



**Construction Work-in-Progress Quarterly Report
(Unaudited)**

As of December 31, 2018

For questions, please contact:

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March 15th, 2019**To Our Stakeholders:**

The contents of this report represent the financial presentation of construction work-in-progress activity for the Great Lakes Water Authority (GLWA) as of December 31, 2018. The information in this report presents a detailed snapshot and is important as we track the execution of the FY 2019–2023 Capital Improvement Plan (CIP) and develop the FY 2020–2024 CIP.

As we continue to refine this report to better communicate pertinent information to inform decision makers and stakeholders, content and formatting may be changed. We have successfully implemented a technology solution to improve direct labor capture accuracy, timeliness and ease in which labor costs are captured. This solution, named BigTime, was successfully launched in July 2018. Additionally, we have revamped the Construction Work-in-Progress (CWIP) rollforward in a manner we believe will be found more useful.

Report Contents and Organization

This report is divided into two sections: one for the Water System and one for the Wastewater System as identified in the table of contents. Each section includes analysis and reporting of the following:

Executive Summary: Presentation of spend information is necessary to report our progress on CIP projects.

Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Projects: A combination of commentary and analysis provides further insight into risk factors and project status. An excerpt from the CIP for each of the selected projects follows the commentary as further background information.

Construction Work-in-Progress Rollforward: This table provides a list of all projects in the CIP along with financial activity. This table may be used to revisit priorities, workload, and phasing.

Spending Plan Amendment Summary: The award of CIP contracts and the related execution thereof may result in deviations from the amount and timing of planned spend. Spending plan amendments are prepared to fund the related increase or decrease with either an adjustment to Capital Reserve or Program / Allowance accounts to amend the board approved fiscal year planned spend accordingly and to inform decision makers in the development of future Capital Improvement Plans.

Financial Information

All project amounts are unaudited. This means that direct contractor costs are generally included in these totals with most pay estimates entered through December 31, 2018. There may, however, be some pay estimates that lag. The totals do not include indirect overhead.

Budget vs. Plan

Generally, GLWA's CIP projects span two or more fiscal years. The GLWA Board of Directors adopts a biennial "budget" and a five-year capital improvement "plan".

- ✓ The adopted **budget** relates to operations and maintenance expense, annual fixed commitments such as debt service, and incremental adjustments to reserves. The budget provides authority to spend within defined amounts. The budget is also referred to as the "revenue requirement" for the utility.
- ✓ The CIP "budget" for the same biennial budget period above is based on the first two years of the CIP. Funding for these projects are established in the financial plan through a combination of bond proceeds and Improvement & Extension fund reserves
- ✓ After contracts are awarded at amounts variant from the CIP plan and more reliable anticipated spend data becomes available, the amended budget for the current fiscal year may increase or decrease by way of "Capital Reserve" budget amendments.
- ✓ The five-year capital improvement **plan** is a rolling plan that is updated at an administrative tracking level as projects move from estimated to actual bid numbers. An updated mid-cycle CIP would be presented to the Board for approval if the prioritization strategy was revised and/or the plan was in need of material revisions.

Future Enhancements

This report presents information that is readily available. Currently under development are enhancements that will provide the opportunity for improved CWIP reporting.

Monthly Capital Spend Projections – Implementation of an integrated master schedule of projects utilizing Primavera P6 is underway. The integrated master schedule, which is intended to be updated monthly, will provide a monthly snapshot of cost and schedule information related to the execution of projects as compared to our plan. In addition to an increased visibility to project status and spend, this joint effort with our engineering partners will also allow for improved accuracy of our Key Performance Indicator on rate of spending and more reliable communication with Treasury regarding monthly capital spend projections to allow for investment optimization.

Look Ahead Reporting – By way of the integrated master schedule, communication of planned scope development timing, planned durations for RFB/RFP solicitations as well as any planned design or construction starts/finish dates may be presented for a desired look ahead period.

WATER SYSTEM

Executive Summary

The rate of spend is a key performance indicator. The development of the FY 2019-2023 and related CIP budget for FY 2019 were based on anticipation of FY 2019 activity resulting in 100% of planned spend. The Water System spend for the period ending December 31, 2018 is 100.3% of the FY 2019 prorated board approved CIP spend and 89.8% of the FY 2019 amended spend. Detailed analysis behind the reasons and projects for which planned spend is amended from \$66,038,000 to \$73,707,885 is provided in the subsequent Spending Plan Amendment Summary section of this report. Numerous project designs have already and or will soon complete that will allow for the increased rate of construction spend to continue in FY 2019 and beyond.

		FY 2018 Amended Budget	FY 2018 Activity	FY 2018 as a Percent of Budget	FY 2019 Budget	FY 2019 Prorated (Six Months)	FY 2019 Activity (Six Months) (Unaudited)	FY 2019 as a Percent of Prorated Budget (Six Months) (Unaudited)
Water System Projects								
FY 2018 CIP Project Requests	\$	137,655,000	\$ 37,013,482	26.9%				
FY 2018 CIP Realigned Forecast as per 2019 CIP		40,043,000	37,013,482	92.4%				
FY 2019 Board Approved CIP Spend					\$ 66,038,000	\$ 33,019,000	\$ 33,103,669	100.3%
FY 2019 Amended Spend					73,707,885	36,853,943	33,103,669	89.8%

It should be noted that these interim reports have been prepared on a modified cash basis. This means that expenses may lag in vendor invoice receipt and posting. Known expenses, material in nature, have been accrued.

Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Projects

Of the total Water System Construction Bond spend for FY 2019 to date, **four projects account for \$15.5 million or 46.8% of the total spend.** Those projects are summarized in the following table. An analysis of each project and its related CIP summary follow the table. Note that the last page of this report provides a Glossary of Acronyms.

	Total Project Budget Estimate From FY 2019 - 2023 CIP		Life-to-Date Through June 30, 2018		FY 2019 Amended Spend		FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)	
Water System Projects									
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	\$	8,642,000	\$	1,864,811	\$	3,666,000	\$	3,471,528	10.5%
Project 114001- Springwells WTP 1958 Filter Rehabilitation		93,464,000		66,571,119		4,452,000		3,731,734	11.3%
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement		2,906,000		1,123,542		2,420,000		2,761,119	8.3%
Project 116002- PA, SW and NE Raw Water Tunnel Improvements		33,079,000		2,177,985		9,042,000		5,525,787	16.7%
Selected Projects as a Percentage of the Total	\$	138,091,000	\$	71,737,457	\$	19,580,000	\$	15,490,168	46.8%
Total					\$	73,707,885	\$	33,103,669	100.0%

The following analysis provides brief highlights related to these projects.

Project 111002 – LH WTP Miscellaneous Mechanical HVAC Improvements

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	\$ 8,642,000	\$ 1,864,811	\$ 3,666,000	\$ 3,471,528	10.5%

Project Engineer/Manager: Brian VanHall

Manager: Grant Gartrell

Total Budget: \$8,642,000

Timeline: May 2020

FY 2019 Last Pay Estimate Processed: December 20, 2018

Key Contracts/Vendors: CON-212 Detroit Contracting, Inc.

Project Description: Replacement of existing heating, ventilating and air-conditioning systems with new, energy efficient mechanical HVAC systems.

Purpose: The existing heating and cooling systems at Lake Huron are beyond their life expectancy and no longer cost effective to maintain and are not energy efficient. The new heating and cooling systems will be optimized based on plant use and using new energy efficient equipment. The existing dehumidifiers are no longer effective at removing moisture from the pipe gallery and the environment has ideal conditions for increasing the rate of corrosion of the process water piping. The new dehumidifier will be more efficient and will control humidity below conditions ideal for corrosion and the new technology is easier to service. New fans will be installed in the filter gallery to reduce the humidity levels during the summer.

Status: The project is proceeding in accordance with the established schedule. The roof-based HVAC equipment was successfully placed using a helicopter in accordance with the plan on October 23, 2018. The rooftop fans in the filter gallery have been installed and the FRP ducting is on track to be finished before Spring 2019. The new hydronic piping in the filter and pipe gallery is installed and being utilize for heating this winter.

Project 111002 – LH WTP Miscellaneous Mechanical HVAC Improvements

Additional Project Manager Comments: There are no additional comments to provide at this time.

Additional Construction Accounting & Financial Reporting Team Comments: The construction phase projected FY 19 spend of \$4,825,000.00 with a planned budgeted spend of \$3,666,000.00 creates a \$1,159,000.00 variance due to project acceleration. This project has been fully budgeted for in total over the life of the project.

FY 2019-2023 CIP Page 3 for Project 111002- LH WTP Miscellaneous Mechanical HVAC Improvements

CIP Number: **111002**

Old CIP No.: 1280

Project Title: **LH WTP Miscellaneous Mechanical HVAC Improvements**

Project Status: Active

Budget: Water

Classification Lvl 1: Water

Classification Lvl 2: Treatment Plants & Facilities

Classification Lvl 3: Lake Huron

Project Location: Saint Clair County

☐ Innovation

☐ Water MP Right Sizing

☐ Reliability/Redundancy

Project Score 77



The photo shows the condition of the heating system hot water piping buildup which necessitates the complete replacement of the hot water radiant system in the filter building and other areas of the LH WTP.

Project Significance: Existing heating, ventilating and air-conditioning systems Lake Huron are 40 years old and are either not operable or energy-inefficient. Thus, replacement with new, energy efficient mechanical HVAC systems is needed.

Project Engineer/Manager: Todd King

Manager: Grant Gartrell

Scope of Work: The work includes replacement of the existing Natural Gas-Fired hot water boilers, back flow preventers, and dehumidification units with related accessories.

Challenges: Heating system modifications will be seasonally dependent.

Phase Expenses								
PHASE	Construction				Contract No	CON-182	Phase Status	Future Planned Start
Phase Title	CON-182, Miscellaneous Mechanical Improvements at Lake Huron WTP, C1							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	165	0	0	0	0	0	0	
PHASE	Study and Design and Construction Assistance				Contract No	CS-1732	Phase Status	Active
Phase Title	CS-1732, Miscellaneous Mechanical Improvements at Lake Huron WTP							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	233	131	131	13	0	0	0	
PHASE	Construction				Contract No	CON-212	Phase Status	New
Phase Title	CON-212, LH WTP Electrical & Mechanical Process Improvements, C2							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	383	3,535	3,742	0	0		0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	781	3,666	3,873	13	0	0	0	

FY 2019-2023 CIP Page 3 for Project 111002- LH WTP Miscellaneous Mechanical HVAC Improvements

CIP Number: 111002

Phase Tasks and Dates				
Phase Category	C	Construction		
Budget	Water			
Phase Status	New			
Contract No	CON-212			
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	11/15/2016	90
		Procurement	2/14/2017	365
		Project Execution	2/15/2018	798
		Project Closeout	4/24/2020	90
		End Date	2/13/2017	
			2/14/2018	
			4/23/2020	
			7/23/2020	
Phase Category	C	Construction		
Budget	Water			
Phase Status	Future Planned Start			
Contract No	CON-182			
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	8/27/2016	90
		Procurement	11/26/2016	365
		Project Execution	11/27/2017	179
		Project Closeout	5/26/2018	90
		End Date	11/25/2016	
			11/26/2017	
			5/25/2018	
			8/24/2018	
Phase Category	S/D/CA	Study and Design and Construction Assistance		
Budget	Water			
Phase Status	Active			
Contract No	CS-1732			
Cost Est Class				
		Task Name	Start Date	Duration
		Scope Development	2/21/2015	90
		Procurement	5/23/2015	365
		Project Execution	5/23/2016	1431
		Project Closeout	4/24/2020	90
		End Date	5/22/2015	
			5/22/2016	
			4/23/2020	
			7/23/2020	

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		270	1,030	3,130	3,050	422				7,902
2019	18	291	781	3,666	3,873	13	0	0	0	8,642

Description of CIP Changes added GLWA costs; made relatively minor increase to overall budget to account for inflation.

Project 114001 – Springwells Water Treatment Plant 1958 Filter Rehabilitation

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Project 114001- Springwells WTP 1958 Filter Rehabilitation	93,464,000	66,571,119	4,452,000	3,731,734	11.3%

Project Engineer/Manager: Grant Gartrell

Manager: Grant Gartrell

Total Construction and Construction Assistance Budget: \$77,422,000

Timeline: To be completed by November 2018

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contracts/Vendors: SP-563 Walsh Construction; CS-1425 & CS-200 CDM Michigan

Project Description: Installation of new filter media, underdrains, filter valves and rate controllers; replace the existing filter control console and hydraulic controls at Springwells Water Treatment Plant.

Purpose: Rehabilitation of both filter trains to restore filtration capacity and sustain the useful service life of the process treatment infrastructure.

Status: Construction nears completion for the renovation of the laboratory and offices in the administration building, including installation of new heating, ventilation and air-conditioning equipment, the 1958 breezeway, constant-level washwater tank fill control valves, and the replacement of the phosphoric acid feed system. Preparation for the initial installation began on the high-pressure water pumping unit and is scheduled for install in February 2019. Work is beginning on the upgrade to the plant's distribution control system and related instrumentation serving both the 1930 and 1958 filters and chemical feed systems as well as other plant systems. Key final steps include startup and commissioning of the dehumidification, ventilation and heating systems for the 1930 and 1958 filter gallery buildings and final operation demonstration testing of the reconstructed 1958 filters.

Project 114001 – Springwells Water Treatment Plant 1958 Filter Rehabilitation

Additional Project Manager Comments: There are no additional comments to provide at this time.

Additional Construction Accounting & Financial Reporting Team Comments: Total project budget per the Board approved CIP schedule does not include the historical, pre-fiscal year 2017 budget for the design contract CS-1425 nor the allocation of the Water Treatment Plant Allowance to fund CS-200 the Owner's Representative (RPR) consultant contract. The design contract has a total budget amount of \$6,500,000.

FY 2019-2023 CIP Page 38 for Project 114001- Springwells WTP 1958 Filter Rehabilitation and Auxiliary Facilities

CIP Number: 114001

Old CIP No.: 917

Project Title: **SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities**

Project Status: Active

Budget: Water

Classification Lvl 1: Water

Classification Lvl 2: Treatment Plants & Facilities

Classification Lvl 3: Springwells

Project Location: Wayne County - Outside Detroit

- ☐ Innovation
☐ Water MP Right Sizing
☐ Reliability/Redundancy

Project Score 62.2



Springwells filter building

Project Significance: Rehabilitation of Springwells WTP 1958 Filters and 1930s failed filters to provide the WTP with a renovated capacity of 295 MGD

Project Engineer/Manager: Eric Kramp

Manager: Grant Gartrell

Scope of Work: This project includes the study, design (CS-1425) and construction assistance of improvements to the Springwells WTP that includes the replacement of Phosphoric Acid Feed System, rehabilitation of the 1958 Filters, rehabilitation of failed 1930s Filters, Update of Operation and Maintenance Manuals, and addition of polymer systems and controls. Provide construction services to furnish and install new filter media, underdrains, filter valves, and rate controllers; replace the existing filter control consoles, hydraulic control valves with electric control valves, enclosures; add appurtenances to enable automatic backwashing of the filters; provide a Filter Aid Polymer System to the 1930 and 1958 filter complexes; Programmable Logic Controller-based controls for automatic control of the polymer system; install a local instrumentation and controls system.

Challenges: N/A - Active

Phase Expenses

PHASE	Construction				Contract No	SP-563	Phase Status	Active
Phase Title	SP-563, Walsh, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities ©							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	6,327	3,028	0	0	0	0	0	
PHASE	Study and Design and Construction Assistance				Contract No	CS-1425	Phase Status	Active
Phase Title	CS-1425, CDM, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities (E1 & E2)							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	479	118	0	0	0	0	0	
PHASE	Construction Assistance				Contract No	CS-200	Phase Status	Active
Phase Title	CS-200, CDM, SPW WTP 1958 Filter Rehabilitation and Auxiliary Facilities (E3)							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	445	355						

FY 2019-2023 CIP Page 39 for Project 114001- Springwells WTP 1958 Filter Rehabilitation and Auxiliary Facilities

CIP Number: 114001

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018	56,759	20,353	310							77,422
2019	71,252	11,430	7,281	3,501	0	0	0	0	0	93,464

Description of CIP Changes	Updated construction based on actual invoicing to date from Walsh; extended completion due to anticipated change order for time only; added GLWA costs.
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Project 114012-Springwells WTP 1930 Filter Building Roof Replacement

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement	2,906,000	1,123,542	2,420,000	2,761,119	8.3%

Project Engineer/Manager: Peter Fromm

Manager: Paula Anderson

Total Budget: \$2,906,000

Timeline: Spring 2019

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contracts/Vendors: DB-093 Schreiber Corporation

Project Description: A design-build project that includes the inspection/investigation of the old roof, design, and the replacement of the 1930 Filter Building roof. Project also included the inspection of roof drains before and after construction in addition to replacement of the gutters.

Purpose: The 1930 Filter Building Roof System was failing and causing water to leak into the 1930 Filter Building.

Status: The contract started on April 18, 2018. The contractor has completed the work and Substantial Completion was given on Tuesday December 11, 2018. The project is in the close-out phase and will be completed on or before April 17, 2019.

Additional Project Manager Comments: There are no additional comments to provide at this time.

Additional Construction Accounting & Financial Reporting Team Comments: Project to close and be capitalized in fiscal year 2019.

FY 2019-2023 CIP Page 62 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement

CIP Number: 114012

Old CIP No.: 1320

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

Project Status: Active

Budget: Water

Classification Lvl 1: Water

Classification Lvl 2: Treatment Plants & Facilities

Classification Lvl 3: Springwells

Project Location: Wayne County - Outside Detroit

☐ Innovation

☐ Water MP Right Sizing

☐ Reliability/Redundancy

Project Score 61



Filter Building roof

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

Project Engineer/Manager: Paula Anderson

Manager: Paula Anderson

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

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

Phase Expenses								
PHASE	Design and Build				Contract No	NA	Phase Status	Under Procurement
Phase Title	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	486	2,420	0	0	0	0	0	

FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
486	2,420	0	0	0	0	0	

Phase Tasks and Dates					
Phase Category	DB	Design and Build			
Budget	Water				
Phase Status	Under Procurement				
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	456	12/29/2019

FY 2019-2023 CIP Page 63 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement

CIP Number: 114012

Task Name	Start Date	Duration	End Date
Project Closeout	12/29/2019	90	3/28/2020

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		3,000								3,000
2019			486	2,420	0	0	0	0	0	2,906

Description of CIP Changes Changes made due to delay in getting bid documents released for bidding purposes.

Project 116002 – PA, SW and NE Raw Water Tunnel Improvements

Water System Projects	Total Project Budget Estimate From FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Project 116002- PA, SW and NE Raw Water Tunnel Improvements	33,079,000	2,177,985	9,042,000	5,525,787	16.7%

Project Engineer/Manger: Todd King

Manager: Grant Gartrell

Total Budget: \$33,079,000

Timeline: The detailed investigation and preliminary design work under this contract was scheduled to be completed by March 2019. Due to GLWA requested delays in diver deployment during warm weather months, the current project completion (i.e. 30-percent design) is scheduled to be completed by June 2019. Once the preliminary design is complete, the vendor will submit a guaranteed maximum price (GMP) for the construction of the raw water tunnel rehabilitation and improvements work which is tentatively scheduled to be completed by 2021.

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contracts/Vendors: DB-150 / Ballard Marine Construction

Project Description: This is a progressive design build project delivery that involves the detailed inspection, design and construction of the improvements to the Pennsylvania, Northeast and Springwells raw water tunnels.

Purpose: Rehabilitate sections of the Pennsylvania, Northeast and Springwells raw water tunnels where substantial deterioration in the form of cracking and ovality have been observed.

Status: The contract started on January 29, 2018. The supplemental inspection by remote operated vehicles for the repair areas for all three tunnels has been completed. The geotechnical investigation for the repair areas for all three tunnels has been completed. The supplemental diver inspection, coring, and crack mapping for the Pennsylvania, Springwells and Northeast tunnels has been completed. A preliminary findings meeting was held in mid-January 2019. Three conceptual alternatives were developed that included: (1) repair in the wet; (2)

Project 116002 – PA, SW and NE Raw Water Tunnel Improvements

dewatering and repair in the dry; and (3) construct bypass tunnels to facilitate repair. The conceptual alternatives are being evaluated as of this writing. The estimated order-of-magnitude cost will be presented once the preferred alternative is selected.

Additional Project Manager Comments: The draft report will be made available to the Board on request when submitted and initial comments by GLWA staff have been addressed. Independent geotechnical support is being provided to GLWA by FK Engineers.

Additional Construction Accounting & Financial Reporting Team Comments: There are no additional comments to provide at this time.

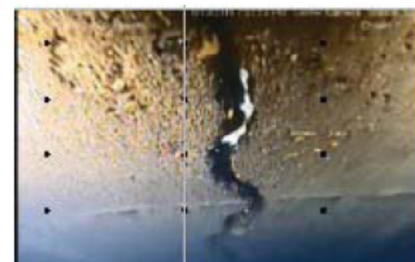
FY 2019-2023 CIP Page 80 for Project 116002 - PA, SW and NE Raw Water Tunnel Improvements

CIP Number: 116002
Old CIP No.: 1327
Project Title: Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements

Project Status: Active
Budget: Water
Classification Lvl 1: Water
Classification Lvl 2: Treatment Plants & Facilities
Classification Lvl 3: General Purpose
Project Location: City of Detroit

- ☐ Innovation
☐ Water MP Right Sizing
☐ Reliability/Redundancy

Project Score



Crown cracks are especially concerning in the Springwells Raw Water Tunnel

Project Significance: Project critical to production at Springwells WTP during repurposing of Northeast WTP as recommended by the 2015 WMPU. Contract CS-1623 identified problem areas on the raw water supply system that compromised the system's ability to meet demands during the repurposing of Northeast WTP.

Project Engineer/Manager: Todd King
Manager: Grant Gartrell

Scope of Work: The scope of work is to conduct supplemental investigations to design the repairs for the sections of tunnel identified in CS-1623 as having structural concerns. Three areas were identified with the highest concern being a portion of the Springwells Tunnel near the Springwells WTP.

Challenges: The tunnels are approximately 80 feet below the surface of the Detroit River. This poses challenges for assessing the extent of damage to the structures, as well as repair. Dewatering the tunnels to repair them will create extensive stresses that must be considered prior to performing the work. Maintaining a supply of raw water to Springwells, Northeast and Water Works Park throughout construction to meet finished water production requirements/demands of the system. Specialized/complicated construction.

Phase Expenses								
PHASE	Design and Build				Contract No	DB-150	Phase Status	Active
Phase Title	DB-150 Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	3,625	9,042	5,468	5,468	5,468	3,998		
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	3,625	9,042	5,468	5,468	5,468	3,998		

Phase Tasks and Dates				
Phase Category	DB	Design and Build		
Budget	Water			
Phase Status	Active			
Task Name	Start Date	Duration	End Date	

FY 2019-2023 CIP Page 81 for Project 116002 - PA, SW and NE Raw Water Tunnel Improvements

CIP Number: 116002

Contract No	DB-150	Task Name	Start Date	Duration	End Date	
Cost Est Class		Procurement	2/14/2017	365	2/14/2018	
		Project Execution	2/15/2018	1796	1/16/2023	
		Project Closeout	1/17/2023	90	4/17/2023	

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		500	2,000	10,000	15,000	4,900				32,400
2019		10	3,625	9,042	5,468	5,468	5,468	3,998		33,079

Description of CIP Changes This project now includes CIP 116001 that was previously included in the CIP 2018-2022 with projected expenses of \$2,5M.

Construction Work-in-Progress Rollforward

The purpose of the construction work-in-progress (CWIP) rollforward is to analyze the current year activity for each project in relation to the overall capital improvement program as well as the project portfolio overall.

As part of our project life cycle review the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. No projects have been identified for Q2 FY 2019 capitalization, but the following projects have been identified and planned for Q3 capitalization:

<u>Project</u>	<u>Contract</u>	<u>Description</u>
114012	DB-093	Springwells Filter Building Roof Replacement
114015	SCP-DB-112	Springwells Emergency Grating and Structural Steel
122001	WS-681	Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road
122002	DWS-891	Pressure Regulating Valve Vault Improvements
122012	WS-684A	36-Inch Water Main on Telegraph Road, Cherry Hill to Warren Avenue
170117	SCP-NE-007	Instrument Air Compressor Systems Replacement at NE WTP

\$175.0 million is in CWIP as of December 31, 2018 as shown in the table beginning on the next page.

The order of the report on the subsequent pages is in ascending order by CIP project number.

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority
 Water System Construction Work-in-Progress (CWIP) FY 2019 Rollforward
 Unaudited Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
4430	DWSD: Contract Replacement Water Main	\$ -	\$ 75,804	\$ -	\$ -	\$ (75,804)	\$ -	\$ -	\$ -	0%
7412	SRF WS-693 Water System Improvements	-	3,390,974	-	-	-	3,390,974	-	3,390,974	0%
111001	Energy Management: Lake Huron Water Treatment Plant Low Lift Pumping Improvements	52,388,000	-	-	-	9,806	9,806	-	9,806	0%
111002	LHWTP Backflow Replacement	8,642,000	1,864,811	3,666,000	3,666,000	3,471,528	5,336,339	155,348	5,491,687	64%
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	4,832,000	62,685	414,000	2,728,786	1,265,432	1,328,117	-	1,328,117	27%
111005	Miscellaneous Concrete Improvements at the Lake Huron WTP	755,000	-	-	-	-	-	757,395	757,395	100%
111006	Replacement of Filter Instrumentation and Raw Water Flow Metering Improvements at Lake	26,315,000	734,756	43,000	43,000	26,974	761,730	-	761,730	3%
111007	Lake Huron WTP-Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	7,084,000	283,989	212,000	212,000	320,505	604,495	-	604,495	9%
111008	LHWTP Architectural Programming - Lab	300,000	-	-	-	106	106	-	106	0%
111009	Lake Huron WTP-35 MGD HLP, Flow Meters	-	-	-	-	3,212	3,212	-	3,212	0%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
112001	Yard Piping Replacement at Northeast Water Treatment Plant	2,800,000	-	-	-	-	-	-	-	0%
112002	Low Lift Pumping Plant Caisson Rehabilitation at Northeast WTP	1,717,000	472,953	831,000	831,000	385,286	858,239	-	858,239	50%
112003	NE WTP High Lift Pumping Electrical	62,265,000	-	-	-	-	-	-	-	0%
112004	NE WTP Relocation of Service Line	2,460,000	-	-	-	1,687	1,687	-	1,687	0%
113001	Southwest Water Treatment Plant, Sludge Treatment & Waste Wash water Treatment Facilit	40,000	39,885	-	-	(39,885)	-	-	-	0%
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	5,484,000	249,447	1,157,000	1,238,000	98,514	347,961	-	347,961	6%
113003	Replacement of Butterfly Valves	148,286,000	-	-	-	159	159	-	159	0%
113004	Residual Handling Facility's Decant Flow Modifications at Southwest WTP	3,352,000	198,431	1,054,000	1,054,000	576,550	774,981	-	774,981	23%
113005	Residuals Management	1,145,000	-	-	-	-	-	-	-	0%
113006	SW WTP Chloring Scrubber	7,032,000	-	-	-	-	-	-	-	0%
113007	Architectural and Building Mechanical	37,336,000	-	-	-	-	-	-	-	0%
114001	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities	93,464,000	66,571,119	3,501,000	4,452,000	3,731,734	70,302,853	22,738,455	93,041,307	100%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
114002	Springwells Water Treatment Plant - Low Lift and High Lift Pump Station	85,503,000	498,042	1,433,000	1,433,000	1,107,269	1,605,311	-	1,605,311	2%
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP	7,159,000	3,444,814	2,506,000	2,813,000	1,810,007	5,254,821	-	5,254,821	73%
114004	Miscellaneous Concrete Improvements at Springwells WTP	495,000	-	-	-	-	-	494,399	494,399	100%
114005	Springwells WTP Admin Building Improvements	8,125,000	-	30,000	26,610	5,919	5,919	-	5,919	0%
114006	Replacement of Rapid Mix Units at Springwells WTP 1958 Process Train	1,722,000	176,992	1,284,000	1,284,000	538,530	715,522	-	715,522	42%
114007	Powder Activated Carbon Systems	3,939,000	-	-	-	-	-	-	-	0%
114008	1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements at Springwells WTP	17,107,000	-	424,000	424,000	34,002	34,002	-	34,002	0%
114009	Springwells Water Treatment Plant Service Area Redundancy Study	338,000	311,129	-	-	-	311,129	-	311,129	92%
114010	Yard Piping Improvements	110,129,000	-	-	-	303	303	-	303	0%
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	11,621,000	473,029	1,406,000	3,066,452	13,406	486,435	-	486,435	4%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
114012	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement	2,906,000	1,123,542	2,420,000	2,420,000	2,761,119	3,884,661	-	3,884,661	134%
114013	Springwells Reservoir Fill Line Improvements	6,508,000	332,385	2,469,000	2,469,000	486,551	818,936	-	818,936	13%
114015	Emergency Grating Replacement at Springwells WTP	2,772,000	203,833	11,000	556,186	627,129	830,961	2,533,164	3,364,125	121%
115001	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	71,051,000	681,626	968,000	968,000	494,035	1,175,661	-	1,175,661	2%
115002	Miscellaneous Concrete and Road Improvements at Waterworks Park WTP	1,951,000	-	-	-	-	-	1,983,592	1,983,592	102%
115003	Comprehensive Condition Assessment at Waterworks Park WTP	546,000	439,606	262,000	262,000	51,950	491,556	-	491,556	90%
115004	Water Works Park WTP Chlorine System Upgrade	7,049,000	2,526,753	3,124,000	3,124,000	2,205,611	4,732,364	-	4,732,364	67%
116002	Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements based on	33,079,000	2,177,985	9,042,000	9,042,000	5,525,787	7,703,772	-	7,703,772	23%
122001	Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road	35,384,000	33,565,809	-	-	331,350	33,897,158	-	33,897,158	96%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
122002	Replacement of Five (5) PRV Pits of Treated Water Transmission System	2,367,000	1,844,499	-	641,494	641,675	2,486,174	-	2,486,174	105%
122003	New Waterworks Park to Northeast Transmission Main	130,879,000	1,655,004	1,372,000	1,882,701	543,307	2,198,311	-	2,198,311	2%
122004	96-inch Main Relocation, Isolation Valves Installations, and New Parallel Main	132,667,000	1,129,751	1,797,000	1,797,000	550,896	1,680,646	-	1,680,646	1%
122005	Replacement Schoolcraft Watermain	13,805,000	3,960	50,000	50,000	40,863	44,823	-	44,823	0%
122006	Transmission System Water Main Work-Wick Road Parallel Water Main	24,319,000	126,146	1,743,000	1,743,000	94,620	220,766	-	220,766	1%
122007	Design and Construction of a new Newburgh Road 24" Main along Newburgh Road between Ch	5,247,000	-	653,000	653,000	-	-	-	-	0%
122009	Water System Improvements in Joy Road from Southfield Road to Trinity	107,000	106,881	-	-	-	106,881	-	106,881	100%
122010	Water Main Replacement within the City of Detroit - Joy Rd from Greenfield to Schaefer	16,000	-	-	-	-	-	-	-	0%
122011	Park-Merriman Water Main-Final Phase	6,209,000	156,338	955,000	1,055,000	111,182	267,520	-	267,520	4%
122012	36-inch Water Main in Telegraph Road	10,385,000	9,418,001	3,000	130,187	559,620	9,977,621	-	9,977,621	96%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
122013	Lyon Township Transmission Main Extension Project	54,426,000	-	-	-	8,855	8,855	-	8,855	0%
122014	48-Inch Water Main Installation at Vining and Wick Roads in Romulus	4,243,000	-	-	-	-	-	4,011,084	4,011,084	95%
122015	30-Inch Water Main	2,743,000	-	-	-	-	-	2,460,774	2,460,774	90%
122016	Downriver Transmission Loop	37,197,000	-	-	-	11,413	11,413	-	11,413	0%
132001	Wick Road Station Rehabilitation	147,000	130,253	-	-	-	130,253	-	130,253	89%
132002	Replacement of Switchgear at Joy Road Pumping Station	669,000	-	-	-	-	-	669,196	669,196	100%
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	1,538,000	138,390	1,229,000	1,576,744	10,642	149,032	-	149,032	10%
132004	Hydraulic Surge Control for North Service Center Pumping Station	232,000	214,771	-	-	-	214,771	-	214,771	93%
132006	Pressure and Control Improvements at the Electric, Ford Road, Michigan, and West Chica	2,609,000	161,460	245,000	245,000	106,285	267,746	-	267,746	10%
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	557,000	9,170	38,000	44,800	66,588	75,758	-	75,758	14%
132008	Needs Assessment Study for all Water Booster Pumping Stations	1,933,000	912,550	1,178,000	1,178,000	669,146	1,581,696	-	1,581,696	82%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31, 2018	Life to Date Activity / Total Project Estimate
132009	Study Phase Services for Proposed East Service Center Booster Pumping Station and Rese	10,000	10,313	-	-	(10,313)	-	-	-	0%
132010	West Service Center/Duval Rd Division Valve Upgrades	37,136,000	-	-	240,890	255,469	255,469	-	255,469	1%
132012	Ypsilanti PS Improvements	9,147,000	3,648	93,000	93,000	11,534	15,182	-	15,182	0%
132013	Project Cancelled	1,558,000	-	-	-	-	-	-	-	0%
132014	Adams Road Booster Pumping Improvements	5,676,000	-	-	-	-	-	-	-	0%
132015	Newburgh BPS	12,170,000	-	-	-	-	-	-	-	0%
132016	North Service Center BPS Improvements	24,920,000	-	-	-	-	-	-	-	0%
132017	North Service Center BPS - On-Site & Off	5,076,000	-	-	-	-	-	-	-	0%
132018	Schoolcraft BPS	10,564,000	-	-	-	-	-	-	-	0%
132019	Wick Road BPS - Switchgear	5,570,000	-	-	-	-	-	-	-	0%
132020	Franklin BPS - Isolation Gate Valves	10,170,000	-	-	-	-	-	-	-	0%
132021	Imlay BPS - Replace VFDs, Pumps & Motors	12,109,000	-	-	-	-	-	-	-	0%
132022	Joy Road BPS - Replace Reservoir Pumps	6,109,000	-	-	-	-	-	-	-	0%
132023	Project Cancelled	19,109,000	-	-	-	163	163	-	163	0%
132024	Project Cancelled	19,109,000	-	-	-	327	327	-	327	0%
161001	Comprehensive Water Master Plan Update	330,000	-	-	-	-	-	330,349	330,349	100%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
170100	Allowance: WTP/Pump Station	39,872,000	-	4,296,000	-	-	-	-	-	0%
170102	Water Production Plant Flow Metering Improvements at NE, SP & SW WTP	-	335,197	-	-	13,937	349,135	-	349,135	0%
170103	Belle Isle Water Supply Intake and Ice Boom Improvements	-	-	-	-	3,278	3,278	286,596	289,874	0%
170104	Orion and Newburgh Pumping Stations Improvements	-	364,343	-	2,167,000	1,026,755	1,391,098	-	1,391,098	0%
170108	DWS-063 Adams Road	-	625	-	-	-	625	-	625	0%
170109	Inspection of Raw Water Intakes and Tunnels	-	3,054,241	-	3,000	20,606	3,074,847	-	3,074,847	0%
170110	Raw Water Sampling Improvements	-	2,926	-	-	-	2,926	-	2,926	0%
170117	Instrument Air Compressor Systems Replacement at NE-WTP	-	226,483	-	-	-	226,483	-	226,483	0%
170120	Phosphoric Acid Feed System Improvements at Southwest WTP	-	130,688	-	460,000	382,628	513,316	-	513,316	0%
170121	Franklin PS Valve Rehab	-	-	-	1,000,000	2,479	2,479	-	2,479	0%
170122	Meter Pit at Brownstown Township	-	-	-	159,000	97,806	97,806	-	97,806	0%
170200	As Needed Construction Materials, Environmental Media and Special Allowance	1,788,000	-	472,000	472,000	-	-	-	-	0%
170201	Construction & Environmental Testing	-	1,609	-	93,310	9,261	10,870	-	10,870	0%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
170300	Water Treatment Plant Automation Program	7,801,000	-	61,000	-	-	-	-	-	0%
170301	Water Plant Automation	-	1,376,747	-	296,225	20,448	1,397,194	-	1,397,194	0%
170400	Water Transmission Improvement Program	11,804,000	-	1,000,000	1,000,000	-	-	-	-	0%
170401	Emergency Bypass Around Ypsilanti Station	-	-	-	-	38,816	38,816	-	38,816	0%
170402	Emergency Manned Visual Inspection 84-Inch Transmission Main	-	156,020	-	-	-	156,020	-	156,020	0%
170500	Transmission System Valve Assessment and Rehabilitation/Replacem ent Program	22,000,000	-	4,000,000	-	-	-	-	-	0%
170502	Transmission System Valve Assessment and Rehabilitation/Replacem e	-	248,175	-	4,000,000	1,917,278	2,165,453	3,182,318	5,347,772	0%
170600	Water Transmission Main Asset Assessment Program	26,133,000	-	2,501,000	2,501,000	-	-	-	-	0%
170701	Booster Station & Reservoirs Program Management	14,331,000	-	-	-	-	-	12,976,698	12,976,698	91%
170800	Reservoir Inspection, Design and Rehabilitation Program	19,099,000	-	472,000	-	-	-	-	-	0%
170801	Reservoir Inspection, Design and Rehabilitation	-	-	-	489,500	4,389	4,389	-	4,389	0%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement Program	20,500,000	-	4,613,000	-	-	-	-	-	0%
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement	-	-	-	4,613,000	-	-	-	-	0%
171000	LH - WTP Sanitary Improvements Program	488,000	-	45,000	45,000	-	-	-	-	0%
171100	NE - WTP Sanitary Improvements	796,000	-	75,000	75,000	-	-	-	-	0%
171200	SW - WTP Sanitary Survey Improvements Program	717,000	-	6,000	6,000	-	-	-	-	0%
171300	WWP - WTP Sanitary Improvements Program	488,000	-	45,000	45,000	-	-	-	-	0%
171400	Energy Management Program	7,000,000	-	-	-	-	-	-	-	0%
171500	Roof Replacement - Var Water Facilities Program	27,246,000	-	-	-	-	-	-	-	0%
171501	Roof Replacement - Var Water Facilities	-	50,420	111,000	111,000	47,171	97,592	-	97,592	0%
351001	Water Facility Lighting Renovations	-	-	1,172,000	1,172,000	5,941	5,941	-	5,941	0%
361002	Data Center Reliability/Availability Improvements	-	16,080	-	-	-	16,080	-	16,080	0%
380400	As-needed CIP Implementation Assistance and Related Services	-	-	803,000	803,000	-	-	-	-	0%

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate From FY 2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
380600	General Engineering Services Allowance	-	-	276,000	276,000	-	-	-	-	0%
380601	Alfred Benesh:General Engineer	-	674	-	-	-	674	-	674	0%
380700	As-needed Engineering Services for Concrete Testing, Geotechnical Soil Borings, other Testing Services, and Related Services Allowance	-	-	477,000	477,000	-	-	-	-	0%
380701	Engineering Svc Concrete Testing, Soil Borings	-	-	-	-	71,830	71,830	-	71,830	0%
Total		\$ 1,684,202,000	\$ 141,885,761	\$ 66,038,000	\$ 73,707,885	\$ 33,103,669	\$ 174,989,430	\$ 57,057,350	\$ 232,046,780	14%
Net FY 2019 Spending Plan Amendments					\$ 7,669,885					

*Projects with activity and no current fiscal year board approved CIP spend are being evaluated for spending plan amendments with amendments anticipated prior to Q3 FY 2019 CWIP. As GLWA Engineers commence on developing scopes for projects ahead of the FY 2019 CIP Plan the related salaries and benefits are identified in the FY 2019 activity and accumulated to the associated CIP Project CWIP account which has resulted in a number of instances where FY 19 activity exists on projects without amended spend.

FY 2019 Spending Plan Amendment Summary

The purpose of the Spending Plan Amendment Summary is to illustrate the amendments to the current fiscal year spend for each project with a spending plan amendment resulting in an amended spend amount or the use of allowance and program funding for a specific project necessitated by contract award.

The award of CIP contracts and the related execution thereof may result in deviation from the amount and timing of planned spend. Acknowledging the aforementioned deviation, spending plan amendments are prepared to fund the related increase or decrease either to or from the Capital Reserve to amend the board approved fiscal year planned spend accordingly and to inform decision makers in the development of future Capital Improvement Plans. Similar to the spending plan amendments prepared for the Capital Reserve, spending plan amendments are also prepared for contracts that are planned or funded by way of the CIP Program and Allowance accounts. As additional contracts are awarded and other project information becomes available additional spending plan amendments to the Capital Reserve will be prepared to amend the planned spend for FY 2019.

\$7.67 million of Capital Reserve spending plan amendments have been prepared as of December 31, 2018 as shown in the table on the next page along with spending plan amendments detailing the assignment of funding within Program and Allowance accounts.

The order of the report on the subsequent page is in ascending order by CIP project number.

Water System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority
Water System FY 2019 Spending Plan Amendment Summary - Due to Changes in Project Cost and/or Timing
Unaudited Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Capital Reserve	Program / Allowance	Grand Total
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	\$ 2,314,786	\$ -	\$ 2,314,786
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	81,000	-	81,000
114001	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities	951,000	-	951,000
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP	-	307,000	307,000
114005	Springwells WTP Admin Building Improvements	(3,390)	-	(3,390)
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	1,660,452	-	1,660,452
114015	Emergency Grating Replacement at Springwells WTP	-	545,186	545,186
122002	Replacement of Five (5) PRV Pits of Treated Water Transmission System	641,494	-	641,494
122003	New Waterworks Park to Northeast Transmission Main	510,701	-	510,701
122011	Park-Merriman Water Main-Final Phase	100,000	-	100,000
122012	36-inch Water Main in Telegraph Road	127,187	-	127,187
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	347,744	-	347,744
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	-	6,800	6,800
132010	West Service Center/Duval Rd Division Valve Upgrades	-	240,890	240,890
170100	Allowance: WTP/Pump Station	686,186	(4,982,186)	(4,296,000)
170104	Orion and Newburgh Pumping Stations Improvements	-	2,167,000	2,167,000
170109	Inspection of Raw Water Intakes and Tunnels	-	3,000	3,000
170120	Phosphoric Acid Feed System Improvements at Southwest WTP	-	460,000	460,000
170121	Franklin PS Valve Rehab	-	1,000,000	1,000,000
170122	Meter Pit at Brownstown Township	-	159,000	159,000
170201	Construction & Environmental Testing	-	93,310	93,310
170300	Water Treatment Plant Automation Program	235,225	(296,225)	(61,000)
170301	Water Plant Automation	-	296,225	296,225
170500	Transmission System Valve Assessment and Rehabilitation/Replacement Program	-	(4,000,000)	(4,000,000)
170502	Transmission System Valve Assessment and Rehabilitation/Replaceme	-	4,000,000	4,000,000
170800	Reservoir Inspection, Design and Rehabilitation Program	-	(472,000)	(472,000)
170801	Reservoir Inspection, Design and Rehabilitation	17,500	472,000	489,500
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement Program	-	(4,613,000)	(4,613,000)
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement	-	4,613,000	4,613,000
Grand Total		\$ 7,669,885	\$ -	\$ 7,669,885

WASTEWATER SYSTEM

Executive Summary

The rate of spend is a key performance indicator. The development of the FY 2019-2023 and related CIP budget for FY 2019 were based on anticipation of FY 2019 activity resulting in 100% of planned spend. The Wastewater System spend for the period ending December 31, 2018 is 80% of the FY 2019 prorated board approved CIP spend and 79.3% of the FY 2019 amended spend. Detailed analysis behind the reasons and projects for which planned spend is amended from \$105,183,000 to \$106,081,010 is provided in the subsequent Spending Plan Amendment Summary section of this report. Numerous project designs have already and or will soon complete that will allow for the increased rate of construction spend to continue in FY 2019 and beyond.

							FY 2019 as a Percent of Prorated Budget (Six Months) (Unaudited)
	FY 2018 Amended Budget	FY 2018 Activity	FY 2018 as a Percent of Budget	FY 2019 Budget	FY 2019 Prorated (Six Months)	FY 2019 Activity (Six Months) (Unaudited)	
Wastewater System Projects							
FY 2018 CIP Project Requests	\$ 160,746,000	69,567,318	43.3%				
FY 2018 CIP Realigned Forecast as per 2019 CIP	70,632,000	69,567,318	98.5%				
FY 2019 Board Approved CIP Spend				\$ 105,183,000	52,591,500	42,063,136	80.0%
FY 2019 Amended Spend				\$ 106,081,010	53,040,505	42,063,136	79.3%

It should be noted that these interim reports have been prepared on a modified cash basis. This means that expenses may lag in vendor invoice receipt and posting. Known expenses, material in nature, have been accrued.

Analysis of Projects with Largest Percent of Spend and Otherwise Noteworthy Project

Of the total Wastewater System Construction Bond spend for FY 2019 to date, **five projects account for \$32.5 million or 77.3% of the total spend**. Those projects are summarized in the following table. An analysis of each project and its related CIP summary follow the table. Note that the last page of this report provides a Glossary of Acronyms.

Wastewater System Projects	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Project 211001: Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	\$ 54,037,000	\$ 25,098,344	\$ 16,308,000	\$ 10,408,427	24.7%
Project 212003: Aeration System Improvements	18,320,000	11,850,544	2,569,000	3,662,476	8.7%
Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	47,466,000	26,440,608	15,817,000	11,032,341	26.2%
Project 213007: WRRF Modification to Incinerator Sludge Systems at Complex-II	22,187,000	2,329,474	6,883,404	3,832,956	9.1%
Project 222002: Detroit River Interceptor (DRI) Evaluation and Rehabilitation	44,425,000	2,647,174	3,058,010	3,583,528	8.5%
Selected Projects as a Percentage of the Total	<u>\$ 186,435,000</u>	<u>\$ 68,366,144</u>	<u>\$ 45,085,414</u>	<u>\$ 32,519,728</u>	<u>77.3%</u>
Total			<u>\$ 106,081,010</u>	<u>\$ 42,063,136</u>	<u>100%</u>

The following analysis provides brief highlights related to these projects.

Project 211001–Rehabilitation of Primary Rectangular Clarifiers

	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Wastewater System Projects					
Project 211001: Rehabilitation of Primary Clarifiers					
Rectangular Tanks, Drain Lines, Electrical/Mechanical					
Building and Pipe Gallery	\$ 54,037,000	\$ 25,098,344	\$ 16,308,000	\$ 10,408,427	24.7%

Project Engineer/Manager: Nicolas Nicolas

Manager: Philip Kora

Total Project Budget: \$54,037,000 (\$54,858,000 per 2020 CIP)

Timeline: To be completed by May 2020 (Final Completion)

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contracts/Vendors: PC-757 Toolles Contracting Group; CS-1484 Wade Trim; CS-1432A Alfred Benesch

Project Description: The Rehabilitation of Primary Rectangular Clarifiers Tanks, Drain Lines, Electrical/Mechanical Building, Pipe Gallery, and Replacement of Rake Arm assembly for Circular Primary Clarifiers 15 and 16 at the Water Resource Recovery Facility (WRRF).

Purpose: To improve the operating and maintenance efficiencies that meets the regulatory National Pollution Discharge Elimination (NPDES) Permit and National Electrical code (NEC) requirements.

Status: Rehabilitation of primary rectangular clarifiers 9 through 12 and circular clarifiers 15 and 16 have been completed, commissioned and returned to operation. Rectangular primary clarifiers 7 and 8 were released for contract work on September 11, 2018. Rectangular primary clarifiers 5 and 6 were released for contract work on November 9, 2018. Clarifiers 5,6,7 and 8 are projected to be completed and commissioned by June of 2019. Parts and equipment continue to be delivered to the site for eventual installation in primary rectangular clarifiers 5, 6, 7 and 8 influent gate valves and sludge piping.

Additional Project Manager Comments: As of December 31, 2018. 64.03% of contract time (Final Completion) has elapsed and 63% of funds have been spent (\$32,739,993 out of \$51,905,000).

FY 2019-2023 CIP Section VII Pages 203-204 for Project 211001–Rehabilitation of Primary Rectangular Clarifiers

CIP Number: 211001

Old CIP No.: 291

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

Project Status: Active

Budget: Wastewater

Classification Lvl 1: Wastewater

Classification Lvl 2: WRRF

Classification Lvl 3: Primary Treatment

Project Location: City of Detroit

☐ Innovation

☐ Water MP Right Sizing

☒ Reliability/Redundancy

Project Score



Pipe Gallery

Project Significance: Rehabilitation for meeting NPDES Permit and NEC requirements

Project Engineer/Manager: Nicolas Nicolas

Manager: Philip Kora

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.

Challenges: N/A - Active

Phase Expenses

PHASE	Construction				Contract No	PC-757	Phase Status	Active
Phase Title	PC-757 Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	12,983	16,107	8,671	6,033	0	0	0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	12,983	16,107	8,671	6,033	0	0	0	

Phase Tasks and Dates

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

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

CIP Number: 211001

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	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

Description of CIP Changes

Project 212003-Aeration System Improvements

	Total Project Budget Estimate per FY 2019 - 2023 CIP		Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Wastewater System Projects						
Project 212003: Aeration System Improvements	\$	18,320,000	\$	11,850,544	\$ 2,569,000	\$ 3,662,476 8.7%

Project Engineer/Manager: Vinod Sharma

Manager: Philip Kora

Total Project Budget: \$18,320,000 (\$16,682,000 per 2020 CIP)

Timeline: To be completed by March 2019

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contracts/Vendors: CS-1498, CS-157-Metco Services, PC-796-Weiss Construction

Project Description: The Aeration System Improvements will improve the aeration system and provide necessary inter-connections.

Purpose: The purpose of the project is to rehabilitate and upgrade the aeration system at WRRF. The scope of work includes replacement of process piping, magnetic flow meters, gate valves, butterfly valves, sluice gates and actuators, and variable frequency drives (VFD). The scope of work also includes installing piping between intermediate lift pump (ILP) No. 7 and aeration basin No. 1 so that ILP No. 7 can feed aeration basin No. 1 in addition to aeration basins 2, 3 & 4.

Status: The rehabilitation work associated with Aeration Basin No. 2, 3, and 4 are completed and those basins are put back into operation. Also, VFD for ILP No. 7 is replaced and the 30-day test is scheduled to start in the week of January 28, 2019.

Additional Project Manager Comments: As of December 31, 2018, 90% of the contract time has elapsed and 82% of the contract amount has been spent (\$12,943,501.50 out of 15,835,000.00).

Additional Construction Accounting & Financial Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Section VII Pages 225-226 for Project 212003-Aeration System Improvements

CIP Number: 212003

Old CIP No.: 1194

Project Title: WRRF Aeration System Improvements

Project Status: Active

Budget: Wastewater

Classification Lvl 1: Wastewater

Classification Lvl 2: WRRF

Classification Lvl 3: Secondary Treatment & Disinfe

Project Location: City of Detroit

☐ Innovation

☐ Water MP Right Sizing

☒ Reliability/Redundancy

Project Score



Equipment for aeration system

Project Significance: Improve aeration system and provide necessary inter-connections

Project Engineer/Manager: Kashmira Patel

Manager: Philip Kora

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.

Challenges: N/A - Under Procurement

Phase Expenses									
PHASE	Construction				Contract No	PC-796	Phase Status	Active	
Phase Title	PC-796 Aeration System Improvements								
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond		
	9,087	2,647	2,502	0	0	0	0		
PHASE	Study and Design and Construction Assistance				Contract No	CS-157	Phase Status	Active	
Phase Title	CS-157 Aeration System Improvements								
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond		
	186	72	21	0	0	0	0		
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond		
	9,273	2,719	2,523	0	0	0	0		

Phase Tasks and Dates				
Phase Category	C			
Budget	Wastewater			
Phase Status	Active			
Contract No	PC-796			
	Construction			
	Task Name	Start Date	Duration	End Date
	Scope Development			

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

CIP Number: 212003

Cost Est Class			Task Name	Start Date	Duration	End Date
			Procurement			
			Project Execution	10/3/2016	660	7/25/2018
			Project Closeout	7/26/2018	60	9/24/2018

Phase Category	S/D/CA		Task Name	Start Date	Duration	End Date
Budget	Wastewater		Study and Design and Construction Assistance			
Phase Status	Active		Scope Development			
Contract No	CS-157		Procurement			
Cost Est Class			Project Execution	2/21/2012	2588	3/24/2019
			Project Closeout			

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	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

Description of CIP Changes CS- 1498 is changed to CS-157.

Project 212006-Rouge River Outfall Project

	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Wastewater System Projects					
Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	\$ 47,466,000	\$ 26,440,608	\$ 15,817,000	\$ 11,032,341	26.2%

Project Engineer/ Manager: Philip Kora and Darrel Field (PMA)

Manager: Philip Kora

Total Project Budget: \$47,466,000 (\$48,033,000 per 2020 CIP)

Timeline: To be substantially complete by April 2019

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contracts/Vendors: CS-1781- PMA Consultants and PC-797-CDM Construction

Project Description/Purpose: The Rouge River Outfall Disinfection Project (Phase 2) is MDEQ approved to provide chlorination and de-chlorination to the Rouge River Outfall (RRO) effluent during wet weather events.

Status: Construction has progressed sufficiently to place into service the major chemical systems, including chlorine solution diffusers, sodium hypochlorite, and sodium bisulfite unloading, storage and injection systems. Operation of these systems began on January 24, 2019. Initial operating results indicate satisfactory treatment of both dry and wet weather flows. Work remaining includes: completion of the control system; dewatering, cleaning and inspection of the west chlorine contact conduits to allow installation of chlorine solution diffusers and two flow meters; and various other tasks needed for substantial completion of the project. Completion of these construction tasks is targeted for no later than March 17, 2019 to allow fourteen days of demonstration testing before the required Substantial Completion date on April 1, 2019.

Additional Project Manager Comments: Excluding allowances, PC-797 base contract work was over 90% complete at the end of 2018. Post-dewatering inspection of the west conduits is expected to provide an indication regarding the remaining work which will be required under allowances to clean and repair the conduits.

Additional Construction Accounting & Financial and Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Section VII Pages 231-232 for 212006-Rouge River Outfall Project

CIP Number: 212006

Old CIP No.: 1302

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

Project Status: Active

☐ Innovation

Budget: Wastewater

☐ Water MP Right Sizing

Classification Lvl 1: Wastewater

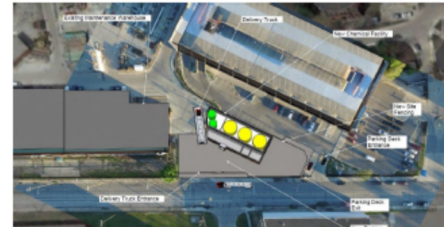
Classification Lvl 2: WRRF

☒ Reliability/Redundancy

Classification Lvl 3: Secondary Treatment & Disinfe

Project Location: City of Detroit

Project Score



Plan view of RRO location

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

Project Engineer/Manager: Darrel Field

Manager: Philip Kora

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.

Challenges: N/A - Under Procurement

Phase Expenses

PHASE	Construction Management				Contract No	CS-1781	Phase Status	Under Procurement
Phase Title	CS-1781 Rouge River Outfall (RRO) Disinfection (Alternative)							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	661	597	156	0	0	0	0	
PHASE	Design and Build				Contract No	PC-797	Phase Status	Under Procurement
Phase Title	PC-797 Rouge River Outfall (RRO) Disinfection (Alternative)							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	19,958	15,220	4,001	0	0	0	0	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond	
	20,619	15,817	4,157	0	0	0	0	

Phase Tasks and Dates

Phase Category	CM	Construction Management
Budget	Wastewater	
Phase Status	Under Procurement	

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

CIP Number: 212006

Contract No	CS-1781		
Cost Est Class			
Phase Category	DB	Design and Build	
Budget	Wastewater		
Phase Status	Under Procurement		
Contract No	PC-797		
Cost Est Class			

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

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	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

Description of CIP Changes	Change Order No.3 has been issued to the Contractor for the phase 2 work (design completion and construction work) for \$38,925,000.
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Project 213007—Modifications to Incinerator Sludge Feed Systems in Complex II at WRRF

	Total Project		Life-to-Date		FY 2019		FY 2019
	Budget Estimate		Through		FY 2019		as a Percent of
	per FY 2019 - 2023		June 30, 2018		Amended Spend		Spend
Wastewater System Projects	CIP				(Unaudited)		(Unaudited)
Project 213007: WRRF Modification to Incinerator							
Sludge Systems at Complex-II	\$	22,187,000	\$	2,329,474	\$	6,883,404	\$ 3,832,956 9.1%

Project Engineer/Manager: Chris Breinling

Manager: Philip Kora

Total Project Budget: \$22,187,000 (\$20,049,000 per 2020 CIP)

Timeline: To be substantially complete in July 2020

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contract/Vendor: GLWA-CON-197 Weiss Construction; CS-060 Black & Veatch; CS-291 Alfred Benesch

Project Description: Modifications to Incinerator Sludge Feed Systems in Complex II at the Water Resource Recovery Facility (WRRF).

Purpose: The project purpose is to replace the belt conveyors that were significantly damaged during the March 2016 fire event. The project also includes replacement of a unit substation, motor control centers, and incinerator induced draft fan starters. New VFD-controlled dual shaft screw conveyors will replace outdated screw conveyors installed on all existing Complex II Incinerators, significantly improving incinerator feed control. Internal painting, instrumentation improvements, SFE strainers, and plumbing upgrades will improve sludge processing operations.

Status: Major restorative painting is approximately halfway completed within Dewatering Complex II and Incineration Complex II. Structural steel placement for belt conveyor E is complete, with belt conveyor G structural steel placement underway. Approximately half of the unit substation is planned to go into service this month, the remaining components going into service in the coming two months. The remaining motor control centers, belt conveyors, auto strainers, and screw conveyors are planned for the remaining portion of calendar year 2019.

Additional Project Manager Comments: As of December 31, 2018, 26% of contract time (Final Completion) has elapsed and 22% of funds have been spent (\$4,049,778.97 out of \$18,631,083.00).

Additional Construction Accounting & Financial and Reporting Team Comments: There are no additional comments to provide at this time.

FY 2019-2023 CIP Section VII Pages 249-250 for 213007-WRRF Modification to Incinerator Sludge Feed Systems at Complex-II

CIP Number: 213007

Old CIP No.: 1311

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

Project Status: Active
Budget: Wastewater
Classification Lvl 1: Wastewater
Classification Lvl 2: WRRF
Classification Lvl 3: Residuals Management
Project Location: City of Detroit

- ☐ Innovation
☐ Water MP Right Sizing
☒ Reliability/Redundancy

Project Score 87.2



Picture from left to right Sludge Conveyor G Damaged by Fire and Conveyor B in the Complex – II Dewatering Building and Fire Damaged Conveyor H in Complex-II Incinerators Building

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.

Project Engineer/Manager: Beena Chackunkal

Manager: Ali Khraizat

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.

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.

Phase Expenses								
PHASE	Construction				Contract No	CON-197	Phase Status	Under Procurement
Phase Title	CON-197 Modification to Incinerator Sludge Feed Systems at Complex -II							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	100	6,685	11,305	3,477	0	0	0	
PHASE	Study and Design and Construction Assistance				Contract No		Phase Status	Active
Phase Title	Wastewater Treatment Plant, Lift Station and Wastewater Collection System Structures Allowance							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	467	102	51	0	0	0	0	
FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	FY24 and Beyond		
567	6,787	11,356	3,477	0	0	0		

CIP Number: 213007

Phase Tasks and Dates																								
Phase Category	C	Construction																						
Budget	Wastewater																							
Phase Status	Under Procurement																							
Contract No	CON-197																							
Cost Est Class																								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <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>8/22/2016</td> <td>430</td> <td>10/26/2017</td> </tr> <tr> <td>Procurement</td> <td>10/30/2017</td> <td>172</td> <td>4/20/2018</td> </tr> <tr> <td>Project Execution</td> <td>4/21/2018</td> <td>1035</td> <td>2/19/2021</td> </tr> <tr> <td>Project Closeout</td> <td>2/20/2021</td> <td>60</td> <td>4/21/2021</td> </tr> </tbody> </table>			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
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																					
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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																					

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

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

Description of CIP Changes	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.
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Project 222002–Detroit River Interceptor (DRI) Evaluation and Rehabilitation

	Total Project Budget Estimate per FY 2019 - 2023 CIP	Life-to-Date Through June 30, 2018	FY 2019 Amended Spend	FY 2019 Activity (Unaudited)	FY 2019 as a Percent of Spend (Unaudited)
Wastewater System Projects					
Project 222002: Detroit River Interceptor (DRI) Evaluation and Rehabilitation	44,425,000	2,647,174	3,508,010	3,583,528	8.5%

Project Engineer/Manager: Mini Panicker

Manager: Biren Saparia

Total Project Budget: \$44,425,000 (\$49,071,000 per 2020 CIP)

Timeline: To be substantially complete in July 2020

FY 2019 Last Pay Estimate Processed: December 31, 2018

Key Contract/Vendor: CON-183 Inland Waters Pollution Control (IWPC); DB-226 Jay Dee Contractors

Project Description/Purpose: There are two projects for the rehabilitation of Detroit River Interceptor (DRI) to bring back the structural integrity to acceptable levels.

- CON-183 for the Emergency Rehabilitation of DRI in the Downtown area under the Ren-Cen Center
- DB-226 for the rehabilitation of DRI from Alter Rd. to the WRRF

Status:

- Con-183 is in the final stages with the construction to be completed by February 28, 2019.
- DB-226 is a SRF funded Design/Build project. The Guaranteed Maximum Price (GMP) is negotiated for Reach 1 and the construction started on November 13, 2018 as per the SRF schedule. GMP is being negotiated for Reach 2. Reach 3 rehabilitation involves the construction of 3 permanent shafts. The GMP for the shaft construction is also being negotiated.

Additional Project Manager Comments: CON-183 final completion date was September 15, 2018, but actual field conditions and unavailability of DRI for work due to the system conditions including wet weather events, delayed the project. New final completion date is February 28, 2019. A change order was processed for \$2.424M due to the increase in the Engineer Directed Cost in the field and lost work days.

FY 2019-2023 CIP Section VII Pages 274-275 for 2222002-Detroit River Interceptor (DRI) Evaluation and Rehabilitation

CIP Number: 222002

Old CIP No.: 1329

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

Project Status: Active

Budget: Wastewater

Classification Lvl 1: Wastewater

Classification Lvl 2: Field Services

Classification Lvl 3: Interceptors

Project Location: City of Detroit

☐ Innovation

☐ Water MP Right Sizing

☒ Reliability/Redundancy

Project Score 65.4



Visual inspection of a large sewer

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.

Project Engineer/Manager: Mini Panicker

Manager: Biren Saparia

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.

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.

Phase Expenses

PHASE	Design and Build				Contract No	Con-183	Phase Status	Pending Close-out
Phase Title	Con-183 Detroit River Interceptor (DRI) Evaluation and Rehabilitation							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
	2,232	0	0	0	0	0	0	
PHASE	Design and Build				Contract No	NA	Phase Status	Future Planned Start
Phase Title	Future Projects for DRI under SRF Funding							
Phase Total	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond	
		1,084	8,052	10,187	10,187	10,187	2,491	
	FY18-Proj	FY19-Proj	FY20-Proj	FY21-Proj	FY22-Proj	FY23-Proj	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				
		Task Name	Start Date	Duration	End Date

CIP Number: 222002

Contract No	NA	Task Name	Start Date	Duration	End Date
Cost Est Class		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

Phase Category	DB	Design and Build
Budget	Wastewater	
Phase Status	Pending Close-out	
Contract No	Con-183	
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	90	5/29/2022

Total Project Expenses (in \$1,000s) Comparison to Prior Year CIP

CIP Version	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
2018		321	10,000	5,000	5,000					20,321
2019		5	2,232	1,084	8,052	10,187	10,187	10,187	2,491	44,425

Description of CIP Changes

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

Construction Work-in-Progress Rollforward

The purpose of the construction work-in-progress (CWIP) rollforward is to analyze the current year activity for each project in relation to the overall capital improvement program as well as the project portfolio overall.

As part of our project life cycle review, the CA&FR team identifies when it is appropriate for projects to be capitalized. Projects are to be capitalized when they have been completed in totality or are inclusive of identifiable assets that have been placed in service. No projects have been identified for Q2 FY 2019 capitalization, but the following projects have been identified for Q3 capitalization:

<u>Project</u>	<u>Contract</u>	<u>Description</u>
260113	Multiple POs	WRRF Fire Remediation
260203	CON-068	Inspection of Collection System – Conner Creek
260301	CON-143	Roof Replacement of Complex II

\$188.2 million is in CWIP as of December 31, 2018 as shown in the table beginning on the next page.

The order of the report on the subsequent pages is in ascending order by CIP project number.

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority

Waste Water System Construction Work-in-Progress (CWIP) FY 2019 Rollforward

Unaudited, Pre-Close Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
211001	Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	\$ 54,037,000	\$ 25,098,344	\$ 16,308,000	\$ 16,308,000	\$ 10,408,427	\$ 35,506,771	\$ -	35,506,771	66%
211002	Pump Station No. 2 Pumping Improvments	3,783,000	322,436	2,454,000	2,454,000	265,106	587,542	-	587,542	16%
211003	Rehabilitation of Primary Clarifiers	2,231,000	-	-	-	-	-	-	-	0%
211004	Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements	27,647,000	24,505,435	2,752,000	2,752,000	939,325	25,444,760	-	25,444,760	92%
211005	Pump Station No. 2 Improvements	22,087,000	-	-	-	-	-	-	-	0%
211006	Pump Station No. 1 Improvements	24,120,000	88	500,000	500,000	4,459	4,547	-	4,547	0%
211007	Replacement of Bar Racks and Grit Collection System at Pump Station No. 2	20,563,000	-	7,000	7,000	-	-	-	-	0%
211008	Rehabilitation of Ferric Chloride Feed systems at the Pump Station -1 and Complex B Sludge Lines	12,013,000	12,386	7,000	7,000	28,166	40,552	-	40,552	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
211009	Rehabilitation of the Circular Primary Clarifier Scum Removal System	12,239,000	-	-	-	30	30	-	30	0%
212001	Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for Secondary Clarifiers	34,090,000	-	-	-	-	-	34,089,672	34,089,672	100%
212002	Study, Design, & Construction, Management Services for Modified Detroit River Outfall No. 2 - WRRF	10,819,000	10,818,870	-	-	-	10,818,870	-	10,818,870	100%
212003	Aeration System Improvements	18,320,000	11,850,544	2,719,000	2,569,000	3,662,476	15,513,020	-	15,513,020	85%
212004	Project Chlorination/Dechlorination Process Equipment Improvements	5,270,000	116,927	2,101,000	2,101,000	8,576	125,503	-	125,503	2%
212005	Rouge River Outfall No. 2 (RRO-2) Segment 1- WWTP Modifications	252,000	-	-	-	-	-	251,881	251,881	100%
212006	PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	47,466,000	26,440,608	15,817,000	15,817,000	11,032,341	37,472,949	-	37,472,949	79%
212007	Rehabilitation of the Secondary Clarifiers	34,805,000	-	-	-	-	-	-	-	0%

Wastewater System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
212008	WRRF Rehabilitation of Intermediate Lift	20,516,000	-	-	-	-	-	-	-	0%
213001	Replacement of Belt Filter Presses for Complex I and Upper Level Complex II	36,669,000	-	-	-	-	-	36,669,231	36,669,231	100%
213002	Rehabilitation of Central Offload Facility	19,413,000	982,301	6,447,000	4,947,000	21,380	1,003,681	-	1,003,681	5%
213003	Sewage Sludge Incinerator Air Quality Improvements at WRRF	51,094,000	-	-	-	-	-	36,675,871	36,675,871	72%
213004	Biosolids Dryer Facility at WRRF	2,240,000	-	23,000	23,000	25,747	25,747	2,408,470	2,434,216	109%
213005	Complex I Incinerators Decommissioning and Reusability	4,905,000	42,950	-	-	150,059	193,009	-	193,009	4%
213006	Improvements to Sludge Feed Pumps at Dewatering Facilities	3,857,000	4,856	-	-	2,894	7,750	-	7,750	0%
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	22,187,000	2,329,474	6,787,000	6,883,404	3,832,956	6,162,430	-	6,162,430	28%
213008	Rehabilitation of the Wet and Dry Ash Handling Systems	20,616,000	-	-	-	-	-	-	-	0%
213009	Phosphorous Recovery Facility at the WWRF	-	3,536	-	-	-	3,536	-	3,536	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
214001	Relocation of Industrial Waste Division and Analytical Laboratory Operations	12,947,000	572,845	4,001,000	4,001,000	1,563,550	2,136,395	-	2,136,395	17%
215001	Rehabilitation of Combined Sewer Overflow (CSO) Retention Treatment Basins (RTB), Screening and Disinfection Facilities (SDF)	-	-	-	-	-	-	1,699,489	1,699,489	0%
216001	Underground Electrical Duct Bank Repair and EB-1, EB-2, and EB-10 Primary Power Service Improvements - WRRF	32,669,000	-	-	-	-	-	32,685,875	32,685,875	100%
216002	Plant-wide Fire Alarm Systems Upgrade/Integration and Fire Protection Improvements	850,000	-	-	-	-	-	849,278	849,278	100%
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	5,425,000	439,040	551,000	784,000	58,803	497,842	-	497,842	9%

Wastewater System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
216005	Rehabilitation of the Main Plant Maintenance Building, Replacement of various Plant Maintenance Areas and Work Environment Improvement.	-	-	-	-	-	-	-	-	0%
216006	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water System	54,456,000	-	-	-	2,470	2,470	-	2,470	0%
216007	DTE Primary Electric 3rd Feed Supply Line to the WRRF	6,669,000	40,186	2,002,000	2,002,000	-	40,186	543,500	583,686	9%
222001	Intercommunity Relief Sewer Modifications in Detroit Oakwood District	38,000,000	-	-	-	-	-	-	-	0%
222002	Detroit River Interceptor Evaluation and Rehabilitation	44,425,000	2,647,174	1,084,000	3,508,010	3,583,528	6,230,701	-	6,230,701	14%
222003	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation	26,000,000	-	-	-	-	-	-	-	0%
222004	Collection System Valve Remote Operation Structures Improvements	2,374,000	-	1,019,000	1,019,000	-	-	-	-	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
222005	Collection System Access Hatch Improvements	2,763,000	-	1,000,000	1,000,000	-	-	-	-	0%
222007	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.	21,003,000	-	4,000	4,000	-	-	-	-	0%
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	31,768,000	1,550,604	12,094,000	11,985,000	7,867	1,558,471	-	1,558,471	5%
232002	Freud and Connor Creek Pump Station Improvements	32,482,000	5,052,490	1,192,000	1,192,000	278,195	5,330,685	57,734	5,388,420	17%
232003	Northeast Pump Station Improvements	26,328,000	-	-	-	-	-	-	-	0%
233002	Collection System In System Storage Devices(ISDs) Improvements	3,550,000	-	82,000	82,000	235	235	-	235	0%
251002	Wastewater System Wide Instrumentation & Controls Software and Hardware Upgrade	14,048,000	-	877,000	877,000	71	71	-	71	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
260100	Water Resource Recovery Facility (WRRF), Lift Station & Wastewater Collection System Allowance	25,753,000	-	1,100,000	1,003,596	-	-	-	-	0%
260101	Plant-Wide Replacement of Emergency Lighting	-	-	-	-	-	-	1,245,972	1,245,972	0%
260102	Replace Stairs - WWTP	-	-	-	-	-	-	109,082	109,082	0%
260103	Replace 4 DS-706 Centrifuges WWTP	-	-	-	-	-	-	779,079	779,079	0%
260104	Pur Installation of EB-25 Unit WWTP	-	-	-	-	-	-	20,768	20,768	0%
260105	Replace Various Air Distribution Equip	-	-	-	-	-	-	867,574	867,574	0%
260107	Pump Station 2 Replacement	-	-	-	-	-	-	-	-	0%
260108	Sanitary Meter Replacement: Neff Road	-	-	-	-	-	-	376,613	376,613	0%
260110	Black& Veatch:	-	-	-	-	-	-	-	-	0%
260111	W-3 Construct: Overhead Door	-	-	-	-	-	-	551,169	551,169	0%
260112	Connor Creek	-	-	-	-	-	-	353,889	353,889	0%
260113	Fire Remediation	-	19,233,711	-	-	-	19,233,711	-	19,233,711	\$ -

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	77,749,000	-	10,601,000	2,000,000	-	-	-	-	0%
260201	Conveyance System Interceptor Rehab	-	8,912,692	-	8,601,000	1,810,865	10,723,556	-	10,723,556	0%
260202	Conveyance System Interceptor Rehab	-	-	-	-	7,250	7,250	-	7,250	0%
260203	Inland: Sewer Inspection	-	4,642,066	-	-	-	4,642,066	-	4,642,066	0%
260300	Schedule Replacement Program of Critical Assets	11,028,000	-	-	-	-	-	-	-	0%
260301	Roof Replacement of Complex II	-	-	-	-	88,970	88,970	1,672,747	1,761,717	0%
260302	Repair HVAC	-	-	-	-	-	-	-	-	0%
260400	Sewage Meter Design, Installation, Replacement and Rehabilitation Program	8,600,000	-	1,700,000	1,700,000	-	-	-	-	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
260500	CSO Outfall Rehab	44,337,000	-	507,000	-	-	-	-	-	0%
260502	CSO Outfall Rehab	-	8,799	-	507,000	2,376,032	2,384,830	-	2,384,830	0%
260503	Collection System Backwater Gates	-	-	-	-	362	362	-	362	0%
260600	CSO Facilities Improvements Program	45,221,000	191,848	9,277,000	2,456,000	18,589	210,437	-	210,437	0%
260601	Oakwood Drain Valve Improvements	-	-	-	-	184,145	184,145	-	184,145	0%
260602	CSO Fire Alarm System Improvements	-	-	-	-	163,405	163,405	-	163,405	0%
260603	Conner Creek CSO Basin Rehab	-	243,224	-	6,821,000	1,381,841	1,625,065	-	1,625,065	0%
260604	Baby Creek CSO Rehab	-	45,791	-	-	134,656	180,447	-	180,447	0%
260605	CSO Facilities CA	-	-	-	-	7,056	7,056	-	7,056	0%
260606	Puritan Fenkell Roof Replacement	-	-	-	-	1,185	1,185	-	1,185	0%
260607	Lieb SDF Electrical Improvements	-	-	-	-	2,274	2,274	-	2,274	0%
260609	Seven Mile RTB - Parking Lot / Sitework	-	-	-	-	1,594	1,594	-	1,594	0%
260610	Baby Creek MAU Replacement	-	-	-	-	310	310	-	310	0%
260611	HVAC Improvements at Leib SDF	-	-	-	-	439	439	-	439	0%
331002	Roofing Systems Replacement at GLWA Wastewater Treatment Plant, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities (SDF)	-	-	286,000	286,000	3,670	3,670	-	3,670	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
361001	Consolidated Process Control System Upgrades	-	-	-	-	-	-	315,627	315,627	0%
361002	Data Center Reliability/Availability Improvements	-	-	-	-	-	-	17,253	17,253	0%
361003	SCADA Radio Network Upgrade	-	-	-	-	-	-	852,872	852,872	0%
380400	As-needed CIP Implementation Assistance and Related Services	-	-	803,000	803,000	-	-	-	-	0%
380401	PMA: As Needed CIP Services	-	-	-	-	-	-	-	-	0%
380500	Department-wide General Engineering Services on an As-needed Basis	-	-	114,000	114,000	-	-	-	-	0%
380501	MetcoServices:General Engineer	-	-	-	-	-	-	-	-	0%
380600	General Engineering Services	-	-	51,000	51,000	-	-	-	-	0%
380601	Alfred Benesh:General Engineer	-	632	-	-	3,832	4,464	-	4,464	0%
380701	Engineering Svc Concrete Testing, Soil Borings	-	-	-	-	-	-	-	-	0%

Wastewater System Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Project	Project Name	Total Project Budget Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018	FY 2019 Board Approved CIP Spend	FY 2019 Amended Spend	FY 2019 Activity through December 31, 2018	CWIP Balance, December 31, 2018 (Unaudited)	Life To Date Capitalization through December 31, 2018	Life to Date Activity through December 31 2018	Life to Date Activity / Total Project Estimate
380900	General Engineering Services	-	-	916,000	916,000	-	-	-	-	0%
380901	Sigma Assoc: General Engineering	-	-	-	-	-	-	-	-	0%
4824	DWSD- Reha/Replacement Existing Sewer	-	56,280	-	-	-	56,280	-	56,280	0%
Total		\$ 1,079,684,000	\$ 146,166,135	\$ 105,183,000	\$ 106,081,010	\$ 42,063,136	\$ 188,229,270	\$ 153,093,645	341,322,915	32%
					Net FY 2019 Spending Plan Amendments	\$ 898,010				

*Projects with activity and no current fiscal year board approved CIP spend are being evaluated for spending plan amendments with amendments anticipated prior to Q3 FY 2019 CWIP. As GLWA Engineers commence on developing scopes for projects ahead of the FY 2019 CIP Plan the related salaries and benefits are identified in the FY 2019 activity and accumulated to the associated CIP Project CWIP account which has resulted in a number of instances where FY 19 activity exists on projects without amended spend.

FY 2019 Spending Plan Amendment Summary

The purpose of the Spending Plan Amendment Summary is to illustrate the amendments to the current fiscal year spend for each project with a spending plan amendment resulting in an amended spend amount or the use of allowance and program funding for a specific project necessitated by contract award.

The award of CIP contracts and the related execution thereof may result in deviation from the amount and timing of planned spend. Acknowledging the aforementioned deviation, spending plan amendments are prepared to fund the related increase or decrease either to or from the Capital Reserve to amend the board approved fiscal year planned spend accordingly and to inform decision makers in the development of future Capital Improvement Plans. Similar to the spending plan amendments prepared for the Capital Reserve, spending plan amendments are also prepared for contracts that are planned or funded by way of the CIP Program and Allowance accounts. As additional contracts are awarded and other project information becomes available additional spending plan amendments to the Capital Reserve will be prepared to amend the planned spend for FY 2019.

\$.89 million of Capital Reserve spending plan amendments have been prepared as of December 31, 2018 as shown in the table on the next page along with spending plan amendments detailing the assignment of funding within Program and Allowance accounts.

The order of the report on the subsequent page is in ascending order by CIP project number.

Wastewater System

Construction Work-in-Progress Quarterly Report

As of December 31, 2018

Great Lakes Water Authority
Wastewater System FY 2019 Spending Plan Amendment Summary - Due to Changes in Project Cost and/or Timing
Unaudited Activity For the Fiscal Year Ended December 31, 2018

Project	Project Name	Capital Reserve	Program / Allowance	Grand Total
212003	Aeration System Improvements	\$ (150,000)	\$ -	\$ (150,000)
213002	Rehabilitation of Central Offload Facility	(1,500,000)	-	(1,500,000)
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	-	96,404	96,404
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	233,000	-	233,000
222002	Detroit River Interceptor Evaluation and Rehabilitation	2,424,010	-	2,424,010
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	(109,000)	-	(109,000)
260100	Water Resource Recovery Facility (WRRF), Lift Station & Wastewater Collection System Allowance	-	(96,404)	(96,404)
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	-	(8,601,000)	(8,601,000)
260201	Conveyance System Interceptor Rehab	-	8,601,000	8,601,000
260500	CSO Outfall Rehab	-	(507,000)	(507,000)
260502	CSO Outfall Rehab	-	507,000	507,000
260600	CSO Facilities Improvements	-	(6,821,000)	(6,821,000)
260603	Conner Creek CSO Basin Rehab	-	6,821,000	6,821,000
Grand Total		\$ 898,010	\$ -	\$ 898,010

Glossary of Acronyms

ACRONYM	DEFINITION	ACRONYM	DEFINITION
CCD	Construction Change Directive	NPDES	National Pollution Discharge Elimination System
CSO	Combined Sewer Overflow	RAS	Return Activated Sludge
CIPP	Cured in Place Pipe Lining	RRO	River Rouge Outfall
DCB	Detailed Cost Breakdown	RTB	Retention Treatment Basin
ESR	Equipment Shutdown Request	SDF	Screening and Disinfection Facility
HPO	High Purity Oxygen	SFE	Screened Final Effluent
ISDs	In System Storage Devices	SPW	Springwells Water Treatment Plant
IWC	Industrial Waste Control	VFD	Variable Frequency Drive
MCC	Motor Control Centers	WRRF	Water Resource Recovery Facility
MDEQ	Michigan Department of Environmental Quality	WTP	Water Treatment Plant
NAB	New Administration Building		
NIEA	North Interceptor East Arm		