Weighted Score

75.8

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	5	
O&M	3	
Public Health & Safety	4	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	1	

Review Committee Weighted Score

79.6

Describe Here the Changes from the 2018 CIP to 2019 CIP

2017 Construction expenses were only \$2.77 M, so the rest of the funds are moved to future years. The construction project from CS-120 will be initiated in 2019, so \$1M from 2021 is moved to year 2020. We anticipate a much higher construction cost and will be available only after the BOD workshop. Once it is available we will request more funding for future years up to 2022.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		8,040	5,900	5,100	2,460	1,000				22,500
2019		2,101	1,384	1,192	0	223	1,582	11,000	15,000	32,482

CIP 232003: Northeast Pumping Station



Northeast Pumping Station

New CIP# 232003

Old CIP# 1331

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Northeast Pumping Station

Project Significance This project will include replacement of the inlet gate valves, installation of Pump No. 3 and new chopper pumps, repair of the original service elevator, rebuilding of the spare pumps, repair and upgrade of the wet well, repair and upgrade of the dry well, repair and upgrade of the Gate House air handling systems, emergency bypass of the station, etc.

Year Added: 2016

Date Original BCE Prepared: 10/13/2016

Date BCE Last Updated: 8/28/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: SCC

Project Classification Level 3: Pumping Stations

Project Location: City of Detroit

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: Provide basis of design, and final design for a complete rehabilitation for the station with an emergency bypass option. Provide construction of the emerging project and construction assistance during construction.

Project History: The Northeast Sewage Pumping Station was built under contract PC-216. It had only three sanitary pumps and another sewage pump was added under PC-736. Later on OMID added 2 more sewage pumps. Recently under OMID Contract-3, OMID performed the removal of existing discharge piping; installation of a new discharge pipe manifold system; structural alterations to accommodate filling the east and west sides of the existing discharge chamber to support deteriorated external walls, replacement of the NESPS roof structure over the east and west sides; placement of new concrete walls and beams to form a centralized discharge opening to the PCI-4 sewer, construction of precast concrete walls above the central chamber and precast roof slab panels for permanent access; and other associated work to accomplish the repairs etc.

This proposed rehabilitation project is to address the rest of the issues affecting the station which was built in 1969

Driver: 1 - Condition



Northeast Pumping Station

New CIP# **232003**

Old CIP# **1331**

Challenges: Meeting the collection system transport capacity during the construction

Other Important Info: *Innovation note: Include energy efficiency

Related Project: PC-216, PC-672, PC-736



Northeast Pumping Station

New CIP#

Old CIP#

Phase Overview

Phase Title Northeast Pumping Station

Phase Category: C

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: OMID

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date: 10/30/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

Construction

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Northeast Pumping Station

Phase Category: D

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: OMID

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date: 10/30/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

Design

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Northeast Pumping Station

New CIP# 232003

Old CIP# 1331

Phase Overview

Phase Title Northeast Pumping Station

Phase Category: S

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: OMID

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs No

Comments:

Study

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE Construction BUDGET Wastewater Contract No NA

Phase Title Northeast Pumping Station PPAT CIP Number Phase Status Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other					10,920	13,000	

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0



Northeast Pumping Station

New CIP# 232003

Old CIP# 1331

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	10,920	13,000	0

CURRENT PHASE **Design** BUDGET **Wastewater** Contract No **NA**

Phase Title **Northeast Pumping Station** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other				1,628			

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	1,628	0	0	0



Northeast Pumping Station

New CIP# 232003

Old CIP# 1331

CURRENT PHASE **Study** BUDGET **Wastewater** Contract No **NA**

Phase Title **Northeast Pumping Station** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other				780			

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	0	0	0	0	0	0	0
Current Phase Total	0	0	0	780	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	2,408	10,920	13,000	0

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			



Northeast Pumping Station

New CIP# 232003

Old CIP# 1331

Phase Category	D
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Design

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

Phase Category	S
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Study

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	3	
Regulatory (Environmental/Lega	4	
O&M	4	
Public Health & Safety	3	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	4	

Project Manager Weighted Score

79.6

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	5	
Regulatory (Environmental/Legal)	4	
O&M	4	
Public Health & Safety	4	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	4	

Review Committee Weighted Score

89

Describe Here the Changes from the 2018 CIP to 2019 CIP



Northeast Pumping Station

New CIP# **232003**

Old CIP# **1331**

This project may not be initiated in 2017 due to the ownership transfer. Pushed all projected expenses back one year. Did not make any changes to the existing BCE.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			2,408	10,920	13,000					26,328
2019			0	0	0	2,408	10,920	13,000	0	26,328

**CIP 233001: Collection System Backwater Gates and Regulator Gates
Rehabilitation**



Collection System Backwater Gates and Regulator Gates Rehabilitation

New CIP# 233001

Old CIP# 1357

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Reclassified

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Collection System Backwater Gates and Regulator Gates Rehabilitation

Project Significance RECLASSIFIED BECAUSE PROJECT EXPENSES MOVED INTO NEW PROGRAM 260500. Replacement of CSO outfall back water gate is essential to prevent the river inflow into the collection system. Many are missing and the rest of them have reached their life expectancy.

Year Added: 2017

Date Original BCE Prepared: 7/29/2016

Date BCE Last Updated: 9/5/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: SCC

Project Classification Level 3: In System Devices

Project Location: Multiple Counties

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: Replacement of CSO outfall back water gate is essential to prevent the river inflow into the collection system. Many are missing and the rest of them have reached their life expectancy. X Locate the CSO Outfall back water gates, evaluate the existing conditions, and provide the necessary replacement / rehabilitation to minimize the river flow into the collection system. X The installation of these structures are dated back to 1912 under various contracts. All back water gates were replaced in the late seventies and again 6 were replaced in the recent years under PC-698. Existing ones are past their service life. X Some outfalls are below the river elevation; installation may be challenging.

Project History: The installation of these structures are dated back to 1912 under various contracts. All back water gates were replaced in the late seventies and again 6 were replaced in the recent years under PC-698. Existing ones are past their service life.

Driver: 1 - Condition

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

Other Important Info: n/a



Collection System Backwater Gates and Regulator Gates Rehabilitation

New CIP# **233001**

Old CIP# **1357**

Related Project: PC-698



Collection System Backwater Gates and Regulator Gates Rehabilitation

Phase Overview

Phase Title Collection System Backwater Gates and Regulator Gates Rehabilitation

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Collection System Backwater Gates and Regulator Gates Rehabilitation

Phase Category: D

Design

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Collection System Backwater Gates and Regulator Gates Rehabilitation

New CIP# **233001**

Old CIP# **1357**

Phase Overview

Phase Title **Collection System Backwater Gates and Regulator Gates Rehabilitation**

Phase Category: S **Study**

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Engineering

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **NA**

Phase Title **Collection System Backwater Gates and Regulator Gates Rehabilitation** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



Collection System Backwater Gates and Regulator Gates Rehabilitation

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



Collection System Backwater Gates and Regulator Gates Rehabilitation

New CIP# **233001**

Old CIP# **1357**

CURRENT PHASE	Study	BUDGET	Wastewater	Contract No	NA
Phase Title	Collection System Backwater Gates and Regulator Gates Rehabilitation	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development			
		Procurement			
		Project Execution			
		Project Closeout			



Collection System Backwater Gates and Regulator Gates Rehabilitation

New CIP# **233001**

Old CIP# **1357**

Phase Category	D
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Design

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

Phase Category	S
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Study

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega	4	
O&M	3	
Public Health & Safety	3	
Public Benefit	4	
Financial	3	
Efficiency and Innovation	2	

Project Manager Weighted Score

71.2

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	1	
O&M	2	
Public Health & Safety	1	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	3	

Review Committee Weighted Score

46.2

Describe Here the Changes from the 2018 CIP to 2019 CIP



Collection System Backwater Gates and Regulator Gates Rehabilitation

New CIP# **233001**

Old CIP# **1357**

Need to discuss possible combining of CIP 1393, CIP 1357 and CIP 1409

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total	
2018			1,301	3,000	3,000	2,000				9,301	
2019			0	0	0	0	0	0	0	0	

**CIP 233002: Collection System In System Storage Devices (ISDs)
Improvement**



Collection System In System Storage Devices (ISDs) Improvement

New CIP# **233002**

Old CIP# **1391**

PROJECT SUMMARY

- Innovation**
- MP Right Sizing**
- System Reliability**

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Collection System In System Storage Devices (ISDs) Improvement

Project Significance ISDs are operational elements in the collection system that help in storing combined sewage during wet weather events to minimize the frequency and volume of the untreated overflows and to maximize the flows to the wastewater treatment plant and CSO control facilities.

Year Added: 2017

Date Original BCE Prepared: 7/28/2016

Date BCE Last Updated: 9/5/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: SCC

Project Classification Level 3: In System Devices

Project Location: Multiple Counties

Fund: 5421

Cost Center: 892211

PROJECT INFORMATION

Scope of Work: Assess the existing conditions of the ISD elements and their structures and rehabilitate/ replace.

Project History: 13 ISDs were installed in the GLWA combined sewers in 2003 under PC-747. No major rehabilitation has been done since then.

Driver: 1 - Condition

Challenges: These are operational elements, so flow control may be a challenge especially during wet weather periods.

Other Important Info: *Innovation note: May need to increase scope for dynamic control of in-line elements -- see U of M study.

Asset Numbers are -WS986810250861, WS986810250862, WS986810250863, WS986810250864, WS986810250865, WS986810250866, WS986810250867, WS986810250868, WS986810250869, WS986810250870, WS986810250871, WS986810250872, WS986810250873

Related Project: PC-747



Collection System In System Storage Devices (ISDs) Improvement

New CIP# **233002**

Old CIP# **1391**



Collection System In System Storage Devices (ISDs) Improvement

Phase Overview

Phase Title Collection System In System Storage Devices (ISDs) Improvement

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 12/15/2018

End Date: 6/30/2020

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Contractor

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Collection System In System Storage Devices (ISDs) Improvement

Phase Category: D

Design

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 7/1/2018

End Date: 12/1/2018

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: NA

Cost Estimation Prep By: NA

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Collection System In System Storage Devices (ISDs) Improvement

Phase Overview

Phase Title **Collection System In System Storage Devices (ISDs) Improvement**

Phase Category: S **Study**

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date: 1/1/2018

End Date: 5/31/2018

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: NA

Cost Estimation Prep By: NA

Useful Life > 20Yrs No

Comments:

Phase Expenses

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **NA**

Phase Title **Collection System In System Storage Devices (ISDs) Improvement** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction			300	1,971	986		
Engineering Services							
GLWA Salaries				20	10		
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	8	4	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	1	0	0	0



Collection System In System Storage Devices (ISDs) Improvement

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	300	2,000	1,000	0	0

CURRENT PHASE	Design	BUDGET	Wastewater	Contract No	NA
Phase Title	Collection System In System Storage Devices (ISDs) Improvement	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services		52	52				
GLWA Salaries		21	21				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	8	8	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	1	1	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	82	82	0	0	0	0



Collection System In System Storage Devices (ISDs) Improvement

New CIP# **233002**

Old CIP# **1391**

CURRENT PHASE	Study	BUDGET	Wastewater	Contract No	NA
Phase Title	Collection System In System Storage Devices (ISDs) Improvement	PPAT CIP Number		Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	75						
GLWA Salaries	8						
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	3	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	0	0	0	0	0	0	0
Current Phase Total	86	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	86	82	382	2,000	1,000	0	0

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	7/26/2021	62	9/26/2021
		Procurement	9/26/2021	180	3/25/2022
		Project Execution	3/25/2022	910	9/20/2024
		Project Closeout	9/20/2024	30	10/20/2024



Collection System In System Storage Devices (ISDs) Improvement

New CIP# **233002**

Old CIP# **1391**

Phase Category	D
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Design

Task Name	Start Date	Duration	End Date
Scope Development	12/29/2019	91	3/29/2020
Procurement	3/29/2020	272	12/26/2020
Project Execution	12/26/2020	1364	9/20/2024
Project Closeout	9/20/2024	30	10/20/2024

Phase Category	S
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	

Study

Task Name	Start Date	Duration	End Date
Scope Development	7/1/2018	91	9/30/2018
Procurement	9/30/2018	272	6/29/2019
Project Execution	6/29/2019	183	12/29/2019
Project Closeout	12/29/2019	30	1/28/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reli)	3	
Regulatory (Environmental/Lega)	3	
O&M	3	
Public Health & Safety	2	
Public Benefit	2	
Financial	1	
Efficiency and Innovation	3	

Project Manager Weighted Score

53.4

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	3	
O&M	3	
Public Health & Safety	1	
Public Benefit	2	
Financial	1	
Efficiency and Innovation	3	

Review Committee Weighted Score

50

Describe Here the Changes from the 2018 CIP to 2019 CIP



Collection System In System Storage Devices (ISDs) Improvement

New CIP# **233002**

Old CIP# **1391**

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			86	464	2,000	1,000				3,550
2019			86	82	382	2,000	1,000	0	0	3,550

**CIP 251002: Wastewater System Wide Instrumentation & Control
Software and Hardware Upgrade**



Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

Project Significance This Instrumentation & Controls (I&C) system upgrade is for the operating system and miscellaneous ovation hardware upgrades. It is necessary when the old OS is no longer supported by Microsoft. Ovation needs to be upgraded too.

Year Added: 2017

CIP Type: Project

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/20/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: General Purpose

Title: Engineer

Project Classification Level 3: General Purpose

Phone: (313) 297-9825

Project Location: Multiple Counties

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: Upgrade Ovation software and miscellaneous hardware. An evaluation for the upgrade will be conducted. During the evaluation of the upgrade, the study will also consider an evaluation of Ovation’s ultimate ability to meet GLWA’s future needs.
 Replace Obsolete/End of Life Allen Bradley PLC5 control systems at 3 CSO Facilities (Leib, St. Aubin, 7-Mile) and upgrade critical Instrumentation. New Controllers, HMI, network components and controls system integration.
 Upgrade Ovation at 4 CSO Site(Connor, Oakwood, Baby Creek and Belle Isle) and Upgrade critical Instrumentation. Implement high performance graphics and advance alarm management and advanced process control.
 Upgrade control rooms at WRRF and CSO Sites. New consoles, HVAC, Flooring, security enhancements and lighting.

Project History: GLWA is using an Ovation Control System. Ovation System utilizes Microsoft Windows based operating system. Anytime when Microsoft stops supporting an operating system, Ovation upgrades its software and miscellaneous hardware in order to be compatible with new windows based operating system. GLWA business practice has been not to upgrade ovation immediately and wait few years to upgrade.

Driver: 4 - O&M



Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

New CIP# **251002**

Old CIP# **1388**

Challenges: Co-ordinate with Plant and CSO operation for shutdown requests during the software and hardware upgrade.

Other Important Info: *Innovation note: Maximize automation, especially aeration decks -- see University of Michigan phosphorus study.

Related Project: Last upgrade was completed in 2014.



Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

Phase Overview

Phase Title Wastewater System Wide Instrumentation & Control Software and Hardware Upgrade

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 2/1/2018

End Date: 3/6/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title Wastewater System Wide Instrumentation & Control Software and Hardware Upgrade

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 4/5/2020

End Date: 3/26/2022

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services		765	450	200	100		
GLWA Salaries		77	45	20	10		
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	31	18	8	4	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	4	2	1	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	877	515	229	114	0	0



Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

New CIP# **251002**

Old CIP# **1388**

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No

Phase Title **Wastewater System Wide Instrumentation & Control Software and Hardware Upgrade** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction			1,892	6,000	3,000		
Engineering Services							
GLWA Salaries			170	540	270		
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	0	0	68	216	108	0	0
Current Phase Non-Personnel Expenses	0	0	8	27	14	0	0
Current Phase Total	0	0	2,138	6,783	3,392	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	877	2,653	7,012	3,506	0	0

Phase Tasks and Dates				
Phase Category	C			
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No	<input type="text"/>			
Cost Est Class	<input type="text"/>			
	Construction			
	Task Name	Start Date	Duration	End Date
	Scope Development	2/7/2019	450	5/2/2020
	Procurement	5/4/2020	180	10/31/2020
	Project Execution	11/1/2020	720	10/22/2022
	Project Closeout	10/23/2022	60	12/22/2022



Wastewater System-Wide Instrumentation & Control Software and Hardware Upgrade

New CIP# **251002**

Old CIP# **1388**

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	7/1/2018	220	2/6/2019
Project Execution	2/7/2019	1353	10/22/2022
Project Closeout	10/23/2022	60	12/22/2022

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Process functions require high le
Performance (Service Level/Reli	4	Significant positive impact on sys
Regulatory (Environmental/Lega	4	Risk of non compliance in near t
O&M	4	Significant positive impact on O
Public Health & Safety	3	Moderate positive impact
Public Benefit	3	Moderate savings for GLWA
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Project will remove significant o

Project Manager Weighted Score

75

Review Committee Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reliabilit	3	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	3	
Public Benefit	3	
Financial	3	
Efficiency and Innovation	4	

Review Committee Weighted Score

70.2

Describe Here the Changes from the 2018 CIP to 2019 CIP

Scope has increased per Operations requirements resulting in an increased estimated cost.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018						3,125	2,737			5,862
2019			0	877	2,653	7,012	3,506	0	0	14,048

**CIP 260100: Water Resource Recovery Facility, Lift Station and
Wastewater Collection System Structures Allowance**



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

WRRF, Lift Station and Wastewater Collection System Structures Allowance

Project Significance Funding required for unplanned, emergency and critical small capital projects in the entire wastewater system

Year Added: 2012

CIP Type: Allowance

Date Original BCE Prepared: 4/13/2017

Budget: Wastewater

Date BCE Last Updated: 9/20/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: Programs

Title: Engineer

Project Classification Level 3: Programs

Phone: (313) 297-9825

Project Location: Multiple Counties

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892111

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: This is an allowance for unplanned critical projects, equipment replacement/rehabilitation, critical asset replacement, energy saving projects, etc.. at the Wastewater Treatment Plant and other Wastewater Operation Facilities. Unplanned critical items include, but not limited to, mechanical, HVAC, electrical, instrumentation and control, demolition, earthwork, concrete, masonry, etc.

Project History: WRRF has audited twice in the past for all equipment and supporting facilities. These audits helped to assess equipment repair and future planning and execution of rehabilitation/replacement projects at WRRF facilities.

Driver: N/A - Allowance

Challenges: N/A - Allowance

Other Important Info:

Related Project: At present 2 capital projects has been identified to be tapped for CIP#1257 budget: (a) SCP-PC-014, Plant wide Replacement of Emergency Lighting and Exist Signs. The construction budget for this projects is \$1,178,743. The NTP was issued on 12/2/2016 and the Final Completion Date is 12/27/2017. (b) SCP-PC-016G, Replacement of Flow Meter at Neff Road Pumping Station. This project has recently been completed in March 2017.



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

CS -060 is also funded from this Allowance because it was started as an emergency due to the fire in Complex II of WRRF.



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Overview

Phase Title 260103 RFP-46280 Replace 4 DS-706 Centrifuges WWTP

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Closed Out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260103

PPAT SOW Replacement of DS-706 Centrifuges Back Drive 100 HP Motors, VFD's and Control Panels and Installation of Motor Protection Modules for Main Drive 300 HP Motors for Four (4) Sharples Centrifuges at Dewatering Complex II at the WRRF.

Change PPAT PM Beena Chackun

Phase Overview

Phase Title SCP-PC-010 Toolles Contracting - Replace Various Air Distribution Equip 260105

Phase Category: C

Construction

Budget: Wastewater

Contract Number: SCP-PC-010

Phase Status: Closed Out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260105

PPAT SOW Replacement of air distribution equipment for the grit and screening facility at Pump Station 2 at the WRRF

Change PPAT PM Beena Chackun



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Overview

Phase Title 260102 RFP 44380 Titus Welding Co - Replace Stairs - WRRF

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Closed Out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260102

PPAT SOW Address several safety hazards present within and around the Administration Building such as cracked parapet stones, uneven sidewalk pavers, cracked floors and unsafe door.

Change PPAT PM Beena Chackun

Phase Overview

Phase Title SCP-PC-014 Ferndale Electric Emergency Lighting - 260101

Phase Category: C

Construction

Budget: Wastewater

Contract Number: SCP-PC-014

Phase Status: Pending Close-out

Start Date: 5/25/2016

End Date: 12/27/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260101

PPAT SOW Plant-wide replacement of emergency lighting, exit signs, uninterruptible power supplies and batteries at the WRRF.

Change PPAT PM Beena Chackun



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Overview

Phase Title SCP-PC-016G, Z Contractors Inc, Neff Road Pumping Station Flowmeter Replacement - 260108

Phase Category: C

Construction

Budget: Wastewater

Contract Number: SCP-PC-016G

Phase Status: Pending Close-out

Start Date: 4/22/2016

End Date: 4/17/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments: No projected expense for 2018.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260108

PPAT SOW City of Grosse Pointe - Neff Road Pumping Station Sanitary Flowmeter Replacement

Change PPAT PM Beena Chackun

Phase Overview

Phase Title Unallocated S/D/CA - WRRF, Lift Station and Wastewater Collection System Structures Allowance

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 7/1/2018

End Date: 6/30/2023

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By: Engineer

Useful Life > 20Yrs No

Comments: Expecting Engineering Services for any Critical jobs for the next 5 years.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



WRRF, Lift Station and Wastewater Collection System Structures Allowance

Phase Overview

Phase Title Unallocated Construction - WRRF, Lift Station and Wastewater Collection System Structures Allowance

Phase Category: C **Construction**

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 7/1/2018

End Date: 6/30/2023

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs Yes

Comments: Expected Construction Cost from this Allowance for the next five years.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title 260104, RFB 46149, Installation of EB-25 Unit Substation at Incinerator Complex II, WRRF

Phase Category: C **Construction**

Budget: Wastewater

Contract Number:

Phase Status: Closed Out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260104

PPAT SOW Installation of EB-25 Unit Substation at Incinerator Complex II, WRRF

Change PPAT PM Beena Chackun



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Overview

Phase Title 260107, Pump Station 2 Replacement

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Pending Close-out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260107

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title 260109, RFB-46533, Weiss Construction, Rehab Valve Remote Flow Control Facility

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Closed Out

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260109

PPAT SOW Rehab Valve Remote Flow Control Facility

Change PPAT PM Gary Stoll



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# 260100

Old CIP# 1257

Phase Overview

Phase Title SCP-PC-015, SCP-PC-015, W-3 Construction, Overhead Door - 260111

Phase Category: C

Construction

Budget: Wastewater

Contract Number: SCP-PC-015

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260111

PPAT SOW Overhead Door

Change PPAT PM Beena Chackun

Phase Overview

Phase Title DWS-065, Tooles, Connor Creek CSO Control Facility Access Hatches 260112

Phase Category: C

Construction

Budget: Wastewater

Contract Number: DWS-065

Phase Status: Pending Close-out

Start Date: 12/5/2016

End Date: 7/3/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260112

PPAT SOW The scope of work includes installation of one access hatch on top of Conner Influent Channels and one near Roller Gates Area. Installation of Gravel access pad on top of existing Forebay roof slab was also part of the scope of work.

Change PPAT PM Kashmira Patel



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP#

Old CIP#

Phase Overview

Phase Title

Phase Category: C

Budget: Wastewater

Contract Number:

Phase Status: Active

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Current Phase Fringe
Benefit Expenses

Current Phase Non-
Personnel Expenses

Current Phase Total



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP#

Old CIP#

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	<input type="text" value="SCP-PC-010"/>
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Phase Title	<input type="text" value="SCP-PC-010 Toolles Contracting - Replace Various Air Distribution Equip 260105"/>	PPAT CIP Number	<input type="text" value="260105"/>	Phase Status	<input type="text" value="Closed Out"/>
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Current Phase Fringe Benefit Expenses

Current Phase Non-Personnel Expenses

Current Phase Total

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	<input type="text"/>
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Phase Title	<input type="text" value="260102 RFP 44380 Titus Welding Co - Replace Stairs - WRRF"/>	PPAT CIP Number	<input type="text" value="260102"/>	Phase Status	<input type="text" value="Closed Out"/>
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Current Phase Fringe Benefit Expenses

Current Phase Non-Personnel Expenses

Current Phase Total



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **SCP-PC-014**

Phase Title **SCP-PC-014 Ferndale Electric Emergency Lighting - 260101** PPAT CIP Number **260101** Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	920						
Engineering Services							
GLWA Salaries	83						
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	33	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	4	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1,040	0	0	0	0	0	0



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

CURRENT PHASE **Construction**

BUDGET **Wastewater**

Contract No **SCP-PC-016G**

Phase Title **SCP-PC-016G, Z Contractors Inc, Neff Road Pumping Station
Flowmeter Replacement - 260108**

PPAT CIP Number **260108**

Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

**Current Phase Fringe
Benefit Expenses**

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

**Current Phase Non-
Personnel Expenses**

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Total

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP#

Old CIP#

CURRENT PHASE **Study and Design and Construction Assistance**

BUDGET **Wastewater**

Contract No

Phase Title

PPAT CIP Number

Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	100	100	100	200	200	200	
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Total

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
100	100	100	200	200	200	0



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP#

Old CIP#

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	<input type="text"/>	
Phase Title	Unallocated Construction - WRRF, Lift Station and Wastewater Collection System Structures Allowance		PPAT CIP Number	<input type="text"/>	Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	1,000	1,000	1,000	2,000	2,000	2,000	
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1,000	1,000	1,000	2,000	2,000	2,000	

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	<input type="text"/>	
Phase Title	260104, RFB 46149, Installation of EB-25 Unit Substation at Incinerator Complex II, WRRF		PPAT CIP Number	<input type="text" value="260104"/>	Phase Status	Closed Out

Current Phase Fringe Benefit Expenses	
Current Phase Non-Personnel Expenses	
Current Phase Total	



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP#

Old CIP#

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Current Phase Fringe
Benefit Expenses

Current Phase Non-
Personnel Expenses

Current Phase Total

CURRENT PHASE BUDGET Contract No

Phase Title PPAT CIP Number Phase Status

Current Phase Fringe
Benefit Expenses

Current Phase Non-
Personnel Expenses

Current Phase Total



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

CURRENT PHASE **Construction**

BUDGET **Wastewater**

Contract No **SCP-PC-015**

Phase Title **SCP-PC-015, SCP-PC-015, W-3 Construction, Overhead Door - 260111**

PPAT CIP Number **260111**

Phase Status **Future Planned Start**

Current Phase Fringe Benefit Expenses

Current Phase Non-Personnel Expenses

Current Phase Total

CURRENT PHASE **Construction**

BUDGET **Wastewater**

Contract No **DWS-065**

Phase Title **DWS-065, Tooles, Connor Creek CSO Control Facility Access Hatches 260112**

PPAT CIP Number **260112**

Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	55						
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0						
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0						
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	55						



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	
Phase Title	260113, Walsh Construction, WRRF Fire Remediation	PPAT CIP Number	260113	Phase Status	Active
<p>Current Phase Fringe Benefit Expenses</p> <p>Current Phase Non-Personnel Expenses</p> <p>Current Phase Total</p>					

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	2,195	1,100	1,100	2,200	2,200	2,200	0	

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Active
Contract No	
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	DWS-065
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	12/5/2016	210	7/3/2017
Project Closeout	7/3/2017	60	9/1/2017



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	SCP-PC-015
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	10/16/2017	260	7/3/2018
Procurement	10/3/2018	120	1/31/2019
Project Execution	2/1/2019	1550	5/1/2023
Project Closeout	5/5/2023	60	7/4/2023



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	SCP-PC-016G
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	4/22/2016	360	4/17/2017
Project Closeout	4/17/2017	200	11/3/2017

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	SCP-PC-014
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	5/25/2016	581	12/27/2017
Project Closeout	12/27/2017	30	1/26/2018

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	SCP-PC-010
Cost Est Class	

Construction

Phase Category	C
Budget	Wastewater
Phase Status	Closed Out
Contract No	
Cost Est Class	

Construction



WRRF, Lift Station and Wastewater Collection System Structures Allowance

New CIP# **260100**

Old CIP# **1257**

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	10/16/2017	260	7/3/2018
Procurement	7/3/2018	210	1/29/2019
Project Execution	1/30/2019	1550	4/29/2023
Project Closeout	4/29/2023	60	6/28/2023

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Process functions require high le
Performance (Service Level/Reli	4	Significant positive impact on sys
Regulatory (Environmental/Lega	4	Risk of non compliance in near t
O&M	4	Significant positive impact on O
Public Health & Safety	3	Moderate positive impact
Public Benefit	3	Moderate savings for GLWA
Financial	3	Project will likely result in avoida
Efficiency and Innovation	4	Project will remove significant o

Project Manager Weighted Score

73

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		5,587	12,000	12,000	15,000	15,000	12,000			71,587
2019	2,024	12,734	2,195	1,100	1,100	2,200	2,200	2,200	0	25,753

**CIP 260200: Sewer and Interceptor Evaluation and Rehabilitation
Program**



New CIP# 260200

Old CIP# 1263

Sewer and Interceptor Rehabilitation Program

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

Sewer and Interceptor Rehabilitation Program

Project Significance Rehabilitation and replacement program of the existing sewers and interceptors based upon structural deficiencies identified from the revaluation results. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Year Added: 2013

Date Original BCE Prepared: 10/11/2016

Date BCE Last Updated: 9/5/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Program

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: Programs

Project Classification Level 3: Programs

Project Location: Multiple Counties

Fund: 5421

Cost Center: 882301

PROJECT INFORMATION

Scope of Work: 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.

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.

Driver: 1 - Condition



Sewer and Interceptor Rehabilitation Program

New CIP# **260200**

Old CIP# **1263**

Challenges: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

Other Important Info: n/a

Related Project: GLWA - CON-68, CON-149, CS-168, DWSD - DWS-889, DWSD-DWS-876, DWSD-DWS-901



Sewer and Interceptor Rehabilitation Program

Phase Overview

Phase Title CS-168, FK Engineering, Sewer and Interceptor Evaluation and Rehabilitation Program

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-168

Phase Status: Active

Start Date: 9/1/2017

End Date: 9/1/2020

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: FK Engineering Associates

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260202

PPAT SOW Study, design and construction administration service to perform the as needed rehabilitation of GLWA Conveyance System Sewers. The primary objective of this project is to conduct a focused geotechnical and structural investigation and develop an array of feasible alternatives.

Change PPAT PM Biren Saparia



Sewer and Interceptor Rehabilitation Program

Phase Overview

Phase Title CS-068, Sewer and Interceptor Evaluation and Rehabilitation Program

Phase Category: C

Construction

Budget: Wastewater

Contract Number: CS-068

Phase Status: Pending Close-out

Start Date: 10/25/2016

End Date: 4/25/2018

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

Sewer Inspection
Eastside Emergency Sewer Inspection
VR02 Upgrades
Conner CSO Backwater Upgrades (Nine)
Installation of the Weir on Conner Discharge Channel
Installation of Sluice Gate and control on the Discharge Channel

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260203

PPAT SOW Inspect Interceptors and Trunk Sewers for Possible Sludge Deposits and Structural Integrity.

Change PPAT PM Biren Sapia



Sewer and Interceptor Rehabilitation Program

Phase Overview

Phase Title PO-005030, Sewer and Interceptor Evaluation and Rehabilitation Program

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: PO-005030

Phase Status: Pending Close-out

Start Date: 8/25/2016

End Date: 6/30/2018

Phase Cost Allocation: CTA

Phase Financial Source: Bond

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: This includes Construction assistance to CON-183 (DRI Emergency under RenCen Center)

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260201

PPAT SOW Evaluate the results of the DRI inspection, propose repair/rehabilitation alternatives and to prepare construction document for bidding purposes.

Change PPAT PM Biren Saparia

Phase Overview

Phase Title UNALLOCATED, Sewer and Interceptor Evaluation and Rehabilitation Program

Phase Category: C

Construction

Budget: Wastewater

Contract Number: NA

Phase Status: Future Planned Start

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 8/31/2017

Cost Estimation Source: Contractor

Cost Estimation Prep By: Biren Saparia

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Sewer and Interceptor Rehabilitation Program

Phase Overview

Phase Title **CON-149, Emergency Sewer Repair**

Phase Category: **S/D/C**

Budget: **Wastewater**

Contract Number: **CON-149**

Phase Status: **Active**

Start Date: **7/17/2017**

End Date: **7/17/2019**

Phase Cost Allocation: **CTA**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date: **8/31/2017**

Cost Estimation Source: **Contractor**

Cost Estimation Prep By: **Biren Saparia**

Useful Life > 20Yrs **Yes**

Comments: **Conner PLC upgrades**

Study and Design and Construction

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM **Beena Chackun**

Phase Expenses

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No **CS-168**

Phase Title **CS-168, FK Engineering, Sewer and Interceptor Evaluation and Rehabilitation Program** PPAT CIP Number **260202** Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	353	1,079	913				
GLWA Salaries	97	84	60				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	39	34	24	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	5	4	3	0	0	0	0



New CIP# 260300

Old CIP# 1330

Scheduled Replacement Program of Critical Assets

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Scheduled Replacement Program of Critical Assets**

Project Significance This program is to perform the scheduled replacement for critical assets and planned small capital projects (SCP) at WRRF and WW operations

Year Added: 2016

CIP Type: Program

Date Original BCE Prepared: 8/2/2016

Budget: Wastewater

Date BCE Last Updated: 9/21/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: Programs

Title: Engineer

Project Classification Level 3: Programs

Phone: (313) 297-9825

Project Location: Multiple Counties

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: SRP implementation procedures includes replacement for key Equipment and facilities, prepare long- range replacement schedules, yearly budget Estimates, O & M annual costs, Equipment Replacement Criteria and conclusions and recommendations.

Project History: WRRF and CSOs have being audited twice in the past for all equipment and supporting facilities. These audits helped to assess equipment repair and future planning and execution of rehabilitation/replacement projects at those facilities.

Driver: 2 - Performance

Challenges: Depending on type of project, long term or short term projects equipment or part of process areas need to shut down.

Other Important Info: GIS, Section Maps and Gate Books are available for reference

Related Project: At present 2 capital projects has been identified to be tapped for CIP#1330 budget: (a) CON-143, Complex-II Incineration Building Roof Replacement construction project due to fire damage, design has been recently completed by NTH under emergency fire restoration.



Scheduled Replacement Program of Critical Assets

Phase Overview

Phase Title CON-143, Roof Replacement of Complex II

Phase Category: C

Construction

Budget: Wastewater

Contract Number: CON-143

Phase Status: Pending Close-out

Start Date: 7/24/2017

End Date: 12/14/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260301

PPAT SOW The scope of work includes but is not limited to the complete removal, disposal and replacement of the existing roofing on the Incinerator Complex II building at the GLWA WRRF.

Change PPAT PM Ali Khraizat

Phase Overview

Phase Title UNALLOCATED: Scheduled Replacement Program of Critical Assets

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 7/2/2018

End Date: 6/30/2023

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs No

Comments: Any new projects that needs Engineering Services

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



New CIP#

Old CIP#

Sewer and Interceptor Rehabilitation Program

CURRENT PHASE

BUDGET

Contract No

Phase Title

PPAT CIP Number

Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		2,000	2,000	11,400	11,400	11,400	11,400
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0

Current Phase Total

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2,000	2,000	11,400	11,400	11,400	11,400



Sewer and Interceptor Rehabilitation Program

CURRENT PHASE **Study and Design and Construction** BUDGET **Wastewater** Contract No **CON-149**

Phase Title **CON-149, Emergency Sewer Repair** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	6,200	7,400	7,400				
Engineering Services							
GLWA Salaries							
Materials							
Other							
Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0				
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0				
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	6,200	7,400	7,400				

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	7,751	10,601	10,400	11,400	11,400	11,400	11,400

Phase Tasks and Dates	
Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	NA
Cost Est Class	
Construction	



Sewer and Interceptor Rehabilitation Program

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CS-068
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	10/25/2016	730	10/25/2018
Project Closeout	10/25/2018	60	12/24/2018

Phase Category	S/D/C
Budget	Wastewater
Phase Status	Active
Contract No	CON-149
Cost Est Class	

Study and Design and Construction

Task Name	Start Date	Duration	End Date
Project Execution	7/14/2017	1096	7/14/2020
Project Closeout	7/14/2020	60	9/12/2020

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	PO-005030
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	8/25/2016	674	6/30/2018
Project Closeout	6/30/2018	60	8/29/2018

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-168
Cost Est Class	

Study and Design and Construction Assistance

PROJECT PRIORITIZATION SCORING



Sewer and Interceptor Rehabilitation Program

Project Manager Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reli	5	
Regulatory (Environmental/Lega	5	
O&M	3	
Public Health & Safety	5	
Public Benefit	5	
Financial	4	
Efficiency and Innovation	3	

Project Manager Weighted Score

87.6

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP

Prioritization codes were missing, so they were added. Continued program into 2023. Added \$23M.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		2,612	8,000	8,000	20,000	20,000	20,000			78,612
2019		3,397	7,751	10,601	10,400	11,400	11,400	11,400	11,400	77,749

CIP 260300: Scheduled Replacement Program of Critical Assets



New CIP# 260300

Old CIP# 1330

Scheduled Replacement Program of Critical Assets

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Scheduled Replacement Program of Critical Assets**

Project Significance This program is to perform the scheduled replacement for critical assets and planned small capital projects (SCP) at WRRF and WW operations

Year Added: 2016

CIP Type: Program

Date Original BCE Prepared: 8/2/2016

Budget: Wastewater

Date BCE Last Updated: 9/21/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Beena Chackunkal

Project Classification Level 2: Programs

Title: Engineer

Project Classification Level 3: Programs

Phone: (313) 297-9825

Project Location: Multiple Counties

Email: Beena.Chackunkal@glwater.or

Fund: 5421

Manager: Ali Khraizat

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: SRP implementation procedures includes replacement for key Equipment and facilities, prepare long- range replacement schedules, yearly budget Estimates, O & M annual costs, Equipment Replacement Criteria and conclusions and recommendations.

Project History: WRRF and CSOs have being audited twice in the past for all equipment and supporting facilities. These audits helped to assess equipment repair and future planning and execution of rehabilitation/replacement projects at those facilities.

Driver: 2 - Performance

Challenges: Depending on type of project, long term or short term projects equipment or part of process areas need to shut down.

Other Important Info: GIS, Section Maps and Gate Books are available for reference

Related Project: At present 2 capital projects has been identified to be tapped for CIP#1330 budget: (a) CON-143, Complex-II Incineration Building Roof Replacement construction project due to fire damage, design has been recently completed by NTH under emergency fire restoration.



Scheduled Replacement Program of Critical Assets

Phase Overview

Phase Title CON-143, Roof Replacement of Complex II

Phase Category: C

Construction

Budget: Wastewater

Contract Number: CON-143

Phase Status: Pending Close-out

Start Date: 7/24/2017

End Date: 12/14/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260301

PPAT SOW The scope of work includes but is not limited to the complete removal, disposal and replacement of the existing roofing on the Incinerator Complex II building at the GLWA WRRF.

Change PPAT PM Ali Khraizat

Phase Overview

Phase Title UNALLOCATED: Scheduled Replacement Program of Critical Assets

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 7/2/2018

End Date: 6/30/2023

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date: 10/2/2017

Cost Estimation Source:

Cost Estimation Prep By: Ali Khraizat

Useful Life > 20Yrs No

Comments: Any new projects that needs Engineering Services

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Scheduled Replacement Program of Critical Assets

Phase Overview

Phase Title UNALLOCATED: Scheduled Replacement Program of Critical Assets

Phase Category: C

Construction

Budget: Wastewater

Contract Number:

Phase Status: Future Planned Start

Start Date: 7/2/2018

End Date: 6/30/2023

Phase Cost Allocation: CTA

Phase Financial Source: I&E

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source: Contract

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: Any new projects for Construction under this CIP.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title SCP-CON-127, Lakeshore, Decommissioning of Existing Watermain and Ductwork Rehabilitation at WRRF

Phase Category: C

Construction

Budget: Wastewater

Contract Number: SCP-CON-127

Phase Status: Active

Start Date: 6/5/2017

End Date: 10/23/2017

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: Lakeshore

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number 260302

PPAT SOW

Change PPAT PM Beena Chackun



Scheduled Replacement Program of Critical Assets

New CIP# 260300

Old CIP# 1330

Phase Expenses

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	CON-143	
Phase Title	CON-143, Roof Replacement of Complex II		PPAT CIP Number	260301	Phase Status	Pending Close-out

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	1,779						
Engineering Services							
GLWA Salaries	160						
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
64	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
8	0	0	0	0	0	0

Current Phase Total

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
2,011	0	0	0	0	0	0



Scheduled Replacement Program of Critical Assets

CURRENT PHASE **Study and Design and Construction Assistance**

BUDGET **Wastewater**

Contract No

Phase Title

PPAT CIP Number

Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services				200	200	200	200
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Total

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	200	200	200	200



Scheduled Replacement Program of Critical Assets

CURRENT PHASE

BUDGET

Contract No

Phase Title

PPAT CIP Number

Phase Status

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction				2,000	2,000	2,000	2,000
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	2,000	2,000	2,000	2,000



Scheduled Replacement Program of Critical Assets

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	SCP-CON-127	
Phase Title	SCP-CON-127, Lakeshore, Decommissioning of Existing Watermain and Ductwork Rehabilitation at WRRF		PPAT CIP Number	260302	Phase Status	Active

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	147						
Engineering Services							
GLWA Salaries	10						
Materials							
Other							

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Current Phase Fringe Benefit Expenses	4	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	0	0	0	0	0	0	0
Current Phase Total	161	0	0	0	0	0	0

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2,172	0	0	2,200	2,200	2,200	2,200

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Active				
Contract No	SCP-CON-127				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development			
		Procurement			
		Project Execution	6/5/2017	140	10/23/2017
		Project Closeout	10/23/2017	60	12/22/2017



Scheduled Replacement Program of Critical Assets

Phase Category	C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout	7/1/2018	1825	6/30/2023

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CON-143
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	7/24/2017	143	12/14/2017
Project Closeout	12/14/2017	60	2/12/2018

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	7/1/2018	1825	6/30/2023
Project Closeout			

PROJECT PRIORITIZATION SCORING



Scheduled Replacement Program of Critical Assets

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Significant positive impact on sys
Performance (Service Level/Reli	3	Moderate risk of performance fa
Regulatory (Environmental/Lega	3	Moderate impact on regulatory i
O&M	4	Significant positive impact on O
Public Health & Safety	3	Moderate positive impact
Public Benefit	3	Moderate savings for GLWA
Financial	3	Project will likely result in avoida
Efficiency and Innovation	4	Project will remove significant o

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Project Manager Weighted Score

66.4

Review Committee Weighted Score

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		500	5,000	5,000	5,000	5,000	5,000			25,500
2019		56	2,172	0	0	2,200	2,200	2,200	2,200	11,028

**CIP 260400: Sewage Meter Design, Installation, Replacement and
Rehabilitation Program**



Sewage Meter Design, Installation, Replacement and Rehabilitation Program

New CIP# **260400**

Old CIP# **1344**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title **Sewage Meter Design, Installation, Replacement and Rehabilitation Program**

Project Significance Improving meter data reliability, ensuring accurate billing, improving customer service and allow high quality analysis of the system

Year Added: 2014

CIP Type: Program

Date Original BCE Prepared: 1/26/2016

Budget: Wastewater

Date BCE Last Updated: 10/6/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Chandan Sood

Project Classification Level 2: Programs

Title: Manager

Project Classification Level 3: Programs

Phone: (313) 267-9007

Project Location: Multiple Counties

Email: Chandan.Sood@glwater.org

Fund: 5421

Manager: Chandan Sood

Cost Center:

Managing Dept Systems Planning

PROJECT INFORMATION

Scope of Work: Replace the existing antiquated metering equipment with new metering equipment.

Project History: The GLWA sewer metering equipment is composed of various types of metering technology, including Magnetic Flow Tube, Partial Flume, Ultrasonic, Venturi, and Sonic Hydro ranager. Most of these meters have surpassed their life expectancy for accurate metering, and need to be replaced with new metering technology.

Driver: 2 - Performance

Challenges: Requires temporary shutdown of large sewers

Other Important Info: n/a

Related Project: n/a



Sewage Meter Design, Installation, Replacement and Rehabilitation Program

New CIP# **260400**

Old CIP# **1344**

Phase Overview

Phase Title **CON-179 Sewage Meter Design, Installation, Replacement and Rehabilitation Program**

Phase Category: S/D/C

Study and Design and Construction

Budget: Wastewater

Contract Number: CON-179

Phase Status: Active

Start Date: 8/8/2017

End Date: 8/7/2020

Phase Cost Allocation: CTA

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **No**

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title **Unallocated Sewage Meter Design, Installation, Replacement and Rehabilitation Program**

Phase Category: D/C

Design and Construction

Budget: Wastewater

Contract Number:

Phase Status: Active

Start Date:

End Date:

Phase Cost Allocation: CTA

Phase Financial Source:

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **No**

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



Sewage Meter Design, Installation, Replacement and Rehabilitation Program

New CIP#

Old CIP#

Phase Expenses

CURRENT PHASE	<input type="text" value="Study and Design and Construction"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text" value="CON-179"/>	
Phase Title	<input type="text" value="CON-179 Sewage Meter Design, Installation, Replacement and Rehabilitation Program"/>		PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Active"/>

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	500	1,700	1,700	1,700	1,000	1,000	1,000
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	500	1,700	1,700	1,700	1,000	1,000	1,000

CURRENT PHASE	<input type="text" value="Design and Construction"/>	BUDGET	<input type="text" value="Wastewater"/>	Contract No	<input type="text"/>	
Phase Title	<input type="text" value="Unallocated Sewage Meter Design, Installation, Replacement and Rehabilitation Program"/>		PPAT CIP Number	<input type="text"/>	Phase Status	<input type="text" value="Active"/>

Current Phase Fringe Benefit Expenses	
Current Phase Non-Personnel Expenses	
Current Phase Total	



Sewage Meter Design, Installation, Replacement and Rehabilitation Program

New CIP# **260400**

Old CIP# **1344**

ALL PHASES TOTAL

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
500	1,700	1,700	1,700	1,000	1,000	1,000

Phase Tasks and Dates

Phase Category	D/C
Budget	Wastewater
Phase Status	Active
Contract No	
Cost Est Class	

Design and Construction

Phase Category	S/D/C
Budget	Wastewater
Phase Status	Active
Contract No	CON-179
Cost Est Class	

Study and Design and Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	8/8/2017	1095	8/7/2020
Project Closeout	8/7/2020	60	10/6/2020

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	5	
Performance (Service Level/Reli)	4	
Regulatory (Environmental/Lega)	4	
O&M	4	
Public Health & Safety	4	
Public Benefit	4	
Financial	4	
Efficiency and Innovation	4	

Project Manager Weighted Score

82.4

Review Committee Score

Criteria	Score	Score Comment
Condition		
Performance (Service Level/Reliabilit		
Regulatory (Environmental/Legal)		
O&M		
Public Health & Safety		
Public Benefit		
Financial		
Efficiency and Innovation		

Review Committee Weighted Score



Sewage Meter Design, Installation, Replacement and Rehabilitation Program

New CIP# **260400**

Old CIP# **1344**

Describe Here the Changes from the 2018 CIP to 2019 CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		500	500	500	500	500	500			3,000
2019			500	1,700	1,700	1,700	1,000	1,000	1,000	8,600

CIP 260500: CSO Outfalls Rehabilitation



CSO Outfall Rehabilitation

New CIP# **260500**

Old CIP# **1409**

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Future Planned

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

CSO Outfall Rehabilitation

Project Significance 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.

Year Added: 2017

Date Original BCE Prepared: 3/3/2017

Date BCE Last Updated: 8/25/2017

Project Engineer/Manager: Mini Panicker

Title: Engineer

Phone: (313) 267-8996

Email: Mini.Panicker@glwater.org

Manager: Biren Saparia

Managing Dept SCC

CIP Type: Project

Budget: Wastewater

Project Classification Level 1: Wastewater

Project Classification Level 2: SCC

Project Classification Level 3: Interceptors

Project Location: Multiple Counties

Fund: 5421

Cost Center:

PROJECT INFORMATION

Scope of Work: 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.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Driver: 2 - Performance

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

Other Important Info: PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Related Project: CIP 1357, CS-168



CSO Outfall Rehabilitation

New CIP# **260500**

Old CIP# **1409**



CSO Outfall Rehabilitation

New CIP# **260500**

Old CIP# **1409**

Phase Overview

Phase Title **Collection System Backwater Gates, Regulator Gates Rehabilitation and CSO Access Hatch Improvements**

Phase Category: **C**

Construction

Budget: **Wastewater**

Contract Number: **NA**

Phase Status: **Future Planned Start**

Start Date:

End Date:

Phase Cost Allocation: **CTA**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date: **8/31/2017**

Cost Estimation Source: **Engineering**

Cost Estimation Prep By: **Biren Saparia**

Useful Life > 20Yrs **Yes**

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Comments: 233001 in 2018 CIP. Replacement of CSO outfall back water gate is essential to prevent the river inflow into the collection system. Many are missing and the rest of them have reached their life expectancy. Locate the CSO Outfall back water gates, evaluate the existing conditions, and provide the necessary replacement / rehabilitation to minimize the river flow into the collection system. The installation of these structures are dated back to 1912 under various contracts. All back water gates were replaced in the late seventies and again 6 were replaced in the recent years under PC-698. Existing ones are past their service life. Some outfalls are below the river elevation; installation may be challenging.



CSO Outfall Rehabilitation

New CIP# **260500**

Old CIP# **1409**

Phase Overview

Phase Title **Unallocated General CSO Outfall Rehabilitation**

Phase Category: **C**

Construction

Budget: **Wastewater**

Contract Number: **NA**

Phase Status: **Future Planned Start**

Start Date:

End Date:

Phase Cost Allocation: **CTA**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date: **8/31/2017**

Cost Estimation Source: **Contractor**

Cost Estimation Prep By: **Biren Saparia**

Useful Life > 20Yrs **Yes**

Comments:

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE

Construction

BUDGET

Wastewater

Contract No

NA

Phase Title

Collection System Backwater Gates, Regulator Gates Rehabilitation and CSO Access Hatch Improvements

PPAT CIP Number

Phase Status

Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		6	2,825	7,845	5,824		
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0		

Current Phase Non-Personnel Expenses

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0		



CSO Outfall Rehabilitation

New CIP# **260500**

Old CIP# **1409**

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	6	2,825	7,845	5,824		

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	NA
Phase Title	Unallocated General CSO Outfall Rehabilitation		PPAT CIP Number	Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		399	899	2,054	4,075	9,899	9,899
Engineering Services							
GLWA Salaries		70	70	70	70	70	70
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	28	28	28	28	28	28
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	4	4	4	4	4	4
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	501	1,001	2,156	4,177	10,001	10,001

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	507	3,826	10,001	10,001	10,001	10,001

Phase Tasks and Dates					
Phase Category	C	Construction			
Budget	Wastewater				
Phase Status	Future Planned Start				
Contract No	NA				
Cost Est Class					
		Task Name	Start Date	Duration	End Date
		Scope Development	7/1/2018	91	9/30/2018
		Procurement	9/30/2018	546	3/29/2020
		Project Execution	3/29/2020	730	3/29/2022
		Project Closeout	3/29/2022	90	6/27/2022



CSO Outfall Rehabilitation

New CIP# **260500**

Old CIP# **1409**

Phase Category	C	Construction
Budget	Wastewater	
Phase Status	Future Planned Start	
Contract No	NA	
Cost Est Class		

PROJECT PRIORITIZATION SCORING

Project Manager Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reli)	5	
Regulatory (Environmental/Lega)	3	
O&M	4	
Public Health & Safety	3	
Public Benefit	2	
Financial	4	
Efficiency and Innovation	4	

Project Manager Weighted Score

72.8

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit)	4	
Regulatory (Environmental/Legal)	4	
O&M	3	
Public Health & Safety	3	
Public Benefit	3	
Financial	4	
Efficiency and Innovation	4	

Review Committee Weighted Score

72.8

Describe Here the Changes from the 2018 CIP to 2019 CIP

Previous projected expenses from the 2018-2022 CIP for project 222006 are already included in the 2018 values below. An additional \$7,197 was moved from CIP 222005 into this program and \$9,301 moved from CIP 233001 into this ongoing program. This accounts for the perceived increase of \$16,498. In summary, all three projects (222005, 222006 & 233001) are now included in the Program and projected expenditures have remained the same.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018			6,000	6,000	6,000	6,000	6,000	6,000		36,000
2019			0	507	3,826	10,001	10,001	10,001	10,001	44,337

CIP 260600: CSO Facilities Improvement Program



CSO FACILITIES IMPROVEMENT PROGRAM

PROJECT SUMMARY

- Innovation
- MP Right Sizing
- System Reliability

Project Status

Active

Project Status Guide:

Active: One or more phases have started, including procurement
 New: First appearance in CIP
 Future Planned: No Phases have Started
 Cancelled-Closed: All Phases Have Officially Closed or Project Cancelled
 Pending Closeout: Project at Substantial Completion but not closed out
 Archived: Project closed or completed for more than one year
 Reclassified: Projects that have been merged with other projects

Project Title

CSO FACILITIES IMPROVEMENT PROGRAM

Project Significance 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.

Year Added: 2017

CIP Type: Program

Date Original BCE Prepared: 7/27/2016

Budget: Wastewater

Date BCE Last Updated: 9/19/2017

Project Classification Level 1: Wastewater

Project Engineer/Manager: Chris Nastally

Project Classification Level 2: WRRF

Title: Manager

Project Classification Level 3: CSO RTB & SDF

Phone: (313) 297-5922

Project Location: Multiple Counties

Email: christopher.nastally@glwater.o

Fund: 5421

Manager: Chris Nastally

Cost Center: 892211

Managing Dept WW Eng

PROJECT INFORMATION

Scope of Work: 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: Needs Assessment, Condition Assessment, and update to the 2013 Scheduled Replacement Plan (SRP); 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 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.

CSO FACILITIES IMPROVEMENT PROGRAM

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, 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.

Driver: Varies

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.

Other Important Info: (Replaces CIP1313).

Related Project: The proposed new CIP budget for rehabilitation for all the CSO RTB and SDF facilities is based on the 2016 Needs Assessment Study Report and condition assessment performed under CS-1499, Task 18. The condition assessment identified deficient process equipment, systems and deteriorating structural conditions that required near-term remedial work at the three RTB's: the Puritan-Fenkell Basin and dry weather pump station (completed in 1998 under PC-697), the Seven Mile (Completed in 1999 under PC-696) and the Conner Creek (completed in 2005 under PC-739). The 2016 Needs Assessment Facility walkthrough have identified that CSO RTB and SDF's at Hubbell Southfield, St. Aubin & Leib, Baby Creek and Bell Isle needs rehabilitation. The Puritan-Fenkell and Seven Mile RTB's will be combined with this new capital improvements plan for all the remaining CSO facilities. GLWA staff have identified that Conner Creek CSO facility rehabilitation is critical to the wastewater operation and few projects has initiated as an emergency repair work. Due to recent rain events under emergency repair activities the following scope items at GLWA's Conner Creek CSO RTB are ongoing; Install additional automation, continue repairs to existing automation, replace five sodium hypochlorite pumps, repair piping leaks and relocate piping for the flushing water system, replace 5 Accusonic meters upstream, replace electrical power and controls raceway above the RTB, replace emergency relief gates causing concrete damage, replace all disinfection valves, replace all insulation and heat taping for exposed sodium hypochlorite lines, replace all sodium hypochlorite mixers in the channels. The above Conner Creek CSO RTB facility emergency repair list include only operation critical rehabilitation needs to avoid flooding's, the remaining non critical rehabilitation needs identified in the Needs Assessment Report will be addressed through this proposed project at this facility.



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**

Phase Overview

Phase Title **TBD - S/D/CA/C**

Phase Category: **D/C**

Budget: **Wastewater**

Contract Number:

Phase Status: **Future Planned Start**

Start Date: **12/8/2018**

End Date: **1/14/2024**

Phase Cost Allocation: **83/17**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **No**

Design and Construction

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM **N/A**

Comments: This phase includes the following projects with preliminary scope identified: completion of a Needs Assessment, Condition Assessment, and Update of the Scheduled Replacement Plan; Structural Condition Assessment Design/Build, CSO Fire Alarm System Replacements, Flushing Improvements at Baby Creek, and lastly, construction dollars identified in FY 23 & beyond which focus at carrying out projects identified, and later designed, from the Needs Assessment/Condition Assessment and SRP Update project at the very beginning of this phase.



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# 260600

Old CIP# 1384

Phase Overview

Phase Title CON-144 - Rehabilitation of CSO RTB's

Phase Category: C

Construction

Budget: Wastewater

Contract Number: CON-144

Phase Status: Pending Close-out

Start Date: 2/28/2017

End Date: 11/30/2017

Phase Cost Allocation: 83/17

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: CON 144 Construction

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title CS-145 - S/D/Ca for Improvements to the CSO RTB's

Phase Category: S/D/CA

Study and Design and Construction Assistance

Budget: Wastewater

Contract Number: CS-145

Phase Status: Pending Close-out

Start Date: 3/21/2017

End Date: 12/31/2017

Phase Cost Allocation: 83/17

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments: S/D/CA CS 145.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



CSO FACILITIES IMPROVEMENT PROGRAM

Phase Overview

Phase Title DWS-065 - Rehabilitation of CSO RTB's (Replaces CIP1313)

Phase Category: C

Construction

Budget: Wastewater

Contract Number: DWS-065

Phase Status: Pending Close-out

Start Date:

End Date:

Phase Cost Allocation: 83/17

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs Yes

Comments: DWS-065 - Construction

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Overview

Phase Title CS-172 - Conner Creek CSO RTB Automation Improvements

Phase Category: D/CA

Design & Construction Assistance

Budget: Wastewater

Contract Number: CS-172

Phase Status: Active

Start Date: 7/1/2017

End Date: 9/23/2019

Phase Cost Allocation: 83/17

Phase Financial Source: DE

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs No

Comments: CS-172 Design Phase, moving to construction assistance phase.

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**

Phase Overview

Phase Title **CS-116 - Rehabilitation of Conner Creek CSO RTB Effluent Launder Gates & Emergency Relief Gates**

Phase Category: **D/CA**

Design & Construction Assistance

Budget: **Wastewater**

Contract Number: **CS-116**

Phase Status: **Active**

Start Date: **2/27/2017**

End Date: **9/23/2019**

Phase Cost Allocation: **83/17**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estimation Prep By:

Useful Life > 20Yrs **No**

Comments: **CS-116 - Design phase, moving to construction assistance.**

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**

Phase Overview

Phase Title **CON-234 (No may change) - Conner Creek CSO RTB Construction of Automation Improvements and Basin Effluent Gate Improvements (CS-116 & CS-172)**

Phase Category: **C**

Construction

Budget: **Wastewater**

Contract Number: **CON-234**

Phase Status: **Future Planned Start**

Start Date: **3/1/2018**

End Date: **9/23/2019**

Phase Cost Allocation: **83/17**

Phase Financial Source: **DE**

Lookup Cost Est Class:

Cost Estimation Date:

Cost Estimation Source:

Cost Estmation Prep By:

Useful Life > 20Yrs **Yes**

Comments: **CON-234 (No may change) Construction for CS 116 and CS-172**

PPAT (Phase Program/Allowance Task) Information

PPAT CIP Number

PPAT SOW

Change PPAT PM

Phase Expenses

CURRENT PHASE **Design and Construction** BUDGET **Wastewater** Contract No

Phase Title **TBD - S/D/CA/C** PPAT CIP Number Phase Status **Future Planned Start**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction		1,400	1,600	1,100	2,800	7,800	10,000
Engineering Services		805	3,100	1,000	1,300	1,300	1,000
GLWA Salaries		173	173	173	173	173	173
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	69	69	69	69	69	69

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	9	9	9	9	9	9



CSO FACILITIES IMPROVEMENT PROGRAM

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	2,456	4,951	2,351	4,351	9,351	11,251

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	CON-144
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Phase Title	CON-144 - Rehabilitation of CSO RTB's	PPAT CIP Number		Phase Status	Pending Close-out
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Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	643						
Engineering Services							
GLWA Salaries	57						
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	23	0	0	0	0	0	0

Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	3	0	0	0	0	0	0

Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	726	0	0	0	0	0	0



CSO FACILITIES IMPROVEMENT PROGRAM

CURRENT PHASE **Study and Design and Construction Assistance** BUDGET **Wastewater** Contract No **CS-145**

Phase Title **CS-145 - S/D/Ca for Improvements to the CSO RTB's** PPAT CIP Number Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	121						
GLWA Salaries	12						
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	5	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	139	0	0	0	0	0	0



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**

CURRENT PHASE **Construction** BUDGET **Wastewater** Contract No **DWS-065**

Phase Title **DWS-065 - Rehabilitation of CSO RTB's (Replaces CIP1313)** PPAT CIP Number Phase Status **Pending Close-out**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services							
GLWA Salaries							
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**

CURRENT PHASE **Design & Construction Assistance** BUDGET **Wastewater** Contract No **CS-172**

Phase Title **CS-172 - Conner Creek CSO RTB Automation Improvements** PPAT CIP Number Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	100						
GLWA Salaries	10						
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	4	0	0	0	0	0	0
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	0	0	0	0	0	0	0
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	114	0	0	0	0	0	0



CSO FACILITIES IMPROVEMENT PROGRAM

New CIP# **260600**

Old CIP# **1384**

CURRENT PHASE **Design & Construction Assistance**

BUDGET **Wastewater**

Contract No **CS-116**

Phase Title **CS-116 - Rehabilitation of Conner Creek CSO RTB Effluent
Launder Gates & Emergency Relief Gates**

PPAT CIP Number

Phase Status **Active**

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction							
Engineering Services	100	90	43				
GLWA Salaries	10	9	4				
Materials							
Other							

**Current Phase Fringe
Benefit Expenses**

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
4	4	2	0	0	0	0

**Current Phase Non-
Personnel Expenses**

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
0	0	0	0	0	0	0

Current Phase Total

FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
114	103	49	0	0	0	0



CSO FACILITIES IMPROVEMENT PROGRAM

CURRENT PHASE	Construction	BUDGET	Wastewater	Contract No	CON-234
Phase Title	CON-234 (No may change) - Conner Creek CSO RTB Construction of Automation Improvements and Basin Effluent Gate Improvements (CS-116 & CS-172)		PPAT CIP Number	Phase Status	Future Planned Start

Expense Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Construction	500	6,500	1,000				
Engineering Services							
GLWA Salaries	45	150	150				
Materials							
Other							

Current Phase Fringe Benefit Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	18	60	60				
Current Phase Non-Personnel Expenses	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	2	8	8				
Current Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	565	6,718	1,218				

ALL PHASES TOTAL	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
	1,658	9,277	6,218	2,351	4,351	9,351	11,251

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Wastewater			
Phase Status	Future Planned Start			
Contract No	CON-234			
Cost Est Class				
Task Name	Start Date	Duration	End Date	
Scope Development				
Project Execution	3/1/2018	540	8/23/2019	
Project Closeout	8/23/2019	60	10/22/2019	



CSO FACILITIES IMPROVEMENT PROGRAM

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	DWS-065
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution			
Project Closeout			

Phase Category	C
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CON-144
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	2/28/2017	275	11/30/2017
Project Closeout	11/30/2017	60	1/29/2018

Phase Category	D/C
Budget	Wastewater
Phase Status	Future Planned Start
Contract No	
Cost Est Class	

Design and Construction

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement	5/1/2018	220	12/7/2018
Project Execution	12/8/2018	1863	1/14/2024
Project Closeout	1/14/2024	60	3/14/2024



CSO FACILITIES IMPROVEMENT PROGRAM

Phase Category	D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-116
Cost Est Class	

Design & Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	2/27/2017	730	2/27/2019
Project Closeout	2/27/2019	60	4/28/2019

Phase Category	D/CA
Budget	Wastewater
Phase Status	Active
Contract No	CS-172
Cost Est Class	

Design & Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	7/1/2017	153	12/1/2017
Project Closeout	12/1/2017	60	1/30/2018

Phase Category	S/D/CA
Budget	Wastewater
Phase Status	Pending Close-out
Contract No	CS-145
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development			
Procurement			
Project Execution	3/21/2017	285	12/31/2017
Project Closeout	12/31/2017	60	3/1/2018

PROJECT PRIORITIZATION SCORING



CSO FACILITIES IMPROVEMENT PROGRAM

Project Manager Score

Criteria	Score	Score Comment
Condition	4	Asset has <25% of its design serv
Performance (Service Level/Reli	4	Expected performance failures u
Regulatory (Environmental/Lega	5	Imminent risk of causing permit
O&M	4	Significant Positive impact on O
Public Health & Safety	4	Significant positive impact on sta
Public Benefit	3	Likely to impact quality of life &
Financial	4	Project will likely result in avoida
Efficiency and Innovation	4	Process efficiency for a more rob

Project Manager Weighted Score
82

Review Committee Score

Criteria	Score	Score Comment
Condition	4	
Performance (Service Level/Reliabilit	4	
Regulatory (Environmental/Legal)	5	
O&M	4	
Public Health & Safety	5	
Public Benefit	5	
Financial	5	
Efficiency and Innovation	4	

Review Committee Weighted Score
90.6

Describe Here the Changes from the 2018 CIP to 2019 CIP

Costs for FY 2019 construction have increased due to the emergency nature of the required projects at the Conner Creek CSO Facility and to facilitate design and construction of new alarm systems for 8 of the CSO Facilities (excepting Oakwood - minor repairs) because those systems are not functional, or long since obsolete at this time requiring a lot of maintenance to stay in service. For FY20-FY22, the 2018 CIP identified various unallocated dollars in the CIP; however, no specific projects or improvements were not identified and subsequent RFPs to begin those projects were not developed. Therefore, the expected costs for those FY's has decreased to allow time over the next year or so to complete a full-scale Condition Assessment, Needs Assessment, and Update of the 2013 Scheduled Replacement Plan. Projects resulting out of the NA, CA, and SRP are expected to begin hitting the CIP construction dollars beginning in FY23. This allows time for RFP and RFB procurement periods as well as development of RFPs and subsequent design phases of a typical project. There are also anticipated improvements for structural condition assessment anticipated to occur over the next 2 Fys as a design/build project, and improvements to the Baby Creek Facility largely expected to be designed in FY 20 and FY21 and constructed in FY 22 and FY23. The time between allows for scope development, RFP, design, and RFB phases of a project before it begins construction. As other items such as the Master Plan and NPDES Permit come to, new projects will be identified aimed at achieving regulatory or other goals identified, which will ultimately affect CIP dollars later in the defined CIP period. During the time of completing a thorough condition assessment/needs assessment document for proper planning and execution of capital improvements, other emergent projects may arise as identified under the challenges section of this BCE.

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	Total
2018		3,520	2,247	6,400	9,000	7,200	3,610			31,977
2019		764	1,658	9,277	6,218	2,351	4,351	9,351	11,251	45,221

[Click to return to Appendix B contents](#)