Financial Services
Audit Committee Communication

Date: December 21, 2018

To: Great Lakes Water Authority Audit Committee

From: Andrew Sosnoski, Manager, Construction Accounting & Financial Reporting

Re: FY 2019 Q1 Construction Work-in-Progress Report through September 30, 2018

Background: The quarterly construction work-in-progress (CWIP) provides information and analysis related to the execution of the Great Lakes Water Authority capital improvement program (CIP).

Analysis: The attached documents summarize the FY 2019 Q1 CWIP activity and provides a detailed snapshot to inform decision makers and stakeholders.

Proposed Action: Receive and file report.

Construction Work-in-Progress Quarterly Report
(Unaudited, Pre-close)

As of September 30, 2018

For questions, please contact:

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Prepared 12.14.2018

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December 21st, 2018

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 September 30, 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 on the previously anticipated month of 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:

Percent of Spend Compared to Budget and Capital Improvement Plan (CIP) Requests: 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 status or financial activity. This table may be used to revisit priorities, workload, and phasing.

Financial Information

All project amounts are unaudited and are "pre-close". This means that direct contractor costs are generally included in these totals with most pay estimates entered through September 30, 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
- ✓ 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 scheduled will communicate upcoming planned timing of development of scopes, planned durations for RFB/RFP solicitations as well as any planned design or construction starts/finish dates for a given duration.

WATER SYSTEM

Percent of Spend Compared to Annual Budget and Capital Improvement Plan (CIP) Requests

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 September 30, 2018 is 103.8% of the FY 2019 prorated budget. 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.

Water System Projects	FY 2018 Amended Budget	FY 2018 Pre-Close Activity (Unaudited)	FY 2018 Pre-Close as a Percent of Budget (Unaudited)	FY 2019 Amended Budget	FY 2019 Prorated (Three Months)	FY 2019 Pre-Close Activity (Three Months) (Unaudited)	FY 2019 Pre-Close as a Percent of Prorated Budget (Three Months) (Unaudited)
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 CIP Project Requests				$ 66,038,000	$ 16,509,500	$ 17,142,579	103.8%

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 $8.6 million or 50.0% 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.

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	$ 8,642,000	$ 1,864,811	$ 3,666,000	$ 2,439,488	**14.2%**
Project 114001- Springwells WTP 1958 Filter Rehabilitation	$ 93,464,000	$ 66,571,119	$ 3,501,000	$ 2,009,685	**11.7%**
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement	2,906,000	1,123,542	2,420,000	1,709,171	**10.0%**
Project 116002- PA, SW and NE Raw Water Tunnel Improvements	33,079,000	2,177,985	9,042,000	2,416,810	**14.1%**
Selected Projects as a Percentage of the Total	$ 138,091,000	$ 71,737,457	$ 18,629,000	$ 8,575,154	**50.0%**
Total			**$ 66,038,000**	**$ 17,142,579**	**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 per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 111002 - LH WTP Miscellaneous Mechanical HVAC Improvements	$ 8,642,000	$ 1,864,811	$ 3,666,000	$ 2,439,488	**14.2%**

Project Engineer/Manager: Todd King
Manager: Grant Gartrell
Total Budget: $8,642,000
Timeline: May 2020
FY 2019 Last Pay Estimate Processed: September 30, 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: Rehabilitation of the meters will provide direct measurement of finished water flows that are pumped out of the plants to the transmission system. The rehabilitated flow meters will improve the accuracy and reliability of measuring water production flows from these water treatment plants.

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.

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

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

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
Budget	Water
Phase Status	New
Contract No	CON-212
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	11/15/2016	90	2/13/2017
Procurement	2/14/2017	365	2/14/2018
Project Execution	2/15/2018	798	4/23/2020
Project Closeout	4/24/2020	90	7/23/2020

Phase Category	C
Budget	Water
Phase Status	Future Planned Start
Contract No	CON-182
Cost Est Class	

Construction

Task Name	Start Date	Duration	End Date
Scope Development	8/27/2016	90	11/25/2016
Procurement	11/26/2016	365	11/26/2017
Project Execution	11/27/2017	179	5/25/2018
Project Closeout	5/26/2018	90	8/24/2018

Phase Category	S/D/CA
Budget	Water
Phase Status	Active
Contract No	CS-1732
Cost Est Class	

Study and Design and Construction Assistance

Task Name	Start Date	Duration	End Date
Scope Development	2/21/2015	90	5/22/2015
Procurement	5/23/2015	365	5/22/2016
Project Execution	5/23/2016	1431	4/23/2020
Project Closeout	4/24/2020	90	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 per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 114001- Springwells WTP 1958 Filter Rehabilitation	$ 93,464,000	$ 66,571,119	$ 3,501,000	$ 2,009,685	**11.7%**

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: September 30, 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 continues with the renovation of the laboratory and offices in the administration building, installation of new heating, ventilating and air-conditioning equipment in the administration building, construction of the 1958 breezeway, installation of high-pressure water pumping unit, constant-level washwater tank fill control valve and phosphoric acid feed system, upgrading the plant's distributed control system and related instrumentation serving the 1930 and 1958 filters and chemical feed systems, startup and commissioning of the dehumidification, ventilation and heating systems for the 1930 and 1958 filter buildings, and final operational demonstration testing of the re-constructed 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 62 for Project 114012- Springwells WTP 1930 Filter Building Roof Replacement

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.

Project 114012-Springwells WTP 1930 Filter Building Roof Replacement

Water System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 114012-Springwells WTP 1930 Filter Building Roof Replacement	2,906,000	1,123,542	2,420,000	1,709,171	**10.0%**

Project Engineer/Manager: Peter Fromm
Manager: Paula Anderson
Total Budget: $2,906,000
Timeline: Spring 2019
FY 2019 Last Pay Estimate Processed: September 30, 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 40 out of the 46 roof sections completed with 37 out of the 46 sections completed with the new sheet metal. The project is on-schedule 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: There are no additional comments to provide at this time.

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				

	FY18	FY19	FY20	FY21	FY22	FY23	FY24 and Beyond
Phase Total	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
Budget	Water
Phase Status	Under Procurement
Contract No	NA
Cost Est Class	

Design and Build

Task Name	Start Date	Duration	End Date
Scope Development	10/1/2017	91	12/31/2017
Procurement	12/31/2017	272	9/29/2018
Project Execution	9/29/2018	456	12/29/2019

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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 per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close 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	2,416,810	**14.1%**

Project Engineer/Manger: Todd King
Manager: Grant Gartrell
Total Budget: $33,079,000
Timeline: The detailed investigation and preliminary design work under this contract is scheduled to be completed by March 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: September 30, 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 and Springwells tunnels has been completed. The Northeast tunnel work will conclude in early November. A preliminary findings meeting will be scheduled for mid-January 2019.

Additional Project Manager 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
Budget	Water
Phase Status	Active

Design and Build

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
Cost Est Class	

Task Name	Start Date	Duration	End Date
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.

The CWIP Rollforward provides a project status for each item.

Future Year:	Project that was included in the CIP with no expenditures (F)
Active:	Project in which procurement process has been initiated and expenditures incurred (A)
Pending Close:	Project that has no projected expenditures for the current fiscal year and has reached substantial completion (PC)
Closed:	Project that has been closed and capitalized (C)

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 Q1 FY 2019 capitalization.

$**159.0** million is in CWIP as of September 30, 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.

Status	Project Count	Total Project Estimated Budget	Percent of Total
Future	35	613,030,000	36.40%
Active	76	1,050,353,000	62.35%
Pending Close	5	20,110,000	0.19%
Closed	3	709,000	0.04%
Grand Total	**119**	**1,684,202,000**	**100%**

Great Lakes Water Authority
Water System Construction Work-in-Progress (CWIP) FY 2019 Rollforward
Unaudited, Pre-Close Activity For the Fiscal Year Ended September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
111002	LHWTP Backflow Replacement	$ 8,642,000	$ 1,864,811	$ 3,666,000	$ 2,439,488	$ 4,304,299	$ 155,348	$ 4,459,647	52%
116002	Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements based on	33,079,000	2,177,985	9,042,000	2,416,810	4,594,795		4,594,795	14%
114001	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities	93,464,000	66,571,119	3,501,000	2,009,685	68,580,803	22,738,455	91,319,258	98%
114012	Springwells Water Treatment Plant 1930 Filter Building-Roof Replacement	2,906,000	1,123,542	2,420,000	1,709,171	2,832,713		2,832,713	97%
115004	Water Works Park WTP Chlorine System Upgrade	7,049,000	2,526,753	3,124,000	1,295,093	3,821,846		3,821,846	54%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
114003	Water Production Flow Metering Improvements at NE, SW, and SPW WTP	7,159,000	3,444,814	2,506,000	1,253,088	4,697,902		4,697,902	66%
170502	Transmission System Valve Assessment and Rehabilitation/Replacem e		248,175		1,144,618	1,392,793	3,182,318	4,575,112	100%
114015	Emergency Grating Replacement at Springwells WTP	2,772,000	203,833	11,000	719,531	923,364	2,533,164	3,456,527	125%
114002	Springwells Water Treatment Plant - Low Lift and High Lift Pump Station	85,503,000	498,042	1,433,000	503,425	1,001,467		1,001,467	1%
122004	96-inch Main Relocation, Isolation Valves Installations, and New Parallel Main	132,667,000	1,129,751	1,797,000	474,952	1,604,702		1,604,702	1%
122003	New Waterworks Park to Northeast Transmission Main	130,879,000	1,655,004	1,372,000	324,419	1,979,423		1,979,423	2%
170301	Water Plant Automation		1,376,747		313,171	1,689,918		1,689,918	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
115001	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	71,051,000	681,626	968,000	300,071	981,697		981,697	1%
132008	Needs Assessment Study for all Water Booster Pumping Stations	1,933,000	912,550	1,178,000	280,569	1,193,118		1,193,118	62%
170104	Orion and Newburgh Pumping Stations Improvements		364,343		253,603	617,946		617,946	100%
112002	Low Lift Pumping Plant Caisson Rehabilitation at Northeast WTP	1,717,000	472,953	831,000	245,332	718,285		718,285	42%
170120	Phsphoric Acid Feed System Improvements at Southwest WTP		130,688		230,110	360,799		360,799	100%
113004	Residual Handling Facility's Decant Flow Modifications at Southwest WTP	3,352,000	198,431	1,054,000	199,356	397,787		397,787	12%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
111007	Lake Huron WTP-Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	7,084,000	283,989	212,000	179,226	463,215		463,215	7%
114013	Springwells Reservoir Fill Line Improvements	6,508,000	332,385	2,469,000	125,869	458,254		458,254	7%
114006	Replacement of Rapid Mix Units at Springwells WTP 1958 Process Train	1,722,000	176,992	1,284,000	118,667	295,658		295,658	17%
122011	Park-Merriman Water Main-Final Phase	6,209,000	156,338	955,000	90,215	246,553		246,553	4%
122012	36-inch Water Main in Telegraph Road	10,385,000	9,418,001	3,000	87,550	9,505,551		9,505,551	92%
122006	Transmission System Water Main Work-Wick Road Parallel Water Main	24,319,000	126,146	1,743,000	87,386	213,532		213,532	1%
132004	Hydraulic Surge Control for North Service Center Pumping Station	232,000	214,771		69,348	284,119		284,119	122%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
132006	Pressure and Control Improvements at the Electric, Ford Road, Michigan, and West Chica	2,609,000	161,460	245,000	64,056	225,516		225,516	9%
171501	Roof Replacement - Var Water Facilities		50,420	111,000	53,488	103,908		103,908	100%
170401	Emergency Bypass Around Ypsilanti Station		-		38,427	38,427		38,427	100%
122005	Replacement Schoolcraft Watermain	13,805,000	3,960	50,000	35,866	39,826		39,826	0%
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pumping Station	557,000	9,170	38,000	29,816	38,986		38,986	7%
114008	1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements at Springwells WTP	17,107,000	-	424,000	29,019	29,019		29,019	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
132010	West Service Center/Duval Rd Division Valve Upgrades	37,136,000	-		23,745	23,745		23,745	0%
115003	Comprehensive Condition Assessment at Waterworks Park WTP	546,000	439,606	262,000	17,190	456,796		456,796	84%
111006	Replacement of Filter Instrumentation and Raw Water Flow Metering Improvements at Lake	26,315,000	734,756	43,000	15,151	749,908		749,908	3%
170109	Inspection of Raw Water Intakes and Tunnels		3,054,241		14,006	3,068,247		3,068,247	100%
114011	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	11,621,000	473,029	1,406,000	11,197	484,226		484,226	4%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
111004	Electrical Tunnel Rehabilitation at Lake Huron WTP	4,832,000	62,685	414,000	10,458	73,144		73,144	2%
170102	Water Production Plant Flow Mettering Improvements at NE, SP & SW WTP		335,197		10,269	345,466		345,466	100%
113002	High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP	5,484,000	249,447	1,157,000	10,011	259,458		259,458	5%
132003	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	1,538,000	138,390	1,229,000	8,313	146,704		146,704	10%
111001	Energy Management: Lake Huron Water Treatment Plant Low Lift Pumping Improvements	52,388,000	-		5,632	5,632		5,632	0%
122016	Downriver Transmission Loop	37,197,000	-		3,355	3,355		3,355	0%
132012	Ypsilanti PS Improvements	9,147,000	3,648	93,000	3,258	6,906		6,906	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
122013	Lyon Township Transmission Main Extension Project	54,426,000	-		3,257	3,257		3,257	0%
170201	Construction & Environmental Testing		1,609		3,239	4,848		4,848	100%
114005	Springwells WTP Admin Building Improvements	8,125,000	-	30,000	3,028	3,028		3,028	0%
170121	Franklin PS Valve Rehab		-		1,865	1,865		1,865	100%
112004	NE WTP Relocation of Service Line	2,460,000	-		1,155	1,155		1,155	0%
170103	Belle Isle Water Supply Intake and Ice Boom Improvements		-		879	879	286,596	287,475	100%
132024	Project Cancelled	19,109,000	-		440	440		440	0%
114010	Yard Piping Improvements	110,129,000			292	292		292	0%
132023	Project Cancelled	19,109,000	-		219	219		219	0%
111008	LHWTP Architectural Programming - Lab	300,000	-		102	102		102	0%
113003	Replacement of Butterfly Valves	148,286,000	-		51	51		51	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
170801	Reservoir Inspection, Design and Rehabilitation at Imlay Station,		-		43	43		43	100%
170200	As Needed Construction Materials, Environmental Media and Speical	1,788,000		472,000		-		-	0%
170110	Raw Water Sampling Improvements		2,926			2,926		2,926	100%
122001	Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road	35,384,000	33,565,809		-	33,565,809		33,565,809	95%
170500	Transmission System Valve Assessment and Rehabilitation/Replacem e	22,000,000		4,000,000		-		-	0%
170400	Water Transmission Improvement Program	11,804,000		1,000,000		-		-	0%
132001	Wick Road Station Rehabilitation	147,000	130,253			130,253		130,253	89%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
114009	Springwells Water Treatment Plant Service Area Redundancy Study	338,000	311,129			311,129		311,129	92%
122007	Design and Construction of a new Newburgh Road 24" Main along Newburgh Road between Ch	5,247,000	-	653,000		-		-	0%
122002	Replacement of Five (5) PRV Pits of Treated Water Transmission System	2,367,000	1,844,499			1,844,499		1,844,499	78%
170300	Water Treatment Plant Automation Program	7,801,000		61,000		-		-	0%
170402	Emergency Manned Visual Inspection 84-Inch Transmission Main		156,020			156,020		156,020	100%
122009	Water System Improvements in Joy Road from Southfield Road to Trinity	107,000	106,881			106,881		106,881	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
170600	Water Transmission Main Asset Assessment Program	26,133,000	-	2,501,000		-		-	0%
171300	WWP - WTP Sanitary Improvements	488,000	-	45,000		-		-	0%
170117	Instrument Air Compressor Systems Replacement at NE-WTP		226,483			226,483		226,483	100%
7412	SRF WS-693		3,390,974		-	3,390,974		3,390,974	100%
170800	Reservoir Inspection, Design and Rehabilitation at Imlay Station,	19,099,000	-	472,000		-		-	0%
171100	NE - WTP Sanitary Improvements	796,000	-	75,000		-		-	0%
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement	20,500,000	-	4,613,000		-		-	0%
171000	LH - WTP Sanitary Improvements	488,000	-	45,000		-		-	0%
171200	SW - WTP Sanitary Survey Improvements	717,000	-	6,000		-		-	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance, July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity through September 30, 2018	Life to Date Activity / Total Project Estimate
170100	Allowance: WTP/Pump Station	39,872,000	-	4,296,000		-		-	0%
351001	Water Facility Lighting Renovations			1,172,000		-		-	100%
361002	Data Center Reliability/Availability Improvements		16,080			16,080		16,080	100%
380400	As-needed CIP Implementation Assistance and Related Services			803,000		-		-	100%
380601	Alfred Benesh:General Engineer		674			674		674	100%
380600	General Engineering Services			276,000		-		-	100%
380700	As-needed Engineering Services for Concrete Testing, Geotechnical Soil Borings, other Testing Services, and Related Services			477,000		-		-	100%
170108	DWS-063 Adams Road		625			625		625	100%
Total		**$ 1,684,202,000**	**$ 141,885,761**	**$ 66,038,000**	**$ 17,142,579**	**$ 159,028,340**	**$ 57,057,350**	**$ 216,085,690**	**13%**

WASTEWATER SYSTEM

Percent of Spend Compared to Annual Budget and Capital Improvement Plan (CIP) Requests

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 September 30, 2018 is 84.9% of the FY 2019 prorated budget. 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.

Wastewater System Projects	FY 2018 Amended Budget	FY 2018 Pre-Close Activity (Unaudited)	FY 2018 Pre-Close as a Percent of Budget (Unaudited)	FY 2019 Amended Budget	FY 2019 Prorated (Three Months)	FY 2019 Pre-Close Activity (Three Months) (Unaudited)	FY 2019 Pre-Close as a Percent of Prorated Budget (Three Months) (Unaudited)
FY 2018 CIP Project Requests	$ 160,746,000	49,043,353	30.5%				
FY 2018 CIP Realigned Forecast as per 2019 CIP	70,632,000	69,567,318	98.5%				
FY 2019 CIP Project Requests				$ 105,183,000	26,295,750	22,315,253	84.9%

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, **four projects account for $19.9 million or 89.4% 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 per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close 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	$ 8,130,505	**36.4%**
Project 212003: Aeration System Improvements	$ 18,320,000	$ 11,850,544	$ 2,719,000	$ 3,131,752	**14.0%**
Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	$ 47,466,000	$ 26,440,608	$ 15,817,000	$ 7,498,159	**33.6%**
Project 213007: WRRF Modification to Incinerator Sludge Systems at Complex-II	$ 22,187,000	$ 2,329,474	$ 6,787,000	$ 1,192,024	**5.3%**
Selected Projects as a Percentage of the Total	$ 142,010,000	$ 65,718,970	$ 41,631,000	$ 19,952,440	**89.4%**
Total			**$ 105,183,000**	**$ 22,315,253**	**100%**

The following analysis provides brief highlights related to these projects.

Project 211001–Rehabilitation of Primary Rectangular Clarifiers

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close 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	$ 8,130,505	**36.4%**

Project Engineer/Manager: Nicolas Nicolas
Manager: Philip Kora
Total Project Budget: $54,037,000
Timeline: To be completed by May 2020
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contracts/Vendors: PC-757 Tooles Contracting Group

Project Description: The Rehabilitation of Primary Rectangular Clarifiers, 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 9-12 and primary circular clarifier 15 have been completed and returned to operation. Primary rectangular clarifiers 7 and 8 were released for contract work on September 11, 2018. Primary circular clarifier 16 is undergoing contract rehabilitation work and is expected to be back in operation in November 2018. Once the primary circular clarifier 16 is placed in operation, two additional primary rectangular clarifiers 5 and 6 will be released for Contract work. Parts and equipment continue to be delivered to the site for eventual installation in primary rectangular clarifiers 5, 6, 7 and 8.

Additional Project Manager Comments: As of September 30, 2018. 58% of contract time (Final Completion) has elapsed and 59% of funds have been spent.

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

Construction

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

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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

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 212003: Aeration System Improvements	$ 18,320,000	$ 11,850,544	$ 2,719,000	$ 3,131,752	**14.0%**

Project Engineer/Manager: Vinod Sharma
Manager: Philip Kora
Total Project Budget: $18,320,000
Timeline: To be completed by March 2019
FY 2019 Last Pay Estimate Processed: September 30, 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: To increase the efficiency of oxygen used in the High Purity Oxygen (HPO)activated sludge process, reduce the risk of mechanical failures with the replacement/rehabilitation of the Influent and Return Activated Sludge (RAS) valves/pipeline would meet regulatory guidelines to comply with NPDES Permit.

Status: The rehabilitation work associated with Aeration Basin No. 3 and 4 are completed and those basins are put back into operation. The rehabilitation work associated with Aeration Basin No.2 is ongoing.

Additional Project Manager Comments: A change order for extending the contract time by 6 months has been approved by the Board in September 2018.

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			

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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
Budget	Wastewater
Phase Status	Active
Contract No	CS-157
Cost Est Class	

Study and Design and Construction Assistance

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

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

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 212006: PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services Contract	$ 18,320,000	$ 11,850,544	$ 2,719,000	$ 3,131,752	**14.0%**

Project Engineer/ Manager: Philip Kora and Darrel Field (PMA)
Manager: Philip Kora
Total Project Budget: $18,320,000
Timeline: To be substantially complete by April 2019
FY 2019 Last Pay Estimate Processed: September 30, 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: Major mechanical work is nearing completion with electrical and controls activities still in progress, leading to the planned start of operational readiness testing in November 2018. New disinfection and dechlorination systems are to be placed into initial service by the end of the year to allow the west chlorine contact conduits to be taken out of service for the final phase of diffuser and flow meters installation before Substantial Completion by April 1, 2019. Site grading, green infrastructure installation and paving are also currently in progress.

Additional Project Manager Comments: The Contractor's most recent schedule shows one month of float, but recent slippage of Contractor activities is consuming some of the float. Nevertheless, on-time completion is anticipated.

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

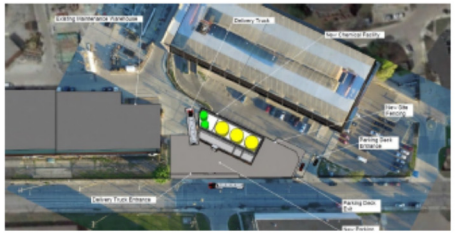
FY 2019-2023 CIP Section VII Pages 231-232 for 212006-Rouge River Outfall Project

CIP Number: 212006
Old CIP No.: 1302
Project Title: WRRF Rouge River Outfall (RRO) Disinfection (Alternative)

Project Status Active
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



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	

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CIP Number: 212006

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

Design and Build

Task Name	Start Date	Duration	End Date
Project Execution	2/19/2016	1137	4/1/2019
Project Closeout	4/2/2019	273	12/31/2019

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.

Project 213007–Modifications to Incinerator Sludge Feed Systems in Complex II at WRRF

Wastewater System Projects	Total Project Budget per CIP (Life of Projects)	Life-to-Date Through June 30, 2018	FY 2019 Requested Budget Per CIP	FY 2019 Pre-Close Activity (Unaudited)	FY 2019 Pre-Close as a Percent of Spend (Unaudited)
Project 213007: WRRF Modification to Incinerator Sludge Systems at Complex-II	$ 22,187,000	$ 2,329,474	$ 6,787,000	$ 1,192,024	**5.3%**

Project Engineer/Manager: Chris Breinling
Manager: Philip Kora
Total Project Budget: $22,187,000
Timeline: To be substantially complete in July 2021
FY 2019 Last Pay Estimate Processed: September 30, 2018
Key Contract/Vendor: GLWA-CON-197 Weiss Construction

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 and removed during the March 2016 fire event that occurred within Complex II at WRRF. The project also provides for significant electrical equipment upgrades that include replacement of a unit substation, motor control centers, and incinerator induction 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 painting activities are ongoing within Dewatering Complex II. Structural steel placement for the replacement conveyors commences this month, with major components of the unit substation and motor control centers being slated for replacement in November and December 2018.

Additional Project Manager Comments: As of September 30, 2018, 17% of contract time (Final Completion) has elapsed and 9% of funds have been spent.

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 Conveyer G Damaged by Fire and Conveyer B in the Complex – II Dewatering Building and Fire Damaged Conveyer 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

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CIP Number: 213007

Phase Tasks and Dates

Phase Category	C
Budget	Wastewater
Phase Status	Under Procurement
Contract No	CON-197
Cost Est Class	

Construction

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

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

Study and Design and Construction Assistance

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

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.

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.

The CWIP Rollforward provides a project status for each item.

Future Year:	Project that was included in the CIP with no expenditures (F)
Active:	Project in which procurement process has been initiated and expenditures incurred (A)
Pending Close :	Project that has no projected expenditures for the current fiscal year and has reached substantial completion (PC)
Closed:	Project that has been closed and capitalized (C)

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. The following projects have been identified for FY 2019 capitalization:

- CIP 260113

$**119.2** million is in CWIP as of September 30, 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.

Status	Project Count	Total Project Estimated Budget	Percent of Total
Future	26	414,041,000	38.35%
Active	28	496,960,000	46.03%
Pending Close	9	168,683,000	14.62%
Closed	4	-	0.00%
Grand Total	**67**	**1,079,684,000**	**100%**

Great Lakes Water Authority
Wastewater System Construction Work-in-Progress (CWIP) FY 2019 Rollforward
Unaudited, Pre-Close Activity For the Fiscal Year Ended September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	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	$ 8,130,505	$ 33,228,849		$ 33,228,849	61%
212006	PC-797 Rouge River Outfall Disinfection and CS-1781 Oversight Consulting Services	47,466,000	26,440,608	15,817,000	7,498,159	33,938,767		33,938,767	72%
212003	Aeration System Improvements	18,320,000	11,850,544	2,719,000	3,131,752	14,982,295		14,982,295	82%
213007	Construction of the Improved Sludge Conveyance and Lighting System at the WWTP	22,187,000	2,329,474	6,787,000	1,192,024	3,521,498		3,521,498	16%
222002	Detroit River Interceptor Evaluation and Rehabilitation	44,425,000	2,647,174	1,084,000	904,090	3,551,264		3,551,264	8%
260603	Conner Creek CSO Basin Rehab		243,224		361,853	605,077		605,077	100%
211004	Pump Station 1 Rack & Grit and MPI Sampling Station 1 Improvements	27,647,000	24,505,435	2,752,000	316,300	24,821,735		24,821,735	90%

GLWA Great Lakes Water Authority

Wastewater System
Construction Work-in-Progress Quarterly Report
As of September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
260502	CSO Outfall Rehab		8,799		274,000	282,799		282,799	100%
211002	Pump Station No. 2 Pumping Improvments	3,783,000	322,436	2,454,000	186,607	509,043		509,043	13%
214001	Relocation of Industrial Waste Division and Analytical Laboratory Operations	12,947,000	572,845	4,001,000	58,476	631,322		631,322	5%
232002	Freud and Connor Creek Pump Station Improvements	32,482,000	5,052,490	1,192,000	57,909	5,110,400	57,734	5,168,134	16%
260602	CSO Fire Alarm System Improvements		-		47,384	47,384		47,384	100%
216004	Rehabilitation of Various Sampling Sites and PS# 2 Ferric Chloride System at WWTP	5,425,000	439,040	551,000	34,807	473,847		473,847	9%
260201	Conveyance System Interceptor Rehab		8,912,692		23,368	8,936,059		8,936,059	100%
260604	Baby Creek CSO Rehab		45,791		21,961	67,752		67,752	100%
213004	Biosolids Dryer Facility at WRRF	2,240,000	-	23,000	14,747	14,747	2,408,470	2,423,216	108%
213002	Rehabilitation of Central Offload Facility	19,413,000	982,301	6,447,000	13,214	995,515		995,515	5%
260601	Oakwood Drain Valve Improvements		-		7,006	7,006		7,006	100%

GLWA Great Lakes Water Authority

Wastewater System
Construction Work-in-Progress Quarterly Report
As of September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	31,768,000	1,550,604	12,094,000	5,223	1,555,826		1,555,826	5%
260202	Conveyance System Interceptor Rehab		-		4,746	4,746		4,746	100%
211008	Rehabilitation of Ferric Chloride Feed systems at the Pump Station -1 and Complex B Sludge Lines	12,013,000	12,386	7,000	4,399	16,785		16,785	0%
380601	Alfred Benesh:General Engineer		632		3,832	4,464		4,464	100%
212004	ProjectChlorination/Dechlorination Process Equipment	5,270,000	116,927	2,101,000	3,012	119,939		119,939	2%
211006	Pump Station No. 1 Improvements	24,120,000	88	500,000	3,004	3,092		3,092	0%
215001	Rehabilitation of Combined Sewer Overflow (CSO) Retention Treatment Basins (RTB), Screening		-		2,561	2,561	1,699,489	1,702,050	100%
260605	CSO Faciliaties CA		-		2,390	2,390		2,390	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
331002	Roofing Systems Replacement at GLWA Wastewater Treatment Plant, CSO Retention Treatment Basins (RTB) and Screening Disinfection Facilities		-	286,000	2,202	2,202		2,202	100%
260107	Pump Station 2 Replacement		-		2,077	2,077		2,077	100%
213006	Improvements to Sludge Feed Pumps at Dewatering Facilities	3,857,000	4,856		1,978	6,834		6,834	0%
213005	Complex I Incinerators Decommissioning and Reusability	4,905,000	42,950		1,975	44,925		44,925	1%
216006	Rehabilitation of the Screened Final Effluent (SFE) Pump Station and Secondary Water	54,456,000	-		1,874	1,874		1,874	0%
260607	Lieb SDF Electrical Improvements		-		1,635	1,635		1,635	100%
233002	Collection System In System Storage Devices(ISDs) Improvements	3,550,000	-	82,000	226	226		226	0%
260606	Puritan Fenkell Roof Replacement		-		71	71		71	100%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
251002	Wastewater System Wide Instrumentation & Controls Software and Hardware Upgrade	14,048,000	-	877,000	69	69		69	0%
211009	Rehabilitation of the Circular Primary Clarifier Scum Removal System	12,239,000	-		29	29		29	0%
213003	Sewage Sludge Incinerator Air Quality Improvements at WRRF	51,094,000	-			-	36,675,871	36,675,871	72%
212001	Returned Activated Sludge (RAS) Pumps, Influent Mixed Liquor System and Motor Control Centers (MCC) Improvements for	34,090,000	-			-	34,089,672	34,089,672	100%
222001	Intercommunity Relief Sewer Modifications in Detroit Oakwood District	38,000,000	-			-		-	0%
380600	General Engineering Services			51,000		-		-	100%
212005	Rouge River Outfall No. 2 (RRO-2) Segement 1-WWTP Modifications	252,000	-			-	251,881	251,881	100%
222003	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation	26,000,000	-			-		-	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
380400	As-needed CIP Implementation Assistance and Related			803,000		-		-	100%
222004	Collection System Valve Remote Operation Structures	2,374,000	-	1,019,000		-		-	0%
260500	CSO Outfall Rehab	44,337,000	-	507,000		-		-	0%
222005	Collection System Access Hatch	2,763,000	-	1,000,000		-		-	0%
213001	Replacement of Belt Filter Presses for Complex I and Upper	36,669,000	-			-	36,669,231	36,669,231	100%
222007	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation from WRRF to Gratiot Ave. and Sylvester St.	21,003,000	-	4,000		-		-	0%
211005	Pump Station No. 2 Improvements	22,087,000	-			-		-	0%
4824	DWSD-Reha/Replacement		56,280			56,280		56,280	100%
380500	Department-wide General Engineering Services on an As-			114,000		-		-	100%
212007	Rehabilitation of the Secondary Clarifiers	34,805,000	-			-		-	0%

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
260400	Sewage Meter Design, Installation, Replacement and	8,600,000	-	1,700,000		-		-	0%
212008	WRRF Rehabilitation of Intermediate Lift	20,516,000	-			-		-	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%
213008	Rehabilitation of the Wet and Dry Ash Handling Systems	20,616,000	-			-		-	0%
216002	Plant-wide Fire Alarm Systems Upgrade/ Integration and Fire Protection	850,000	-			-	849,278	849,278	100%
211003	Rehabilitation of Primary Clarifiers	2,231,000	-			-		-	0%
260113	Fire Remediation		19,233,711			19,233,711	19,233,711	38,467,421	100%
260200	Sewer and Interceptor Evaluation and Rehabilitation Program	77,749,000	-	10,601,000		-		-	0%
213009	Phosphorous Recovery Facility at the WWRF		3,536			3,536		3,536	100%

GLWA Great Lakes Water Authority

Wastewater System
Construction Work-in-Progress Quarterly Report
As of September 30, 2018

Project	Project Name	Total Project Estimate from FY2019 - 2023 CIP	CWIP Balance July 1, 2018 (Unaudited)	FY 2019 Board Approved CIP Budget	FY 2019 Activity through September 30, 2018 (Unaudited)	CWIP Balance, September 30, 2018 (Unaudited)	Life To Date Capitalization through September 30, 2018	Life to Date Activity	Life to Date Activity / Total Project Estimate
211007	Replacement of Bar Racks and Grit Collection System at Pump Station	20,563,000	-	7,000		-		-	0%
260203	Inland: Sewer Inspection		4,642,066			4,642,066		4,642,066	100%
260300	Schedule Replacement Program of Critical	11,028,000	-			-		-	0%
216007	DTE Primary Electric 3rd Feed Supply Line to the WRRF	6,669,000	40,186	2,002,000		40,186	543,500	583,686	9%
380900	General Engineering Services			916,000		-		-	100%
260100	Water Resource Recovery Facility (WRRF), Lift Station & Wastewater Collection	25,753,000	-	1,100,000		-		-	0%
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%
232003	Northeast Pump Station Improvements	26,328,000	-			-		-	0%
260600	CSO Facilities Improvements	45,221,000	191,848	9,277,000	(211)	191,638		191,638	0%
Total		**$ 1,079,684,000**	**$ 146,166,135**	**$ 105,183,000**	**$ 22,315,253**	**$ 168,481,388**	**$ 169,244,672**	**$ 337,726,060**	**31%**

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		