Lake Huron Water Treatment, Filter Instrumentation and Raw Water Flow Metering Improvements

Photo by Erik Kramp

Lowering the Control Gate into Grand Connection Tunnel

Photo by Mini Panicker

CIP

CAPITAL IMPROVEMENT PLAN

2023 - 2027

GLWA

Great Lakes Water Authority

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December 07, 2021

Board Members, GLWA Team Members, Member Partners, and Service Area Communities,

The Great Lakes Water Authority (GLWA) Capital Improvement Planning Delivery Team presents you with the FY 23-27 Capital Improvement Plan (CIP). The CIP is a forward-looking document that outlines GLWA's water and wastewater infrastructure improvement strategy on a short- and long-term basis.
To continue improving the CIP development process, this plan is different from previous years. This year's plan illustrates the initial implementation of an updated project scoring methodology. The CIP Delivery Team plans to continue refining the scoring methodology to allow for more robust implementation in the future. One of the revised methodology goals is to develop an improved transparent decision-making and project prioritization process.

This year's plan includes 182 projects for a total investment of approximately $ 1.73 billion in the region's water and wastewater infrastructure over the next 5-year plan. As illustrated and proposed in the 5-year plan, the projects aim to improve the system's reliability, redundancy, and operational efficiency as well as protect health and safety.

Draft 1 was released on October 19, 2021, for review and comments. Questions and comments were due on November 19, 2021. Draft 2 has been uploaded in December 2021. The submission of FY 23-27 CIP for Board consideration and action is anticipated to take place in February 2022, while the effective date for application of the FY 23-27 CIP is July 1, 2022.

The tremendous effort associated with the preparation of this plan would not have been possible without support from the GLWA's leadership, as well as the collaboration from the CIP delivery team members. The team worked tirelessly to shape this plan as we strive to continuously improve the content. Throughout the FY 23-27 CIP process, the CIP delivery team engaged Member Partners and the vendor community through new project scoring and the CIP Work Group. Thank you for your support of the GLWA CIP development. If you have any questions or need additional information, please do not hesitate to contact me.

Thank you,

Dima S. El-Gamal, PhD, PE, LEED AP
Capital Improvement Planning Director

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ACKNOWLEDGEMENTS

We would like to congratulate Eric Kramp and Mini Panicker for receiving the most votes and subsequent GLWA Cover Photo Contest winners. Their respective photos of the Lake Huron WTP #4 and Lowering and Control Gate into Grand Connection Tunnel are featured on the CIP cover.

DETROIT RIVER INTERCEPTOR (DRI) EVALUATION AND REHABILITATION

CIP #: 222002
Project Status: Project Execution – Construction
Start & Completion Date: 7/3/2017 – 6/30/2029
Project Budget: $77,185*
(Figures are shown in $1,000's.)
Project Team: Cheryl Porter, Todd King, Biren Saparia, Thomas Hall, Mini Panicker, Mike Bywalec (Consultant), & Jay Dee Team (Jay Dee, FKE, ASI, &AEW)

The Grand Connection is one more step in making way and meeting the future demands of the Collection System. Foresight on projects of this complexity and magnitude was challenging but brings great rewards to the system. It was completed on schedule, within budget, and the manifold benefits are recognized by the region.

LAKE HURON WATER TREATMENT PLANT, FILTER INSTRUMENTATION AND RAW WATER FLOW METERING IMPROVEMENTS

CIP #: 111006
Project Status: Active - Pre-Procurement – Construction
Start & Completion Dates: 3/20/2015 – 3/1/2022
Project Budget: $25,936*
(Figures are shown in $1,000's.)
Project Team: Chief - Porter, Director - Gartrell, PM – Kramp, Plant – Lake Huron (Chris Steary, Manager; Andrea Miller, Engineer)

This complicated progressive design/build project addresses outstanding Instrumentation and Controls issues at the plant from equipment well beyond its end of life. The expansion program in the 1980s and 1990s was early in our understanding of how best to use PLCs at our facilities. This project will take the accumulated wisdom of the past three decades and leverage it to provide water of unquestionable quality.

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1 INTRODUCTION

1.1. Executive Summary

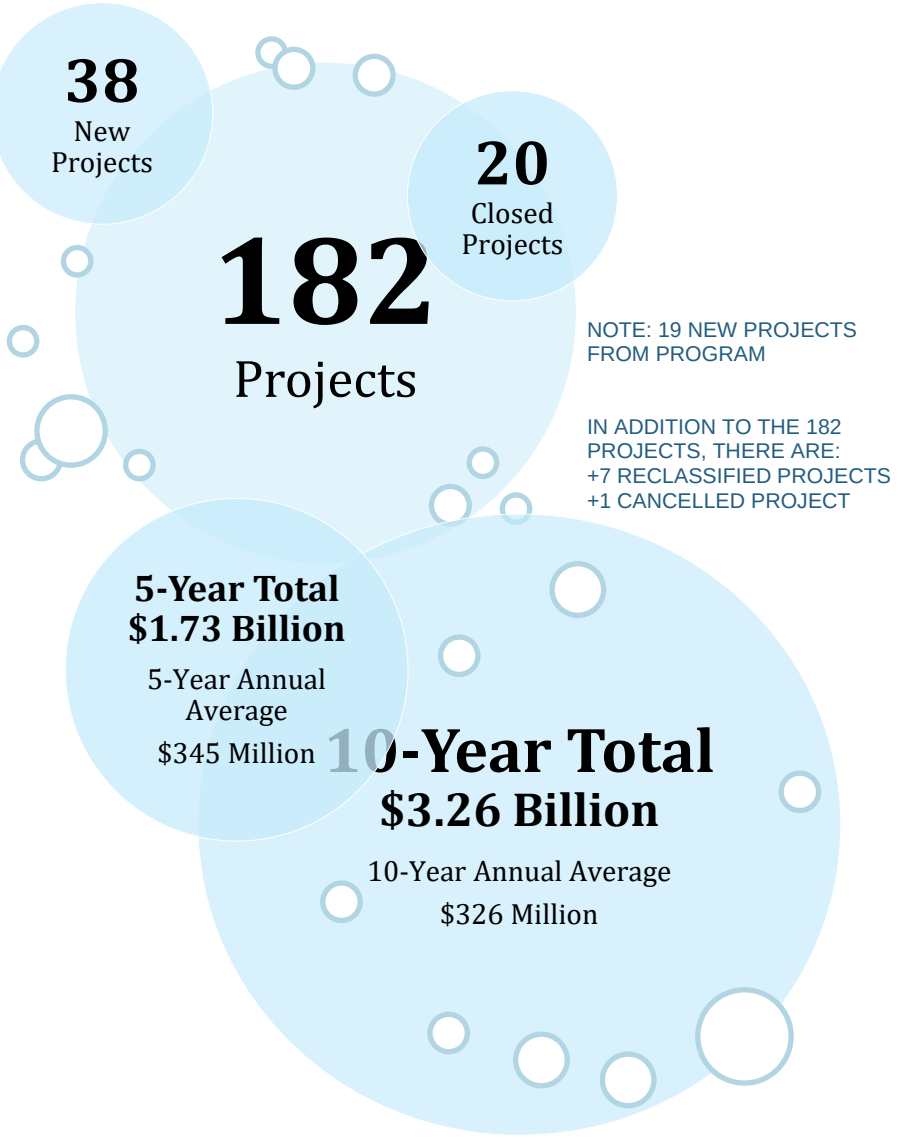
We are pleased to submit the first draft of the Great Lakes Water Authority (GLWA) Capital Improvement Plan (CIP) for fiscal years 2023-2027. This document serves as a guide for the effective and efficient provision of capital assets and infrastructure, outlining timing, and financing for the five-year plan.

GLWA operates and maintains the largest water system in the United States in production and population served, and one of the largest wastewater treatment plants in capacity. To collaboratively ensure a One Water system approach to our regional water and wastewater systems, GLWA has a dedicated Member Outreach Program that collaborates with its Member Partners. Work groups are used to involve members in technical service and financial discussions that support decision-making at GLWA.

Four committees have been established by GLWA's six-member Board of Directors to provide oversight and policy guidance:

- Audit Committee
- Capital Planning Committee
- Legal Committee
- Operations and Resources Committee

GLWA's commitment to improved performance in the water and wastewater systems, environmental compliance, and Member Partner satisfaction aligns with the organization's goals to contribute to the economic success and the health and safety of the region it serves.



CIP AT A GLANCE

GLWA's CIP supports the continuation of major capital asset investments in programs and projects that will upgrade the Authority's aging water and wastewater system infrastructure, as well as the overarching centralized service infrastructure that supports both systems. The CIP is a forward-thinking five-year plan which identifies capital projects and programs and their respective financing options. Annually, this plan is updated to reflect changing system needs, priorities, and funding opportunities.

WATER	
5-YEAR TOTAL	**$965,648**
5-YEAR AVERAGE	$193,130
10-YEAR TOTAL	**$1,881,683**
10-YEAR AVERAGE	$188,168

(Figures are shown in $1,000's.)

WASTEWATER	
5-YEAR TOTAL	$761,764
5-YEAR AVERAGE	**$152,353**
10-YEAR TOTAL	$1,381,808
10-YEAR AVERAGE	**$138,181**

(Figures are shown in $1,000's.)

PLAN SPENDING SUMMARY

5-Year Total
$1.73 Billion

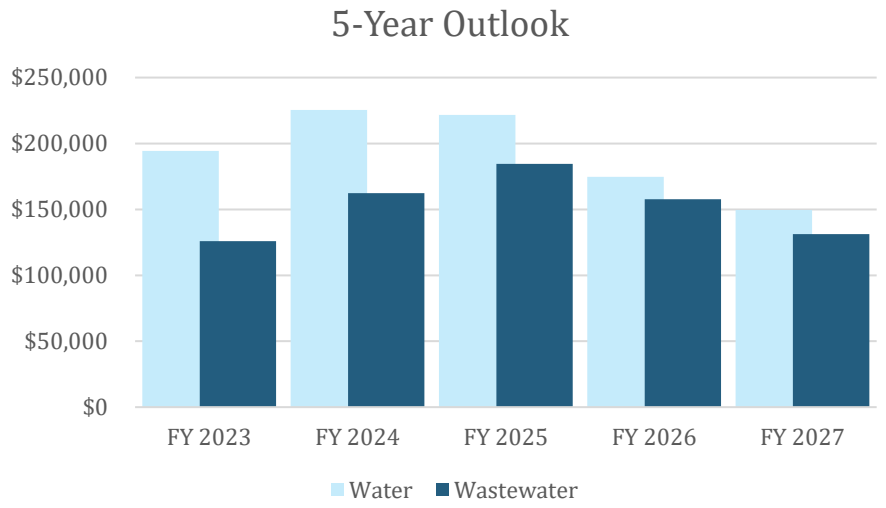
10-Year Total
$3.26 Billion

5-Year Annual Average
$345 Million

10-Year Annual Average
$326 Million

5-YEAR TOTAL OF WATER & WASTEWATER CAPITAL PROJECTS MATCHED THE 2022-2026 CIP

Ongoing efforts to stabilize rates and plan realistically for what can be achieved led to the current capital improvement spending plan.



During the CIP development process, considerations were taken for balancing capital expenditure demands without compromising our mission to implement best practices in water and wastewater treatment and transmission/conveyance.

WATER

CIP Document	FY2022	FY2023	FY2024	FY2025	FY 2026	FY 2027	5-Year Total
Approved Water CIP FY 2022-2026	$179,210	200,713	$199,165	$170,936	$182,430	$232,796	$932,454
Draft Water CIP FY 2023-2027		$194,376	$225,436	$221,616	$174,681	$149,539	$965,648
Difference ($)		($6)	$26	$51	($8)	($83)	$33
Difference (%)		(3%)	13%	20%	(4%)	(36%)	4%

(Figures are shown in $1,000's.)

WASTEWATER

CIP Document	FY2022	FY2023	FY2024	FY2025	FY 2026	FY 2027	5-Year Total
Approved Wastewater CIP FY 2022-2026	$106,050	$123,190	$160,940	$173,024	$175,200	$210,615	$738,403
Draft Wastewater CIP FY 2023-2027		$125,932	$162,313	$184,523	$157,689	$131,307	$761,764
Difference ($)		$3	$1	$11	($18)	($79)	$23
Difference (%)		2%	1%	7%	(10%)	(38%)	3%

(Figures are shown in $1,000's.)

1.2. Primary Goals of the CIP

The primary goals of the GLWA's CIP are the following:

- Provide a condensed volume of projects in a central location.
- Demonstrate alignment with the GLWA financial plan.
- Share the GLWA integrated master schedule.
- Provide transparency to the organizational goals.
- Meet regulatory and operational needs.
- Provide an opportunity to Member Partners & Communities to contribute to the plan.
- Address projects that promote improved redundancy, system resiliency, and health and safety.

This CIP should be considered a forward-looking planning document; it is a dynamic and evolving plan that requires continual review and improvement. Short-term project cost estimates are more defined than long-term project cost estimates because short-term anticipated projects are typically better characterized by studies or scoped by design. The project descriptions and summaries incorporated in this report represent brief synopses of the entire project scope; these descriptions are generally more defined for ongoing active projects than for newly planned projects, where specific project activities may have yet to be determined. Based upon the execution of programs and projects identified in the CIP, it is anticipated that existing levels of service currently provided will be met or exceeded. Copies of this CIP and past CIPs are available on GLWA's website at https://www.glwater.org/cip/.

1.3. Team Members & Partners

Our members include the GLWA CIP Delivery Team (as depicted in Figure 1: Team Members & Partners), board members, water and wastewater partners, associated stakeholders, elected officials, consultants, and regulatory agencies. GLWA has a dedicated Member Outreach Program that collaborates with its members on water and wastewater activities.

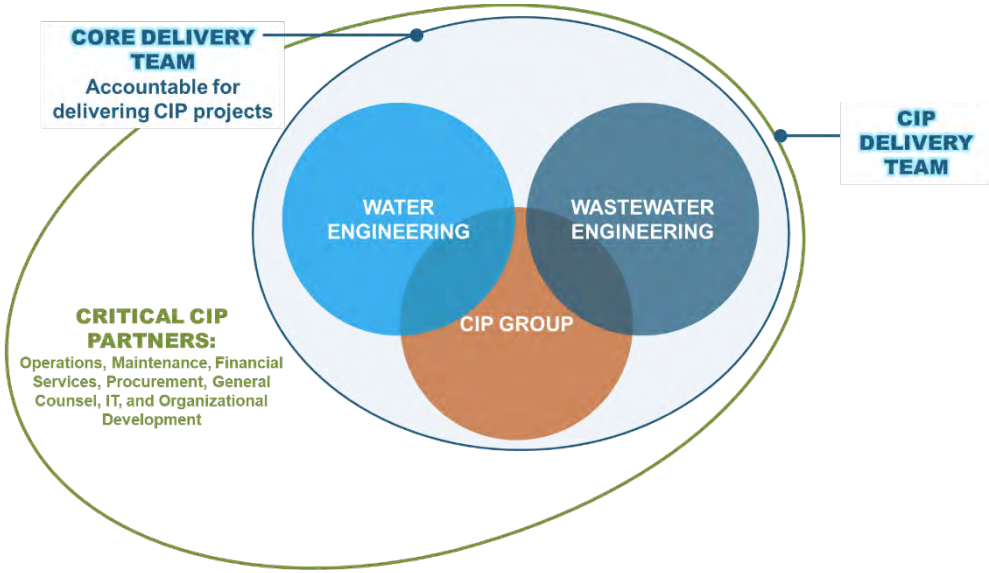


Figure 1: Team Members & Partners

The Capital Improvement Planning Group at GLWA works to develop and support the execution of the plan. The team members are listed below, along with their contact information:

- Dima El-Gamal, PhD, PE, LEED AP., dima.elgamal@glwater.org;
- Ian Thompson, PE, ian.thompson@glwater.org;
- Zi Lang, zi.liang@glwater.org;
- Dana Thurman, dana.thurman@glwater.org.

1.4. CIP Strategy

GLWA's CIP lays out the organization's intentions for capital asset investment for the next five years to enhance and maintain system-wide assets. Updated annually, the Plan reflects the organization's changing system needs, priorities, and financing opportunities over time.

Projects are included in the CIP as recommended by the Water and Wastewater Master Plans, condition and needs assessments, regulatory requirements, and operational needs. The Comprehensive Water Master Plan and the Comprehensive Regional Wastewater Master Plan are long-term strategic planning tools that provide regional collaboration and planning to balance capital expenditures while implementing best practices in the treatment and transmission/conveyance of water and wastewater. Projects are vetted and prioritized to optimize capital investments. Water and Wastewater CIP Projects are developed utilizing Business Case Evaluations (BCE's), which are included in Appendices A, B, and C of this plan for Water, Wastewater, and Field Services, respectively.

The goals of the Authority's capital financing strategy are to:

- Recover the capital investment costs over the useful lives of the capital assets.
- Balance the needs of the water and sewage system with revenue requirements.
- Protect and enhance the Authority's financial position.
- Maintain affordable charges by investing wisely in system renewal and revitalization.

Recognizing the difference in scope between the CIP and the tactical financial plan, GLWA implemented a "Capital Spend Rate Assumption Policy" adopted in 2018 by the Board of Directors. This policy provides an analytical approach to bridge the total dollar amount of projects in the CIP with what can realistically be spent due to limitations beyond GLWA's control. This rate is assessed annually and presented to the Board of Directors.

1.5. CIP Optimization

As stated earlier, the CIP should be considered a forward-looking planning document – it is a dynamic and evolving plan that requires continual review, optimization, and improvement. To continuously improve the CIP process and reporting, the CIP group has made the following improvements:

CIP REPORT

The most visible change to the CIP process is the document itself. Continuing improvements from FY 2022 – 2026 CIP report, the outline of the content has been reordered and streamlined to provide a clearer sequencing.
In addition, a new section, Projects by Type, has been added to Chapter 2. The tables reflect CIP projects further broken down between Water – Treatment, Transmission, and Pump Station and Wastewater – Treatment, Conveyance, CSO, and Pump Station.

VALIDATION

Last year, the CIP validation process was introduced into the CIP process. Having completed a review of all active and future planned projects for FY 2022-2026, this fiscal year, key new projects were selected based on cost and risk criteria to undergo a review of the project scopes, procurement packaging, and engineer's opinion of the project costs.
The findings from the validation process will be used to update the schedule, project sequencing, and funding requirements as needed.
It should be noted that the validation is ongoing. A summary finding will be included in a subsequent draft of the CIP.

SCORING

This year a revised methodology has been applied to improve and optimize the scoring and prioritization of projects by refining the alignment of the resulting project scores with GLWA's overall priorities and values. Below are some of the main revisions that were implemented:

- Health and Safety weighting was increased from 17% to 18%.
- Efficiency & Innovation weighting was decreased from 9% to 8%.
- A revised approach to the scoring methodology has been implemented to improve the scoring and prioritization of projects by considering the single highest purpose and benefit of each project.

The CIP processes will continue to improve and evolve to provide the various stakeholders with improved projections and reporting.

MILESTONES

The following schedule provides details related to the FY 23-27 CIP upcoming milestones:

- December 14, 2021: Capital Planning Committee (CPC)- Review of Preliminary Draft 2
- January 2022: Present FY 23-27 CIP to GLWA Board:
- January 2022: Capital Planning Committee (CPC)- Review of Final FY 23-27 CIP and recommendation to the GLWA Board
- February 2022: Board consideration and action on the FY 23-37 CIP.
- July 1, 2022: Effective date of FY 2023-2027

2 CIP SUMMARY

2.1. CIP 5-Year Summary Tables

The Great Lakes Water Authority 2023-2027 CIP overall summary tables can be seen below. Please note that the Centralized Services CIP Categories table's projected project budgets and project categories are also included in the Water CIP Categories and Wastewater CIP Categories tables.

WATER

Financial figures are in thousands of dollars ($1,000's).

CATEGORY	CATEGORY NUMBER	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL
Treatment Plants and Facilities											
Lake Huron	111x	$22,263	$13,783	$14,840	$11,917	$13,173	$15,347	$18,657	$130,632	$73,934	$240,612
Northeast	112x	$1,416	$143	$3,760	$17,760	$6,760	$2,760	$2,760	$51,749	$33,800	$87,108
Southwest	113x	$6,003	$3,422	$4,398	$0	$0	$0	$0	$67,812	$4,398	$81,634
Springwells	114x	$149,374	$26,829	$13,523	$30,650	$35,252	$26,580	$26,000	$352,425	$132,005	$660,633
Water Works Park	115x	$13,280	$12,366	$17,790	$16,622	$13,890	$2,100	$0	$124,334	$50,402	$200,382
General Purpose	116x	$30,633	$13,663	$15,893	$15,471	$13,663	$13,663	$0	$0	$58,690	$102,986
Treatment Plants and Facilities Total		**$222,970**	**$70,205**	**$70,204**	**$92,420**	**$82,738**	**$60,450**	**$47,417**	**$726,952**	**$353,229**	**$1,373,356**
Field Services											
Transmissions System	122x	$84,024	$80,869	$84,269	$118,686	$126,213	$100,990	$83,530	$161,972	$513,688	$840,553
Field Services Total		**$84,024**	**$80,869**	**$84,269**	**$118,686**	**$126,213**	**$100,990**	**$83,530**	**$161,972**	**$513,688**	**$840,553**
Systems Control Center											
Pump Station/Reservoir	132x	$17,836	$26,641	$17,505	$1,642	$3,580	$5,000	$10,000	$287,646	$37,726	$369,850
Systems Control Center Total		**$17,836**	**$26,641**	**$17,505**	**$1,642**	**$3,580**	**$5,000**	**$10,000**	**$287,646**	**$37,726**	**$369,850**
Metering											
General Purpose	151x	$8,618	$2,496	$545	$0	$0	$0	$0	$0	$545	$11,658
Metering Total		**$8,618**	**$2,496**	**$545**	**$0**	**$0**	**$0**	**$0**	**$0**	**$545**	**$11,658**
Programs											
Programs	17xx	$13,415	$16,158	$21,286	$11,390	$8,326	$8,241	$8,592	$219,450	$57,835	$306,858
Programs Total		$13,415	$16,158	$21,286	$11,390	$8,326	$8,241	$8,592	$219,450	$57,835	$306,858

CATEGORY	CATEGORY NUMBER	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL
Water Total		**$346,862**	**$196,369**	**$193,809**	**$224,138**	**$220,857**	**$174,681**	**$149,539**	**$1,396,019**	**$963,024**	**$2,902,274**
Centralized Services											
Security	341x	$4,179	$60	$0	$0	$0	$0	$0	$0	$0	$4,239
Energy Management	351x	$7	$0	$0	$0	$0	$0	$0	$0	$0	$7
General Purpose	371x	$0	$0	$0	$0	$0	$0	$0	$25,000	$0	$25,000
Programs	38xx	$0	$602	$567	$1,298	$759	$0	$0	$0	$2,624	$3,226
Centralized Services Total		**$4,185**	**$662**	**$567**	**$1,298**	**$759**	**$0**	**$0**	**$25,000**	**$2,624**	**$32,471**
GRAND TOTAL		**$351,047**	**$197,030**	**$194,376**	**$225,436**	**$221,616**	**$174,681**	**$149,539**	**$1,421,019**	**$965,648**	**$2,934,745**

WASTEWATER

Financial figures are in thousands of dollars ($1,000's).

CATEGORY	CATEGORY NUMBER	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL
WRRF											
Primary Treatment	211	$92,733	$13,282	$14,068	$26,074	$30,574	$31,494	$29,161	$222,648	$131,370	$460,033
Secondary Treatment and Disinfection	212	$50,017	$0	$0	$2,290	$14,073	$13,678	$15,125	$151,431	$45,166	$246,614
Residuals Management	213	$20,465	$4,090	$750	$2,417	$1,667	$4,867	$4,500	$178,500	$14,200	$217,255
Industrial Waste Control	214	$14,232	$50	$0	$0	$0	$0	$0	$0	$0	$14,282
General Purpose	216	$8,464	$3,916	$12,714	$25,088	$22,021	$16,745	$2,488	$1,050	$79,057	$92,486
WRRF Total		**$185,912**	**$21,338**	**$27,532**	**$55,868**	**$68,335**	**$66,784**	**$51,273**	**$553,629**	**$269,792**	**$1,030,671**
Field Services											
General Purpose	221	$1,229	$3,371	$4,849	$5,527	$5,516	$667	$0	$0	$16,559	$21,160
Interceptor	222	$38,957	$17,503	$26,311	$21,361	$25,733	$21,244	$16,124	$19,573	$110,774	$186,807
Field Services Total		**$40,187**	**$20,874**	**$31,160**	**$26,889**	**$31,249**	**$21,911**	**$16,124**	**$19,573**	**$127,333**	**$207,967**
Systems Control Center											
General Purpose	231	$30,338	$17,469	$32,521	$38,895	$31,097	$10,943	$6,249	$44,488	$119,704	$212,000
Pump Stations	232	$40,931	$13,384	$10,792	$19,818	$32,653	$32,692	$30,177	$122,364	$126,133	$302,812
IN System Devices (Dams, ISD's)	233	$0	$0	$0	$233	$1,000	$1,229	$1,229	$42,626	$3,691	$46,317
Systems Control Center Total		**$71,270**	**$30,853**	**$43,312**	**$58,946**	**$64,750**	**$44,864**	**$37,655**	**$209,479**	**$249,528**	**$561,129**
Programs											
Programs	26xx	$22,762	$29,439	$15,863	$12,073	$13,026	$11,544	$9,894	$1,051,965	$62,401	$1,166,567
Programs Total		**$22,762**	**$29,439**	**$15,863**	**$12,073**	**$13,026**	**$11,544**	**$9,894**	**$1,051,965**	**$62,401**	**$1,166,567**
CSO Facilities											
Multiple CSO Facilities	270	$2,134	$3,202	$5,205	$3,260	$2,962	$8,185	$10,566	$41,984	$30,178	$77,499
Hubbell Southfield	273	$0	$0	$533	$1,600	$1,600	$1,800	$3,394	$31,419	$8,927	$40,346
Leib	274	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Conner Creek	276	$284	$2,258	$0	$0	$0	$0	$0	$0	$0	$2,542
Baby Creek	277	$2,140	$1,259	$2,328	$3,678	$2,600	$2,600	$2,400	$1,288	$13,605	$18,293
Oakwood	278	$805	$0	$0	$0	$0	$0	$0	$0	$0	$805

CATEGORY	CATEGORY NUMBER	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL
CSO Facilities Total		**$5,363**	**$6,719**	**$8,065**	**$8,537**	**$7,162**	**$12,585**	**$16,360**	**$74,692**	**$52,710**	**$139,484**
Wastewater Total		**$325,494**	**$109,223**	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$1,909,338**	**$761,764**	**$3,105,818**
Centralized Services											
Security	341	**$1,901**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,901**
Centralized Services Total		**$1,901**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$1,901**
GRAND TOTAL		**$327,394**	**$109,223**	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$1,909,338**	**$761,764**	**$3,107,719**

CENTRALIZED SERVICES

Please note that these project categories and projected budgets also appear in Water and Wastewater tables above.

Financial figures are in thousands of dollars ($1,000's).

CATEGORY	CATEGORY NUMBER	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL
Security											
Water	341x	$4,179	$60	$0	$0	$0	$0	$0	$0	$0	$4,239
Wastewater	341x	$1,901	$0	$0	$0	$0	$0	$0	$0	$0	$1,901
Security Total		**$6,080**	**$60**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$6,140**
Energy Management											
Water	351x	$7	$0	$0	$0	$0	$0	$0	$0	$0	$7
Energy Management Total		**$7**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$7**
General Purpose											
Water	371x	$0	$0	$0	$0	$0	$0	$0	$25,000	$0	$25,000
General Purpose Total		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$25,000**	**$0**	**$25,000**
Programs											
Water	38xx	$0	$602	$567	$1,298	$759	$0	$0	$0	$2,624	$3,226
Programs Total		**$0**	**$602**	**$567**	**$1,298**	**$759**	**$0**	**$0**	**$0**	**$2,624**	**$3,226**
GRAND TOTAL		**$6,086**	**$662**	**$567**	**$1,298**	**$759**	**$0**	**$0**	**$25,000**	**$2,624**	**$34,372**

2.2. Project Status

A status is assigned to each project or program within the CIP. The project status designation provides a high-level understanding of the progress of the project or program. Projects are categorized by activity levels within the Work Breakdown Structure, and multiple activity levels are based on the contract type. As such, each activity level of a project will have its own status and contract number. Descriptions of each status are provided below. Projects that have been newly introduced into the CIP this year have been designated as "New to the CIP" based upon a checkmark within the Business Case Evaluation.

PROJECT STATUS	DESCRIPTION
Future Planned – Within 5 Year Plan	The project is planned to begin within the 5 Year CIP Plan.
Future Planned – Ten-Year CIP	The project is planned to begin within the 10 Year CIP Outlook.
Active – Pre-Procurement – Design	A scope of work or RFP is being developed.
Active – Procurement – Design	Out for Solicitation of Bids.
Active – Procurement – Negotiation Phase – Design	The intended Consultant has been selected and is in negotiations.
Active – Procurement – Board Approved – Design	A project over $1,000,000 requires Board Approval to execute the contract.
Project Execution – Design	The project's contract has been executed.
Active – Pre-Procurement – Construction	A scope of work or RFB is being developed.
Active – Procurement – Construction	Solicitation of Bids is underway.
Active – Procurement – Negotiation Phase – Construction	The intended low bid Contractor has been selected and is in negotiations.
Active – Procurement – Board Approved – Construction	A project over $1,000,000 requires Board Approval to execute the contract.
Project Execution – Construction	The project's contract has been executed.
Pending Close-out	Project that has an assigned BS&A Project Number, a Notice to Start Work has been issued, has projected expenditures for the current fiscal year equal to $100,000 or less - with no future projected expenditures and has reached substantial completion.
Closed	Project that has been officially completed.
Reclassified	Project that has been merged into the scope of work of an existing project.
Cancelled	Project that has been completely cancelled and/or removed from the CIP.

Multiple CIP types are necessary to distinguish the differences in intent of how a CIP item is to be used. This CIP contains two primary CIP types: Projects and Programs. A typical project that has a specific scope and timeframe is considered a Project. Whereas Programs represent projects that address repetitive scope to address the replacement and/or rehabilitation of specific capital assets on an ongoing or reoccurring basis. Programs are typically constant and extend over many years.

CIP TYPE	DESCRIPTION
Project	A "Project" consists of the replacement and/or rehabilitation of specific capital assets within a finite timeframe and scope.
Program	A "Program" consists of the replacement and/or rehabilitation of specific capital assets on an ongoing or reoccurring basis. The program scope and/or projected expenses may vary from year-to-year depending on the needs identified within the program and as newly established programs develop consistent schedules, requirements, and history over time. Although not typically identified in the CIP future years projected expenses, these programs will typically be funded in perpetuity.

Many projects have changed status since the last CIP update. These projects are shown in the following tables:

NEW PROJECTS ADDED TO THE CIP

CIP	TITLE	2023 STATUS
113008	SWP Reservoir Replacement	Future Planned - Ten-Year CIP
115008	Jefferson Main Replacement Project	Reclassified
115009	Water Works Park Sedimentation Basins Structural Upgrades	Future Planned - Ten-Year CIP
116007	System Electrical Power Improvements	Active - Pre-Procurement - Design
122019	Jefferson Main Replacement Project	Future Planned - Within 5 Year Plan
170304*	WWP Scada Infrastructure Upgrade	Future Planned - Within 5 Year Plan
170305*	WWP SCADA Network Upgrade	Future Planned - Ten-Year CIP
170306*	SPW SCADA PLC Network Upgrade	Future Planned - Within 5 Year Plan
170307*	NE SCADA Network Upgrade	Future Planned - Ten-Year CIP
170601*	Linear System Integrity Program	Project Execution - Design
170802	Reservoir Inspection, Design, and Construction Management Services Phase II	Active - Procurement - Design
170803*	Reservoir Inspection, Design, and Construction Management Services Phase III	Future Planned - Ten-Year CIP
171502*	Lake Huron and Southwest Roof Replacement	Future Planned - Ten-Year CIP
213009	WRRF Biosolids Processing Improvements	Future Planned - Within 5 Year Plan
260207*	Rehabilitation of Woodward Sewer Systems	Project Execution - Construction
260209	Sewer Rehabilitation and Repair	Active - Procurement - Construction
260621*	Conner Creek Dike Improvements	Project Execution - Construction
260622*	CSO Emergency Generator Improvements	Active - Procurement - Construction
260623	CSO Baby Creek Screen Rehabilitation	
260701*	Conveyance System Infrastructure Improvements	Active - Procurement - Construction
260702*	Pump Station Assets Updates	Active - Pre-Procurement - Construction
260900	WRRF Facility Optimization Program	Future Planned - Within 5 Year Plan
260902*	WRRF 4th Floor Renovation	Active - Procurement - Design
260903*	WRRF Front Entrance Rehabilitation	Project Execution - Design
261000	WRRF Rehabilitation of the Secondary Clarifiers	Future Planned – Within Ten-Year Plan
270005*	CSO Facility Safety Improvements and Building Rehabilitation	Future Planned - Within 5 Year Plan
270006	Control System Upgrades at Baby Creek and Belle Isle CSO Facilities	Future Planned - Within 5 Year Plan
270007	Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities	Future Planned - Within 5 Year Plan
270008	Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities	Future Planned - Within 5 Year Plan
270009	Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities	Future Planned - Within 5 Year Plan
270010	HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities	Future Planned - Within 5 Year Plan
270011	HVAC Improvements at Conner Creek and Belle Isle CSO Facilities	Future Planned - Ten-Year CIP
270012	Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities	Future Planned - Within 5 Year Plan
270013	Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities	Future Planned - Ten-Year CIP
270014	Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities	Future Planned - Ten-Year CIP
273001*	Hubbell Southfield CSO Facility Improvements	Future Planned - Within 5 Year Plan
273002*	CSO Hubbell Southfield VR-8 Gate Improvements	Future Planned - Within 5 Year Plan
277002*	Baby Creek CSO Facility Influent Flushing System	Future Planned - Ten-Year CIP
383300	Masonry Replacement and Rehabilitation Program	Future Planned - Ten-Year CIP

*Projects created out of a program

PROJECTS PROGRESSED TO ACTIVE STATUS

CIP	TITLE	2022 STATUS	2023 STATUS
114018	Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements	Future Planned - Within 5 Year Plan	Active - Pre-Procurement - Design
116005	Belle Isle Seawall Rehabilitation	Future Planned - Within 5 Year Plan	Active - Procurement - Design
116007	System Electrical Power Improvements		Active - Pre-Procurement - Design
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	Future Planned - Within 5 Year Plan	Project Execution - Construction
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	Future Planned - Within 5 Year Plan	Active - Procurement - Design
132016	North Service Center Pumping Station Improvements	Future Planned - Within 5 Year Plan	Active - Procurement - Design
170502	Transmission System Valve Rehabilitation and Replacement Program		Project Execution - Construction
170600	Water Transmission Main Asset Assessment Program	Future Planned - Within 5 Year Plan	Project Execution - Design
170601	Linear System Integrity Program		Project Execution - Design
170801	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant		Project Execution - Design
170802	Reservoir Inspection, Design, and Construction Management Services Phase II		Active - Procurement - Design
260205	NWI Rehabilitation	Future Planned - Within 5 Year Plan	Active - Procurement - Construction
260207	Rehabilitation of Woodward Sewer Systems		Project Execution - Construction
260209	Sewer Rehabilitation and Repair		Active - Procurement - Construction
260600	CSO FACILITIES IMPROVEMENT PROGRAM	Future Planned - Ten-Year CIP	Project Execution - Design
260621	Conner Creek Dike Improvements		Project Execution - Construction
260622	CSO Emergency Generator Improvements		Active - Procurement - Construction
260623	CSO Baby Creek Screen Rehabilitation		Active - Procurement - Construction
260700	Sewer System Infrastructure Improvements and Pumping Stations		Project Execution - Design
260701	Conveyance System Infrastructure Improvements		Active - Procurement - Construction
260702	Pump Station Assets Updates		Active - Pre-Procurement - Construction
260800	WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM		Project Execution - Design
260901	Rehabilitation of HAZMAT Facility at WRRF		Active - Procurement - Design
260902	WRRF 4th Floor Renovation		Active - Procurement - Design

CIP	TITLE	2022 STATUS	2023 STATUS
260903	WRRF Front Entrance Rehabilitation		Project Execution - Design
270004	Oakwood and Leib CSO Facilities Improvement Project		Active - Procurement - Design
277001	Baby Creek Outfall Improvements Project	Future Planned - Within 5 Year Plan	Active - Procurement - Design

PROJECTS EXPECTED TO PROGRESS TO PENDING CLOSEOUT STATUS IN FY 23-27

CIP	TITLE	2022 STATUS	2023 STATUS
111007	Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	Project Execution - Construction	Pending Closeout
114008	Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements	Project Execution - Construction	Pending Closeout
216007	Springwells Water Treatment Plant, Reservoir Fill Line Improvements	Project Execution - Construction	Pending Closeout
341001	Ford Road Pumping Station, Pressure and Control Improvements	Project Execution - Construction	Pending Closeout
341002	Franklin Pumping Station Valve Replacement	Project Execution - Construction	Pending Closeout

PROJECTS ANTICIPATING CLOSED STATUS IN FY 23-27

CIP	TITLE	2022 STATUS	2023 STATUS
111002	Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements	Pending Closeout	Closed
112005	Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits	Project Execution - Construction	Closed
113002	Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement	Pending Closeout	Closed
114001	Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements	Pending Closeout	Closed
114013	Springwells Water Treatment Plant, Reservoir Fill Line Improvements	Project Execution - Construction	Closed
115004	Water Works Park Water Treatment Plant Chlorine System Upgrade	Pending Closeout	Closed
132003	West Service Center Pumping Station, Isolation Gate Valves for Line Pumps	Pending Closeout	Closed
132006	Ford Road Pumping Station, Pressure and Control Improvements	Project Execution - Construction	Closed
132026	Franklin Pumping Station Valve Replacement	Pending Closeout	Closed
170200	As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services	Project Execution - Design	Closed
211004	WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements	Project Execution - Construction	Closed
212004	WRRF Chlorination and Dechlorination Process Equipment Improvements	Project Execution - Construction	Closed
212006	WRRF Rouge River Outfall (RRO) Disinfection (Alternative)	Pending Closeout	Closed
260505	Phase 4 Outfalls	Project Execution - Construction	Closed
260509	B-40 Outfall Rehabilitation	Project Execution - Design	Closed
260601	Oakwood CSO Control Facility Drain Valve Improvements	Pending Closeout	Closed
260609	Seven Mile RTB - Parking Lot Replacement & Misc. Site Work	Pending Closeout	Closed
260610	Baby Creek SDF - HV Units Replacement	Pending Closeout	Closed
260611	Leib SDF- HVAC System Improvements	Project Execution - Construction	Closed
260616	Baby Creek Towards Treatment Sewer Improvements	Pending Closeout	Closed

PROJECTS ANTICIPATING CANCELLED STATUS IN FY 23 - 27

This includes projects cancelled and projects removed from the CIP to be funded through other sources.

CIP	TITLE	2022 STATUS	2023 STATUS
351001	LED Lighting and Lighting Control Improvements	Active – Pre-Procurement-Construction	Cancelled

RECLASSIFIED PROJECTS

The following projects have been reclassified due to a merger or further breakdown of scopes.

CIP	TITLE	2022 STATUS	2023 New Project #
115008	Jefferson Main Replacement Project		122019
212007	WRRF Rehabilitation of the Secondary Clarifiers	Future Planned - Within 5 Year Plan	261001
216010	WRRF Facility Optimization	Active - Pre-Procurement - Design	New Program 260901, 260902, 260903
260208	Rehabilitation of Conner Creek Sewer Systems		260204
274001	Leib Improvements for Meldrum Diversion	Future Planned - Within 5 Year Plan	274004
278001	Oakwood Improvements for NWI Diversion	Future Planned - Within 5 Year Plan	274004
331003	Masonry Replacement and Rehabilitation	Future Planned - Ten-Year CIP	383300 New Program

2.3. Linear Assets

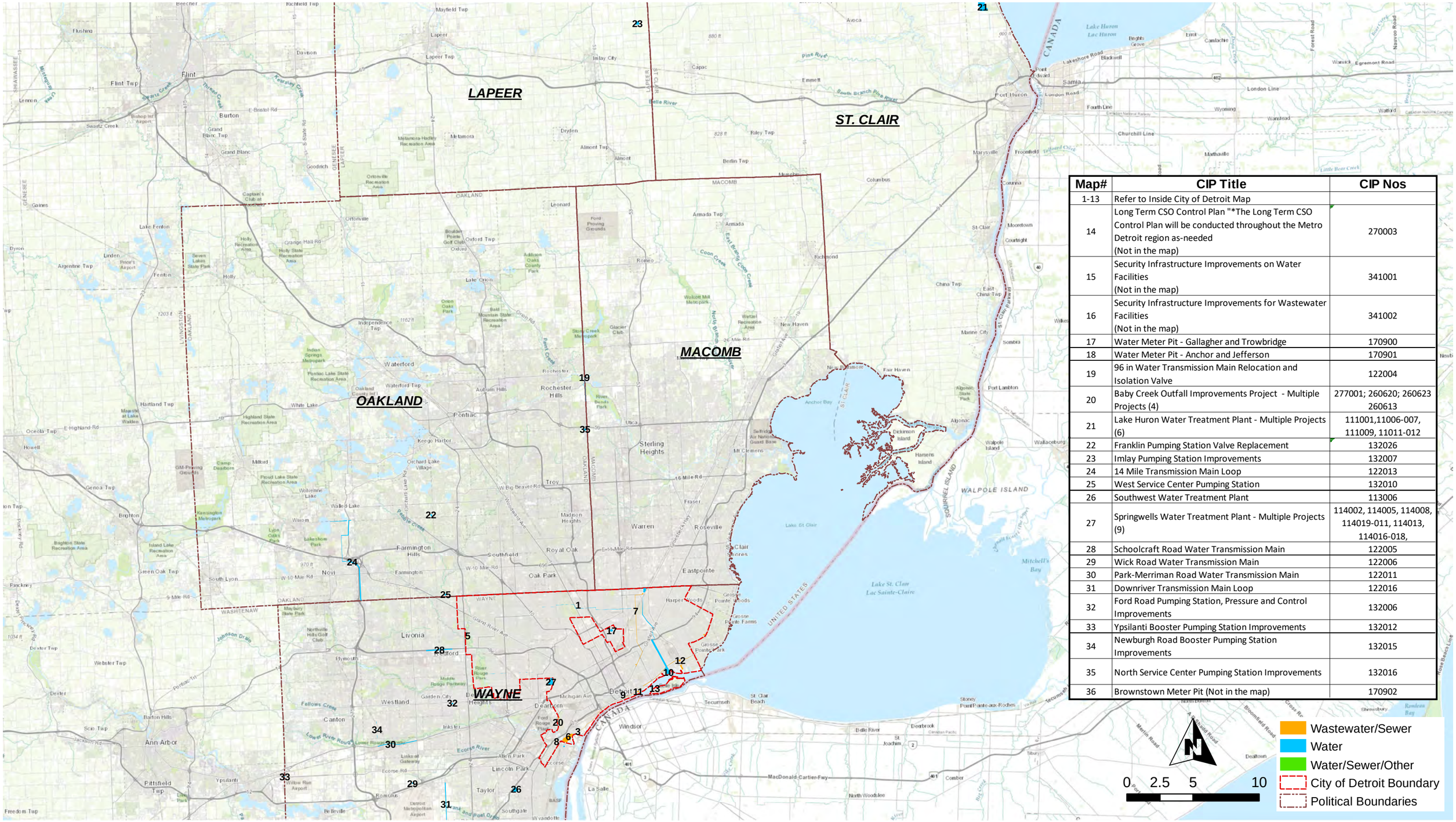
Many projects included in the CIP take place at GLWA facilities and on what GLWA considers to be vertical assets. However, GLWA manages many miles of water transmission mains and sewer interceptors. Projects on these linear assets are listed below. A spatial view and understanding of these project locations can be found in the CIP Viewer located within the WAMR and GDRSS Member Outreach Portals after the Board Approval and adoption of the annual CIP Plan.

CIP	TITLE
116002	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements
122005	Schoolcraft Road Water Transmission Main
122006	Wick Road Water Transmission Main
122007	Merriman Road Water Transmission Main Loop
122019	Jefferson Main Replacement Project
170109	GLWA-CS-187: FK Eng: Raw Water Intake
170400	Water Transmission Improvement Program
170500	Transmission System Valve Rehabilitation and Replacement Program
170502	Transmission System Valve Rehabilitation and Replacement Program
170503	Transmission System Valve Replacement
170504	Transmission Mains Valves and Urgent
170601	Linear System Integrity Program
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation
233003	Rouge River In-system Storage Devices
260200	Sewer and Interceptor Rehabilitation Program
260201	CON-149, Emergency Sewer Repair
260204	Conveyance System Engineering Services-1802575
260205	NWI Rehabilitation
260206	Conveyance System Repairs (Sewers)
260207	Rehabilitation of Woodward Sewer Systems
260209	Sewer Rehabilitation and Repair
260500	CSO Outfall Rehabilitation
260504	Phase 2 Outfalls- 19000796
260505	Phase 4 Outfalls
260508	B-39 Outfall Rehabilitation
260509	B-40 Outfall Rehabilitation
260510	Conveyance System Repairs (Outfalls)
260700	Sewer System Infrastructure Improvements and Pumping Stations
260701	Conveyance System Infrastructure Improvements
260702	Pump Station Assets Updates

2.4. Projects by Jurisdiction

The following projects listed are under the jurisdiction of the physical location of the project. Projects that are planned for multiple facilities within multiple jurisdictions are identified as “Multiple Counties”. A spatial view and understanding of these project locations, will be able to be found in the CIP Viewer located within the WAMR and GDRSS Member Outreach Portals after the Board Approval and adoption of the yearly CIP Plan.

JURISDICTION	CIP PROJECTS				
City of Detroit					
112003	122017	211008	214001	260508	260903
112005	122018	211009	216004	260509	261000
112006	122019	211010	216006	260510	261001
115001	170304	211011	216007	260601	270001
115004	170305	212004	216008	260603	270002
115005	170307	212006	216011	260611	270004
115006	170803	212008	222002	260615	270008
115007	211001	212009	232001	260617	270010
115009	211002	212010	232002	260618	270011
116002	211004	213006	232004	260621	270013
116005	211005	213007	260205	260900	270014
116006	211006	213008	260206	260901	
122003	211007	213009	260207	260902	
Lapeer County					
132007	132021				
Macomb County					
-					
Oakland County					
122013	132010	132016	132026		
132003	132014	132020	273001		
Saint Clair County					
111001	111006	111008	111010	111012	
111002	111007	111009	111011		
Wayne County - Outside Detroit					
113002	114005	114017	132006	170306	270005
113003	114007	114018	132012	170902	270006
113006	114008	122005	132015	233003	273002
113007	114010	122006	132018	260610	277002
113008	114011	122007	132019	260613	
114001	114013	122011	132022	260620	
114002	114016	122016	170302	260623	
Multiple Counties					
116007	170502	170900	260209	260619	270009
122004	170503	170901	260500	260622	270012
170109	170504	171500	260504	260700	277001
170200	170600	171502	260505	260701	341001
170300	170601	222001	260600	260702	341002
170303	170800	260200	260609	260800	380700
170400	170801	260201	260614	270003	381000
170500	170802	260204	260616	270007	383300



Map#	CIP Title	CIP Nos
1-13	Refer to Inside City of Detroit Map	
14	Long Term CSO Control Plan "*The Long Term CSO Control Plan will be conducted throughout the Metro Detroit region as-needed (Not in the map)	270003
15	Security Infrastructure Improvements on Water Facilities (Not in the map)	341001
16	Security Infrastructure Improvements for Wastewater Facilities (Not in the map)	341002
17	Water Meter Pit - Gallagher and Trowbridge	170900
18	Water Meter Pit - Anchor and Jefferson	170901
19	96 in Water Transmission Main Relocation and Isolation Valve	122004
20	Baby Creek Outfall Improvements Project - Multiple Projects (4)	277001; 260620; 260623 260613
21	Lake Huron Water Treatment Plant - Multiple Projects (6)	111001,11006-007, 111009, 11011-012
22	Franklin Pumping Station Valve Replacement	132026
23	Imlay Pumping Station Improvements	132007
24	14 Mile Transmission Main Loop	122013
25	West Service Center Pumping Station	132010
26	Southwest Water Treatment Plant	113006
27	Springwells Water Treatment Plant - Multiple Projects (9)	114002, 114005, 114008, 114019-011, 114013, 114016-018,
28	Schoolcraft Road Water Transmission Main	122005
29	Wick Road Water Transmission Main	122006
30	Park-Merriman Road Water Transmission Main	122011
31	Downriver Transmission Main Loop	122016
32	Ford Road Pumping Station, Pressure and Control Improvements	132006
33	Ypsilanti Booster Pumping Station Improvements	132012
34	Newburgh Road Booster Pumping Station Improvements	132015
35	North Service Center Pumping Station Improvements	132016
36	Brownstown Meter Pit (Not in the map)	170902

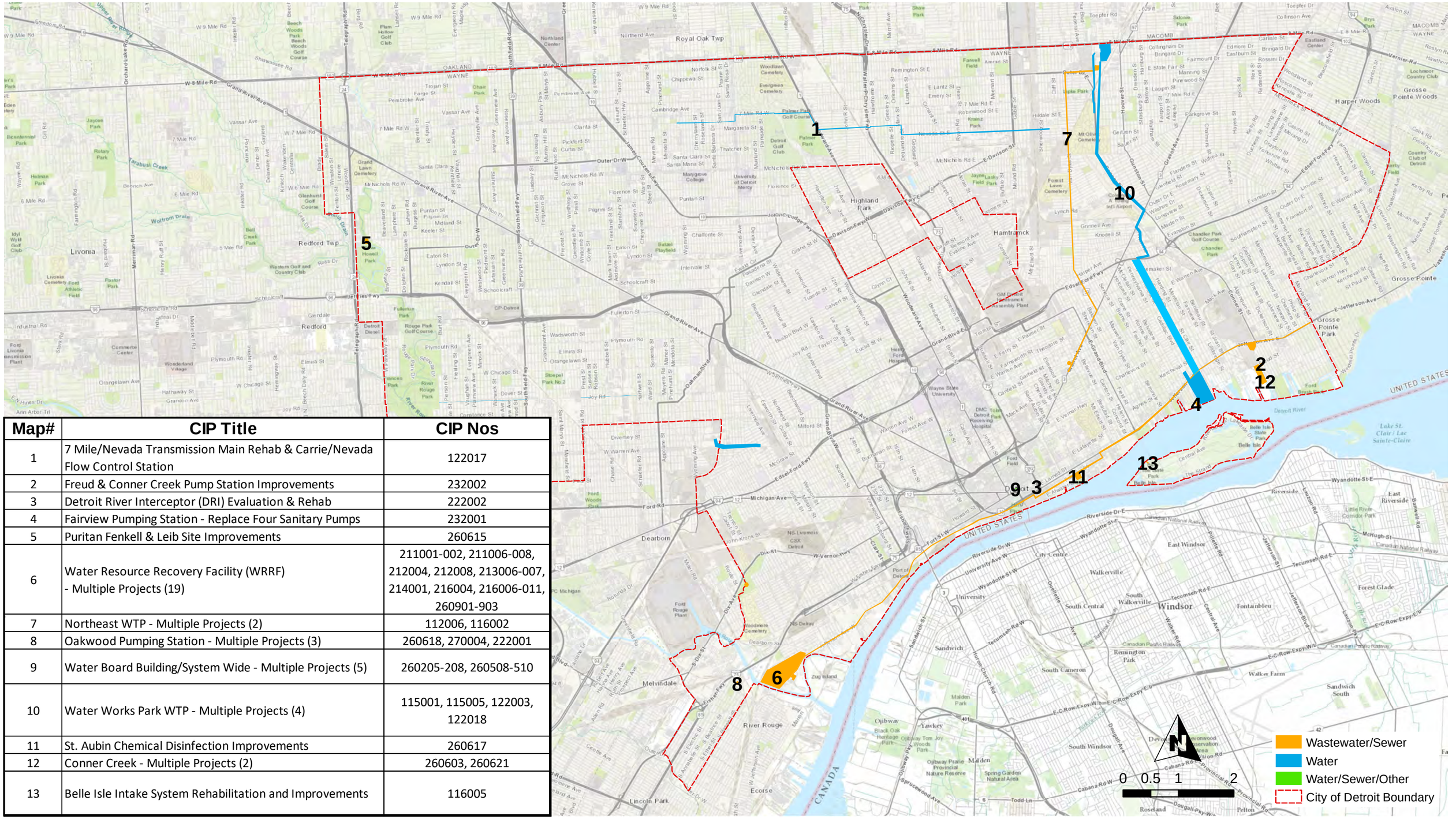
GLWA
Great Lakes Water Authority

CURRENT GLWA FY 2023-2027 CIP PROJECTS - ALL COUNTIES

Notes: Projects depicted on this map are based on the best available data at this time. They may not be completely accurate including spatial representations, leased statuses or attribute values. The user accepts responsibility for accuracy of any referenced information, spatial or otherwise.

USER: YTHOMAS - DATE: 12/8/2021

Map#	CIP Title	CIP Nos
1	7 Mile/Nevada Transmission Main Rehab & Carrie/Nevada Flow Control Station	122017
2	Freud & Conner Creek Pump Station Improvements	232002
3	Detroit River Interceptor (DRI) Evaluation & Rehab	222002
4	Fairview Pumping Station - Replace Four Sanitary Pumps	232001
5	Puritan Fenkell & Leib Site Improvements	260615
6	Water Resource Recovery Facility (WRRF) - Multiple Projects (19)	211001-002, 211006-008, 212004, 212008, 213006-007, 214001, 216004, 216006-011, 260901-903
7	Northeast WTP - Multiple Projects (2)	112006, 116002
8	Oakwood Pumping Station - Multiple Projects (3)	260618, 270004, 222001
9	Water Board Building/System Wide - Multiple Projects (5)	260205-208, 260508-510
10	Water Works Park WTP - Multiple Projects (4)	115001, 115005, 122003, 122018
11	St. Aubin Chemical Disinfection Improvements	260617
12	Conner Creek - Multiple Projects (2)	260603, 260621
13	Belle Isle Intake System Rehabilitation and Improvements	116005



CURRENT GLWA FY 2023-2027 CIP PROJECTS - INSIDE CITY OF DETROIT

Notes: Projects depicted on this map are based on the best available data at this time. They may not be completely accurate including spatial representations, leased statuses or attribute values. The user accepts responsibility for accuracy of any referenced information, spatial or otherwise.

USER: YTHOMAS - DATE: 12/8/2021

2.5. Specialty Projects

PROJECTS WITH THE POTENTIAL TO BE INNOVATIVE

One of GLWA's main organizational guiding pillars is to provide high quality through innovation. To ensure CIP projects are being considered for new and innovative technologies, during the project review process, projects that may be considered for innovative technologies, practices, or procedures were identified by the GLWA Energy, Research & Innovation Group. The following projects will be further evaluated for innovative opportunities during the scope development process:

CIP	TITLE
111001	Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements
111006	Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements
111011	Lake Huron WTP Pilot Plant
111012	LHWTP-Flocculation Improvements
113003	Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements
113007	Southwest Water Treatment Plant Architectural and Building Mechanical Improvements
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pump Station
132021	Imlay Pumping Station Improvements
132022	Joy Road Pumping Station Improvements
170600	Water Transmission Main Asset Assessment Program
211006	WRRF PS No. 1 Improvements
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements
211008	WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines
211009	WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System
211011	WRRF PS1 Screening and Grit Improvements
212004	WRRF Chlorination and Dechlorination Process Equipment Improvements
212008	WRRF Aeration Improvements 1 and 2
212009	WRRF Aeration Improvements 3 and 4
212010	WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite
213008	WRRF Rehabilitation of the Ash Handling Systems
216004	Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF
216006	Assessment and Rehabilitation of WRRF yard piping and underground utilities
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station
270014	Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities
351001	LED Lighting and Lighting Control Improvements

WATER MASTER PLAN RIGHT-SIZING PROJECTS

Based upon the completion and acceptance of the 2015 Comprehensive Water Master Plan, many water projects are being considered with reduced capital investment to reduce the rated capacity to master plan identified levels based upon current population and water usage. The following projects have capital expenditure avoidance based upon water master planning efforts to right-size the system for current needs:

CIP	TITLE
111001	Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements
111010	Filtration Improvements
111011	Lake Huron WTP Pilot Plant
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements
113003	Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements
114013	Springwells Water Treatment Plant, Reservoir Fill Line Improvements
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement
115007	Water Works Park High Lift Pumping Station Modernization
122003	Water Works Park to Northeast Transmission Main
122007	Merriman Road Water Transmission Main Loop
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pump Station
132019	Wick Road Pumping Station Improvements
132021	Imlay Pumping Station Improvements

WASTEWATER MASTER PLAN PROJECTS

GLWA has recently completed the first Wastewater Master Plan. The following projects have come about due to recommendations in this Master Plan:

CIP	TITLE
213009	WRRF Biosolids Processing Improvements
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station
216010	WRRF Facility Optimization
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District
232004	Condition Assessment at Blue Hill Pump Station
233003	Rouge River In-system Storage Devices
270001	Pilot CSO Netting Facility
270002	Meldrum Sewer Diversion and VR-15 Improvements
270004	Oakwood and Leib CSO Facilities Improvement Project
274001	Leib Improvements for Meldrum Diversion

NORTHEAST WATER TREATMENT PLANT REPURPOSING RELATED PROJECTS

The 2015 Comprehensive Water Master Plan has identified reducing the number of water treatment facilities in full operation at GLWA. Initially, for long-term capital expenditure avoidance, the plan has identified the repurposing of the Northeast Water Treatment Plant. Several capital projects are necessary to repurpose this facility into a reservoir and pump station to achieve the savings identified in the master plan. The following projects are associated with the repurposing of the Northeast Water Treatment Plant:

CIP	TITLE
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements
114013	Springwells Water Treatment Plant, Reservoir Fill Line Improvements
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement
115007	Water Works Park High Lift Pumping Station Modernization
122003	Water Works Park to Northeast Transmission Main
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation

REDUNDANCY PROJECTS

Projects which will increase the redundancy of GLWA infrastructure are listed below:

CIP	TITLE
111001	Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements
111006	Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements
111007	Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements
111009	Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements
111010	Filtration Improvements
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements
113008	SWP Reservoir Replacement
114001	Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements
114008	Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements
114010	Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements
114013	Springwells Water Treatment Plant, Reservoir Fill Line Improvements
114016	Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement
114017	Springwells Water Treatment Plant Flocculator Drive Replacements
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement
116002	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements
122003	Water Works Park to Northeast Transmission Main
122004	96-inch Water Transmission Main Relocation and Isolation Valve Installations
122005	Schoolcraft Road Water Transmission Main
122006	Wick Road Water Transmission Main
122007	Merriman Road Water Transmission Main Loop
122011	Park-Merriman Road Water Transmission Main
122013	14 Mile Transmission Main Loop
122016	Downriver Transmission Main Loop
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation
132003	West Service Center Pumping Station, Isolation Gate Valves for Line Pumps
132006	Ford Road Pumping Station, Pressure and Control Improvements
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pump Station
132010	West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades
132012	Ypsilanti Booster Pumping Station Improvements
132015	Newburgh Road Booster Pumping Station Improvements
132016	North Service Center Pumping Station Improvements
132018	Schoolcraft Pumping Station Improvements
132019	Wick Road Pumping Station Improvements
132021	Imlay Pumping Station Improvements
132022	Joy Road Pumping Station Improvements
170400	Water Transmission Improvement Program
170500	Transmission System Valve Rehabilitation and Replacement Program
170800	System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation
170801	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant
170802	Reservoir Inspection, Design, and Construction Management Services Phase II
170803	Reservoir Inspection, Design, and Construction Management Services Phase III
211001	WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery
211002	WRRF PS No. 2 Pumping Improvements - Phase 1
211004	WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements
211005	WRRF PS No. 2 Improvements Phase II
211006	WRRF PS No. 1 Improvements
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements
211008	WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines
211009	WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System
211010	Rehabilitation of Sludge Processing Complexes A and B
211011	WRRF PS1 Screening and Grit Improvements
212004	WRRF Chlorination and Dechlorination Process Equipment Improvements
212006	WRRF Rouge River Outfall (RRO) Disinfection (Alternative)
212008	WRRF Aeration Improvements 1 and 2
212009	WRRF Aeration Improvements 3 and 4
213006	WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities
213007	WRRF Modification to Incinerator Sludge Feed Systems at Complex -II
213008	WRRF Rehabilitation of the Ash Handling Systems

CIP	TITLE
214001	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations
216004	Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF
216006	Assessment and Rehabilitation of WRRF yard piping and underground utilities
216007	DTE Primary Electric 3rd Feed Supply to WRRF
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation
232001	Fairview Pumping Station - Replace Four Sanitary Pumps
232002	Freud & Conner Creek Pump Station Improvements
232004	Condition Assessment at Blue Hill Pump Station
260200	Sewer and Interceptor Rehabilitation Program
260500	CSO Outfall Rehabilitation
260510	Conveyance System Repairs (Outfalls)
260600	CSO FACILITIES IMPROVEMENT PROGRAM
260619	Control System Upgrade - St Aubin, Lieb & Mile
260623	CSO Baby Creek Screen Rehabilitation
260800	WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM
261000	WRRF Rehabilitation of the Secondary Clarifiers
261001	WRRF Rehabilitation of the Secondary Clarifiers Phase 1
270002	Meldrum Sewer Diversion and VR-15 Improvements
270005	CSO Facility Safety Improvements and Building Rehabilitation
270010	HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities
273002	CSO Hubbell Southfield VR-8 Gate Improvements
277002	Baby Creek CSO Facility Influent Flushing System
381000	Power Quality: Electric Metering Improvement Program

2.6. Project By Type

The following are CIP projects further broken down by category type, divided between Water – Treatment, Transmission/Storage, and Pump Station. Furthermore, Wastewater CIP projects are also broken down by category types - Treatment, Conveyance, CSO, and Pump Station.

WATER: PUMP STATIONS

CIP	TITLE
132003	West Service Center Pumping Station, Isolation Gate Valves for Line Pumps
132006	Ford Road Pumping Station, Pressure and Control Improvements
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pump Station
132010	West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades
132012	Ypsilanti Booster Pumping Station Improvements
132014	Adams Road Pumping Station Improvements
132015	Newburgh Road Booster Pumping Station Improvements
132016	North Service Center Pumping Station Improvements
132018	Schoolcraft Pumping Station Improvements
132019	Wick Road Pumping Station Improvements
132020	Franklin Pumping Station Improvements
132021	Imlay Pumping Station Improvements
132022	Joy Road Pumping Station Improvements
132026	Franklin Pumping Station Valve Replacement

WATER: TRANSMISSION AND STORAGE

CIP	TITLE
113008	SWP Reservoir Replacement
115008	Jefferson Main Replacement Project
122003	Water Works Park to Northeast Transmission Main
122004	96-inch Water Transmission Main Relocation and Isolation Valve Installations
122005	Schoolcraft Road Water Transmission Main
122006	Wick Road Water Transmission Main
122007	Merriman Road Water Transmission Main Loop
122011	Park-Merriman Road Water Transmission Main
122013	14 Mile Transmission Main Loop
122016	Downriver Transmission Main Loop
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation
170400	Water Transmission Improvement Program
170500	Transmission System Valve Rehabilitation and Replacement Program
170502	Transmission System Valve Rehabilitation and Replacement Program
170503	Transmission System Valve Replacement
170504	Transmission Mains Valves and Urgent
170600	Water Transmission Main Asset Assessment Program
170601	Linear System Integrity Program
170800	System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation
170801	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant
170802	Reservoir Inspection, Design, and Construction Management Services Phase II
170803	Reservoir Inspection, Design, and Construction Management Services Phase III
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement
170902	Brownstown Meter Pit

WATER: TREATMENT

CIP	TITLE
111001	Lake Huron Water Treatment Plant, Low-Lift, High Lift, and Filter Backwash Pumping System Improvements
111002	Lake Huron Water Treatment Plant, Miscellaneous Mechanical HVAC Improvements
111006	Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements
111008	Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements
111009	Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements
111010	Filtration Improvements
111011	Lake Huron WTP Pilot Plant
111012	LHWTP-Flocculation Improvements
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements
112005	Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits
112006	Northeast Water Treatment Plant Flocculator Replacements
113002	Southwest Water Treatment Plant, High-Lift Pump Discharge Valve Actuators Replacement
113003	Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements
113006	Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements
113007	Southwest Water Treatment Plant Architectural and Building Mechanical Improvements
114001	Springwells Water Treatment Plant, 1958 Filter Rehabilitation and Auxiliary Facilities Improvements
114002	Springwells Water Treatment Plant, Low-Lift, and High-Lift Pumping Station Improvements
114005	Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop
114007	Springwells Water Treatment Plant Powdered Activated Carbon System Improvements
114008	Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements
114010	Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements
114011	Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements
114016	Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement
114017	Springwells Water Treatment Plant Flocculator Drive Replacements
114018	Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement
115004	Water Works Park Water Treatment Plant Chlorine System Upgrade
115005	WWP WTP Building Ventilation Improvements
115006	Water Works Park Site/Civil Improvements
115007	Water Works Park High Lift Pumping Station Modernization
115009	Water Works Park Sedimentation Basins Structural Upgrades
116002	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements
116005	Belle Isle Seawall Rehabilitation
116006	Belle Isle Intake System Rehabilitation and Improvements
116007	System Electrical Power Improvements
170109	GLWA-CS-187: FK Eng: Raw Water Intake
170200	As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services
170300	Water Treatment Plant Automation Program
170302	SW SCADA System Upgrade
170303	Power Monitoring Installation for Water Treatment Plants
170304	WWP Scada Infrastructure Upgrade
170305	WWP SCADA Network Upgrade
170306	SPW SCADA PLC Network Upgrade
170307	NE SCADA Network Upgrade
171500	Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities
171502	Lake Huron and Southwest Roof Replacement
331003	Masonry Replacement and Rehabilitation
341001	Security Infrastructure Improvements on Water Facilities
351001	LED Lighting and Lighting Control Improvements

WASTEWATER: TREATMENT

CIP	TITLE
211001	WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery
211002	WRRF PS No. 2 Pumping Improvements - Phase 1
211004	WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements
211005	WRRF PS No. 2 Improvements Phase II
211006	WRRF PS No. 1 Improvements
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements
211008	WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines
211009	WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System
211010	Rehabilitation of Sludge Processing Complexes A and B
211011	WRRF PS1 Screening and Grit Improvements
212006	WRRF Rouge River Outfall (RRO) Disinfection (Alternative)
212007	WRRF Rehabilitation of the Secondary Clarifiers
212008	WRRF Aeration Improvements 1 and 2
212009	WRRF Aeration Improvements 3 and 4
212010	WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite
213006	WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities
213007	WRRF Modification to Incinerator Sludge Feed Systems at Complex -II
213008	WRRF Rehabilitation of the Ash Handling Systems
213009	WRRF Biosolids Processing Improvements
214001	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations
216004	Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF
216006	Assessment and Rehabilitation of WRRF yard piping and underground utilities
216007	DTE Primary Electric 3rd Feed Supply to WRRF
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station
216011	WRRF Structural Improvements
260800	WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM
260900	WRRF Facility Optimization Program
260901	Rehabilitation of HAZMAT Facility at WRRF
260902	WRRF 4th Floor Renovation
260903	WRRF Front Entrance Rehabilitation
341002	Security Infrastructure Improvements for Wastewater Facilities

WASTEWATER: PUMP STATIONS

CIP	TITLE
232001	Fairview Pumping Station - Replace Four Sanitary Pumps
232002	Freud & Conner Creek Pump Station Improvements
232004	Condition Assessment at Blue Hill Pump Station
260702	Pump Station Assets Updates

WASTEWATER: CONVEYANCE

CIP	TITLE
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation
233003	Rouge River In-system Storage Devices
260200	Sewer and Interceptor Rehabilitation Program
260201	CON-149, Emergency Sewer Repair
260204	Conveyance System Engineering Services-1802575
260205	NWI Rehabilitation
260206	Conveyance System Repairs (Sewers)
260207	Rehabilitation of Woodward Sewer Systems
260209	Sewer Rehabilitation and Repair
260510	Conveyance System Repairs (Outfalls)
260700	Sewer System Infrastructure Improvements and Pumping Stations
260701	Conveyance System Infrastructure Improvements

WASTEWATER: CSO

CIP	TITLE
260500	CSO Outfall Rehabilitation
260504	Phase 2 Outfalls- 19000796
260508	B-39 Outfall Rehabilitation
260600	CSO FACILITIES IMPROVEMENT PROGRAM
260601	Oakwood CSO Control Facility Drain Valve Improvements
260603	Conner Creek CSO RTB Automation Improvements
260609	Seven Mile RTB - Parking Lot Replacement & Misc. Site Work
260610	Baby Creek SDF - HV Units Replacement
260611	Leib SDF- HVAC System Improvements
260613	Baby Creek HVAC Improvements
260614	Structural Inspection & Structural Improvements
260615	Puritan Fenkell & Leib Site Improvements
260616	Baby Creek Towards Treatment Sewer Improvements
260617	St. Aubin Chemical Disinfection Improvements
260618	Oakwood HVAC Project
260619	Control System Upgrade - St Aubin, Lieb & Mile
260620	Baby Creek Roof Replacement
260621	Conner Creek Dike Improvements
260622	CSO Emergency Generator Improvements
260623	CSO Baby Creek Screen Rehabilitation
270001	Pilot CSO Netting Facility
270002	Meldrum Sewer Diversion and VR-15 Improvements
270003	Long Term CSO Control Plan
270004	Oakwood and Leib CSO Facilities Improvement Project
270005	CSO Facility Safety Improvements and Building Rehabilitation
270006	Control System Upgrades at Baby Creek and Belle Isle CSO Facilities
270007	Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities
270008	Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities
270009	Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities
270010	HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities
270011	HVAC Improvements at Conner Creek and Belle Isle CSO Facilities
270012	Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities
270013	Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities
270014	Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities
273001	Hubbell Southfield CSO Facility Improvements
273002	CSO Hubbell Southfield VR-8 Gate Improvements
277001	Baby Creek Outfall Improvements Project
277002	Baby Creek CSO Facility Influent Flushing System

2.7. Project Scoring

CRITERIA SCORING AND WEIGHTING

Water and wastewater projects continue to be scored based on the eight criteria shown in Table 1 . For each project, a criteria score of 1 to 5 has been assigned, with a score of 1 representing minimal value or benefit, and 5 representing high value or benefit based on established definitions and scoring guidelines for each criteria.

Table 1: Project Criteria

NO.	WEIGHT	CRITERIA
1	12%	Condition
2	15%	Performance (Service Level/Reliability)
3	18%	Regulatory (Environmental/Legal)
4	11%	O&M
5	18%	Health & Safety
6	8%	Public Benefit
7	10%	Financial
8	8%	Efficiency & Innovation

Weights for the eight criteria in Table 1 have been established based on GLWA ranking of the relative importance of each criteria to GLWA's overall priorities. Two of the criteria weightings were revised this year to better reflect GLWA's overall priorities. The Health and Safety weighting was increased from 17% to 18% and the Efficiency & Innovation weighting was decreased from 9% to 8% to maintain a balanced total.

PROJECT SCORING AND PRIORITIZATION

The criteria scores and weighting are used to establish scores for each project by considering the following factors: 1) the single highest purpose and benefit of each project; and 2) the overall benefit of each project as follows:

1. The single highest purpose and benefit of each project represents the single criteria that provides the greatest relative benefit to GLWA. For example, a score of 5 for either Health and Safety or Regulatory criteria represents the greatest purpose and benefit to GLWA based on the established criteria weighting. This consideration has been reflected through the revised project scoring methodology and functions as the primary driver of the overall project score.
2. The overall benefit of each project accounts for all the benefits provided by the project and is represented by the sum of all the criteria scores for the project.

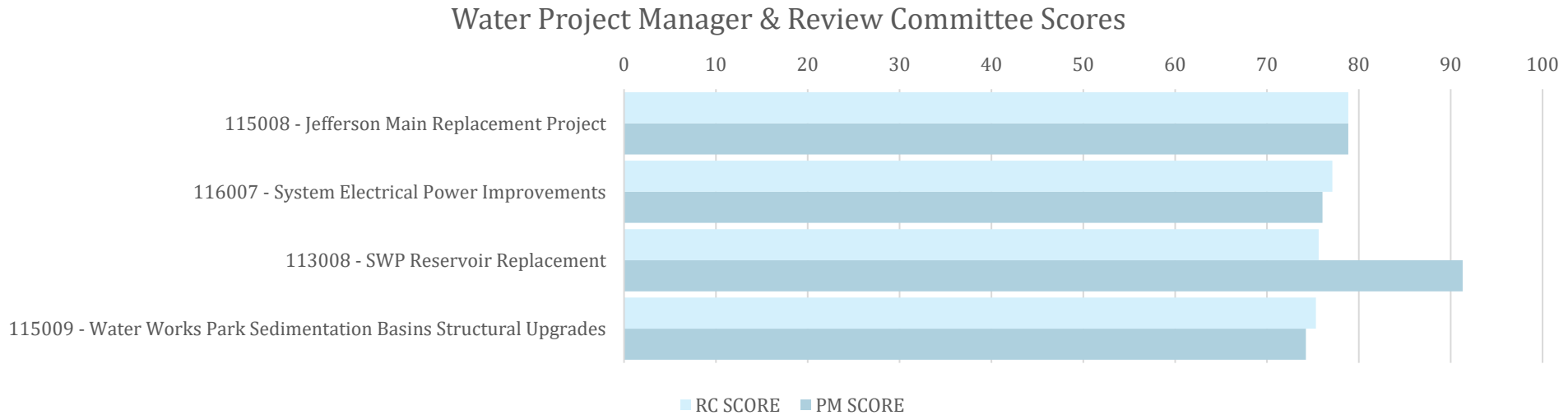
The calculation of project scores can be represented by the following equation, where factor 1 above contributes up to 70 out of 100 total points, and factor 2 contributes up to 30 of the total 100 points:

Total Project Score = Factor 1 (70/100) + Factor 2 (30/100)

New projects and projects with significant changes were scored or re-scored by the Project Manager and the Review Committee. The Review Committee scores represent the final project score. Projects already existing in the CIP were evaluated using criteria scores applied in the previous CIP cycle. The pages that follow provide the new project scores from the Risk Committee along with those from the Project Manager for reference.

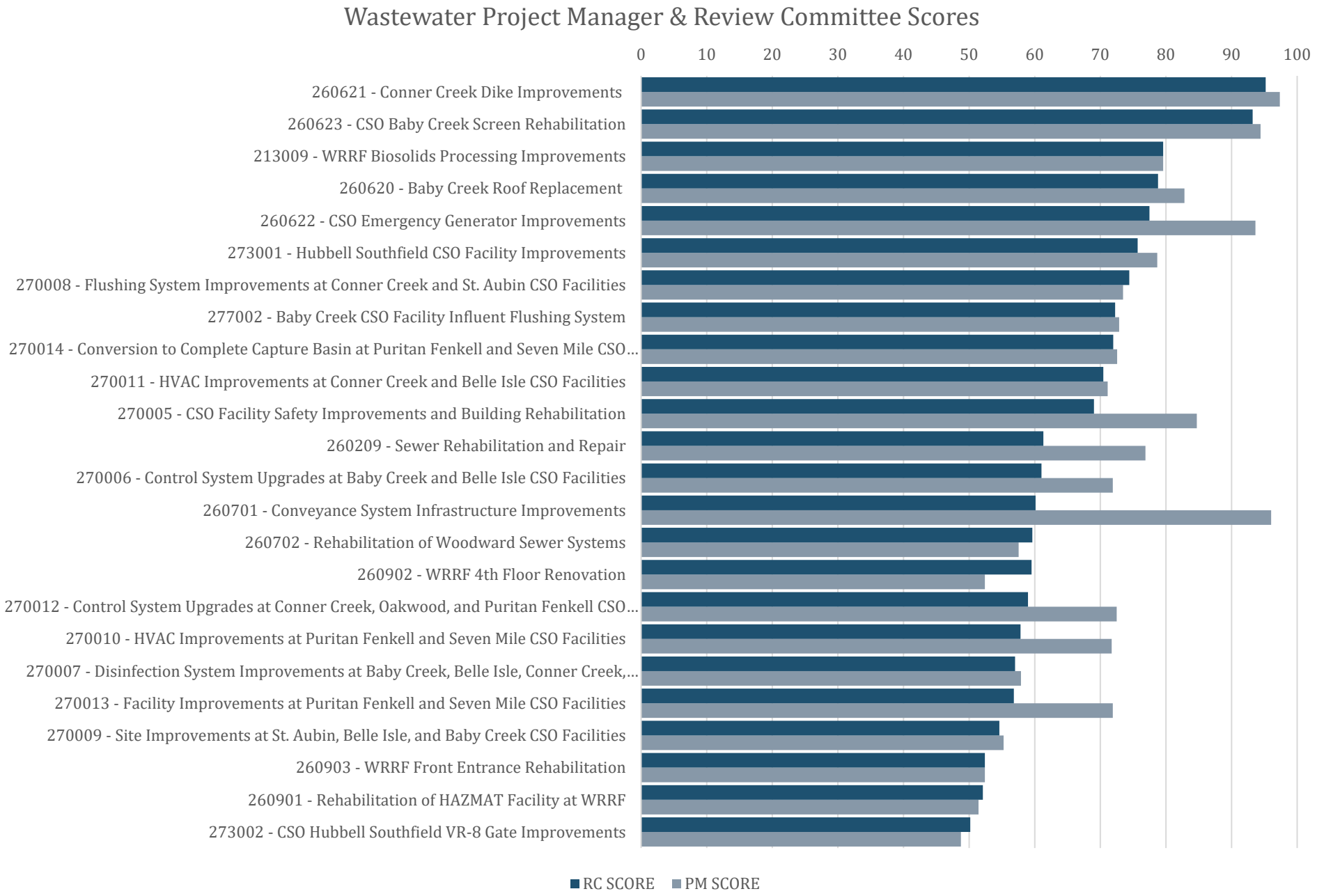
WATER PROJECT MANGER & REVIEW COMMITTEE SCORES

CIP NO.	TITLE	1	2	3	4	5	6	7	8	PM SCORE	1	2	3	4	5	6	7	8	RC SCORE
115009	Water Works Park Sedimentation Basins Structural Upgrades	4	3	3	1	4	2	5	1	74.2	4	3	4	1	4	2	5	1	75.3
113008	SWP Reservoir Replacement	4	3	5	4	3	2	5	1	91.3	4	3	4	4	3	2	4	1	75.6
116007	System Electrical Power Improvements	3	4	3	4	4	4	2	2	76.0	3	4	4	4	4	4	2	2	77.1
115008	Jefferson Main Replacement Project	5	5	1	5	2	4	5	2	78.9	5	5	1	5	2	4	5	2	78.9



WASTEWATER PROJECT MANGER & REVIEW COMMITTEE SCORES

RANK	CIP NO.	TITLE	1	2	3	4	5	6	7	8	PM SCORE	1	2	3	4	5	6	7	8	RC SCORE
1	273002	CSO Hubbell Southfield VR-8 Gate Improvements	1	3	2	4	2	1	4	1	48.7	1	2	3	4	5	6	7	8	50.2
2	260901	Rehabilitation of HAZMAT Facility at WRRF	4	2	2	3	2	2	2	2	51.4	3	3	2	4	2	1	4	1	52.1
3	260903	WRRF Front Entrance Rehabilitation	4	2	2	3	2	2	2	4	52.4	4	2	2	4	2	2	2	2	52.4
4	270009	Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities	1	2	2	3	3	1	4	1	55.3	4	2	2	3	2	2	2	4	54.6
5	270013	Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities	1	3	2	4	4	1	4	1	71.9	1	2	2	2	3	1	4	1	56.8
6	270007	Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities	1	3	3	4	2	1	5	2	57.9	1	3	2	4	3	1	4	1	57.0
7	270010	HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities	2	2	2	4	4	1	4	1	71.7	1	2	3	4	2	1	5	2	57.8
8	270012	Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities	1	3	2	4	4	1	5	1	72.5	3	2	2	4	3	2	4	1	59.0
9	260902	WRRF 4th Floor Renovation	4	2	2	3	2	2	2	4	52.4	4	3	2	4	3	1	4	1	59.5
10	260702	Rehabilitation of Woodward Sewer Systems	3	3	3	4	2	2	2	1	57.5	4	3	2	3	3	3	2	4	59.6
11	260701	Conveyance System Infrastructure Improvements	5	5	5	3	5	5	3	2	96.0	4	3	3	3	3	4	2	1	60.1
12	270006	Control System Upgrades at Baby Creek and Belle Isle CSO Facilities	1	3	2	4	4	1	4	1	71.9	3	3	3	3	3	4	4	1	61.0
13	260209	Sewer Rehabilitation and Repair	4	4	3	4	4	3	3	2	76.9	4	3	3	4	3	3	4	1	61.3
14	270005	CSO Facility Safety Improvements and Building Rehabilitation	1	2	2	1	5	1	5	1	84.7	4	3	3	3	3	4	4	2	69.0
15	270011	HVAC Improvements at Conner Creek and Belle Isle CSO Facilities	2	2	2	4	4	1	3	1	71.1	1	2	2	1	4	1	4	1	70.5
16	270014	Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities	1	2	2	4	4	1	5	3	72.6	2	2	2	3	4	1	3	1	72.0
17	277002	Baby Creek CSO Facility Influent Flushing System	1	3	2	4	4	1	4	3	72.9	1	2	2	4	4	1	4	3	72.3
18	270008	Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities	1	3	2	4	4	1	5	3	73.5	1	3	2	4	4	1	3	3	74.4
19	273001	Hubbell Southfield CSO Facility Improvements	1	5	3	4	4	1	5	3	78.7	3	3	2	4	4	1	5	2	75.7
20	260622	CSO Emergency Generator Improvements	5	5	5	5	3	3	2	2	93.6	2	4	3	4	4	1	5	2	77.5
21	260620	Baby Creek Roof Replacement	5	5	4	5	4	1	5	2	82.8	5	4	4	4	3	4	2	2	78.8
22	213009	WRRF Biosolids Processing Improvements	4	4	4	5	4	3	3	4	79.6	5	4	4	4	4	2	4	2	79.6
23	260623	CSO Baby Creek Screen Rehabilitation	4	3	5	4	5	4	5	1	94.4	4	4	4	5	4	3	3	4	93.2
24	260621	Conner Creek Dike Improvements	4	5	5	5	5	5	5	1	97.36	4	3	5	4	5	4	3	1	95.2


Wastewater Project Manager & Review Committee Scores
0
10
20
30
40
50
60
70
80
90
100
260621 - Conner Creek Dike Improvements
260623 - CSO Baby Creek Screen Rehabilitation
213009 - WRRF Biosolids Processing Improvements
260620 - Baby Creek Roof Replacement
260622 - CSO Emergency Generator Improvements
273001 - Hubbell Southfield CSO Facility Improvements
270008 - Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities
277002 - Baby Creek CSO Facility Influent Flushing System
270014 - Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO...
270011 - HVAC Improvements at Conner Creek and Belle Isle CSO Facilities
270005 - CSO Facility Safety Improvements and Building Rehabilitation
260209 - Sewer Rehabilitation and Repair
270006 - Control System Upgrades at Baby Creek and Belle Isle CSO Facilities
260701 - Conveyance System Infrastructure Improvements
260702 - Rehabilitation of Woodward Sewer Systems
260902 - WRRF 4th Floor Renovation
270012 - Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO...
270010 - HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities
270007 - Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek,...
270013 - Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities
270009 - Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities
260903 - WRRF Front Entrance Rehabilitation
260901 - Rehabilitation of HAZMAT Facility at WRRF
273002 - CSO Hubbell Southfield VR-8 Gate Improvements
RC SCORE
PM SCORE

3 CIP PROJECTS BY CATEGORY

3.1. Largest CIP Projects

The Water and Wastewater projects included in the FY2023-2027 CIP with the largest projected lifetime spend (the top five for each) are listed below. Programs are excluded from the tables below.

WATER

Financial figures are in thousands of dollars ($1,000's).

CIP #	PROJECT TITLE	LIFETIME PLAN SPEND
114002	Springwells Water Treatment Plant, Low-Lift, and High-Lift Pumping Station Improvements	$281,908
122004	96-inch Water Transmission Main Relocation and Isolation Valve Installations	$259,843
114010	Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements	$195,689
122003	Water Works Park to Northeast Transmission Main	$147,768
122013	14 Mile Transmission Main Loop	$111,420

WASTEWATER

Financial figures are in thousands of dollars ($1,000's).

CIP #	PROJECT TITLE	LIFETIME PLAN SPEND
232002	Freud & Conner Creek Pump Station Improvements	$262,798
213009	WRRF Biosolids Processing Improvements	$180,000
211011	WRRF PS1 Screening and Grit Improvements	$93,000
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements	$88,771
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation	$77,184

3.2. Largest Dollar Projects (Greater than $30M)

The Water and Wastewater projects with the largest projected spend for the FY2023-2027 CIP are listed below. These projects are planned for greater than $30 Million over the FY2023-2027 time period. There are ten (10) projects in the Water category and eight (8) projects in the Wastewater category.

WATER PROJECTS WITH 5-YEAR TOTAL GREATER THAN $30M

Financial figures are in thousands of dollars ($1,000's).

CIP #	TITLE	LIFETIME ACTUAL THRU FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28+	2023-27 CIP TOTAL	PROJECT TOTAL
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	$12,944	$14,472	$12,000	$20,000	$25,952	$25,000	$26,000	$145,539	$108,952	$281,908
122004	96-inch Water Transmission Main Relocation and Isolation Valve Installations	$9,674	$8,533	$15,000	$40,000	$40,000	$40,000	$35,000	$71,636	$170,000	$259,843
122003	Water Works Park to Northeast Transmission Main	$21,325	$7,089	$23,904	$19,122	$19,069	$19,069	$19,069	$19,122	$100,233	$147,768
122013	14 Mile Transmission Main Loop	$10,464	$26,882	$29,636	$29,216	$15,223	$0	$0	$0	$74,075	$111,420
116002	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements	$30,633	$13,663	$13,663	$13,701	$13,663	$13,663	$0	$0	$54,690	$98,986
122016	Downriver Transmission Main Loop	$1,620	$2,226	$7,500	$15,000	$15,000	$5,000	$5,000	$11,615	$47,500	$62,962
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	$1,454	$1,023	$1,023	$3,401	$11,857	$11,857	$11,857	$18,257	$39,995	$60,729
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	$5,750	$11,790	$11,790	$11,822	$11,790	$2,100	$0	$0	$37,502	$55,042
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	$0	$1,999	$1,999	$2,004	$9,582	$9,582	$9,582	$19,190	$32,749	$53,938
170802	Reservoir Inspection, Design, and Construction Management Services Phase II	$0	$500	$8,000	$9,000	$8,000	$8,000	$8,000	$0	$41,000	$41,500

WASTEWATER PROJECTS WITH 5-YEAR TOTAL GREATER THAN $30M

Financial figures are in thousands of dollars ($1,000's).

CIP #	TITLE	LIFETIME ACTUAL THRU FY21	PROJECTED EXPENDITURES	FY23	FY24	FY25	FY26	FY27	FY28+	2023-27 CIP TOTAL	PROJECT TOTAL
232002	Freud & Conner Creek Pump Station Improvements	$262,798	$3,780	$10,753	$19,818	$32,653	$32,692	$30,177	$122,364	$126,095	$262,798
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements	$88,771	$3,000	$2,461	$13,104	$13,104	$13,104	$13,104	$29,383	$54,878	$88,771
211006	WRRF PS No. 1 Improvements	$70,042	$600	$8,100	$10,136	$10,136	$10,136	$10,136	$17,305	$48,645	$70,042
260701	Conveyance System Infrastructure Improvements	$55,631	$5,774	$15,639	$17,041	$11,793	$4,000	$0	$0	$48,473	$55,631
260204	Conveyance System Engineering Services-1802575	$50,053	$1,276	$11,168	$18,358	$18,307	$0	$0	$0	$47,833	$50,053
212008	WRRF Aeration Improvements 1 and 2	$73,884	$0	$0	$1,500	$13,283	$13,283	$13,069	$32,165	$41,136	$73,884
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	$53,466	$1,182	$1,182	$1,185	$10,818	$14,123	$13,003	$11,497	$40,311	$53,466
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station	$40,226	$1,500	$2,510	$10,848	$10,848	$14,258	$0	$0	$38,464	$40,226

3.3. Largest 2023 Projected Spend (Greater than $5M)

The Water and Wastewater projects with the largest projected spend for 2023 are listed below. These projects are planned for greater than $5 Million in FY 2023. There are twelve (12) projects in the Water category and eight (8) projects in the Wastewater category.

WATER PROJECTS WITH 2023 PROJECTED SPEND GREATER THAN $5M

Financial figures are in thousands of dollars ($1,000's).

CIP #	TITLE	LIFETIME ACTUAL THRU FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28+	2023-27 CIP TOTAL	PROJECT TOTAL
122013	14 Mile Transmission Main Loop	$10,464	$2,882	$29,636	$29,216	$15,223	$0	$0	$0	$74,075	$111,420
122003	Water Works Park to Northeast Transmission Main	$21,325	$7,089	$23,904	$19,122	$19,069	$19,069	$19,069	$19,122	$100,233	$147,768
132010	West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades	$9,058	$19,399	$16,689	$442	$0	$0	$0	$0	$17,131	$45,588
122004	96-inch Water Transmission Main Relocation and Isolation Valve Installations	$9,674	$8,533	$15,000	$40,000	$40,000	$40,000	$35,000	$71,636	$170,000	$259,843
116002	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements	$30,633	$13,663	$13,663	$13,701	$13,663	$13,663	$0	$0	$54,690	$98,986
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	$12,944	$14,472	$12,000	$20,000	$25,952	$25,000	$26,000	$145,539	$108,952	$281,908
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	$5,750	$11,790	$11,790	$11,822	$11,790	$2,100	$0	$0	$37,502	$55,042
111009	Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements	$1,726	$9,021	$9,021	$9,046	$1,236	$0	$0	$0	$19,303	$30,051
170802	Reservoir Inspection, Design, and Construction Management Services Phase II	$0	$500	$8,000	$9,000	$8,000	$8,000	$8,000	$0	$41,000	$41,500
122016	Downriver Transmission Main Loop	$1,620	$2,226	$7,500	$15,000	$15,000	$5,000	$5,000	$11,615	$47,500	$62,962
170801	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant	$11,458	$6,005	$6,830	$465	$0	$0	$0	$0	$7,295	$24,758
115005	WWP WTP Building Ventilation Improvements	$563	$286	$5,400	$3,100	$2,100	$0	$0	$0	$10,600	$11,449

WASTEWATER PROJECTS WITH 2023 PROJECTED SPEND GREATER THAN $5M

Financial figures are in thousands of dollars ($1,000's)

CIP #	TITLE	LIFETIME ACTUAL THRU FY21	PROJECTED EXPENDITURES	FY23	FY24	FY25	FY26	FY27	FY28+	2023-27 CIP TOTAL	PROJECT TOTAL
260701	Conveyance System Infrastructure Improvements	$1,384	$5,774	$15,639	$17,041	$11,793	$4,000	$0	$0	$48,473	$55,631
260204	Conveyance System Engineering Services-1802575	$944	$1,276	$11,168	$18,358	$18,307	$0	$0	$0	$47,833	$50,053
232002	Freud & Conner Creek Pump Station Improvements	$10,560	$3,780	$10,753	$19,818	$32,653	$32,692	$30,177	$122,364	$126,095	$262,798
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation	$37,098	$10,472	$9,415	$3,060	$3,046	$3,046	$3,046	$8,000	$21,614	$77,184
211006	WRRF PS No. 1 Improvements	$3,492	$600	$8,100	$10,136	$10,136	$10,136	$10,136	$17,305	$48,645	$70,042
260200	Sewer and Interceptor Rehabilitation Program	$0	$4,911	$6,604	$6,644	$5,793	$5,793	$1,100	$35,000	$25,935	$65,845
260508	B-39 Outfall Rehabilitation	$150	$3,214	$5,392	$0	$0	$0	$0	$0	$5,392	$8,755
260205	NWI Rehabilitation	$267	$37	$5,044	$5,030	$0	$0	$0	$0	$10,074	$10,379

3.4. Water Projects by Status

All financial figures are in thousands of dollars ($1,000's). The Project Status column shows which projects are Active (A), Future Planned (FP), or Pending Closeout (PC). Projects that have been Reclassified to a different number, Closed, or Cancelled are not shown in this list; a list of Closed projects can be found in Section 2.2. For projects in the "Centralized Services" category (CIP number begins with 3), only portions of projects funded by the water planned spend are included in this section.

WATER CIP PROJECTS: ACTIVE, RANKED BY 5-YEAR CIP TOTAL

Financial figures are in thousands of dollars ($1,000's).
Score Note: * Denotes a CIP project that is a Program. For projects with no score, see Appendix for PM Scores

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
122004	96-inch Water Transmission Main Relocation and Isolation Valve Installations	Active - Pre-Procurement - Construction	2016	$9,674	$8,533	$15,000	$40,000	$40,000	$40,000	$35,000	$71,636	$170,000	$259,843	8.85%	78.01
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	Project Execution - Design	2004	$12,944	$14,472	$12,000	$20,000	$25,952	$25,000	$26,000	$145,539	$108,952	$281,908	9.61%	90.88
122003	Water Works Park to Northeast Transmission Main	Project Execution - Construction	2014	$21,325	$7,089	$23,904	$19,122	$19,069	$19,069	$19,069	$19,122	$100,233	$147,768	5.04%	76.81
122013	14 Mile Transmission Main Loop	Project Execution - Construction	2017	$10,464	$26,882	$29,636	$29,216	$15,223	$0	$0	$0	$74,075	$111,420	3.80%	75.97
116002	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements	Project Execution - Construction	2016	$30,633	$13,663	$13,663	$13,701	$13,663	$13,663	$0	$0	$54,690	$98,986	3.37%	0.00
122016	Downriver Transmission Main Loop	Project Execution - Design	2017	$1,620	$2,226	$7,500	$15,000	$15,000	$5,000	$5,000	$11,615	$47,500	$62,962	2.15%	75.97
170802	Reservoir Inspection, Design, and Construction Management Services Phase II	Active - Procurement - Design	2021	$0	$500	$8,000	$9,000	$8,000	$8,000	$8,000	$0	$41,000	$41,500	1.41%	0.00
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	Project Execution - Construction	2019	$1,454	$1,023	$1,023	$3,401	$11,857	$11,857	$11,857	$18,257	$39,995	$60,729	2.07%	81.20
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	Project Execution - Construction	2007	$5,750	$11,790	$11,790	$11,822	$11,790	$2,100	$0	$0	$37,502	$55,042	1.88%	77.89
122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	Active - Procurement - Design	2019	$0	$1,999	$1,999	$2,004	$9,582	$9,582	$9,582	$19,190	$32,749	$53,938	1.84%	85.03
111012	LHWTP-Flocculation Improvements	Project Execution - Design	2021	$1	$936	$2,113	$1,799	$8,447	$8,447	$7,244	$3,092	$28,049	$32,079	1.09%	91.48

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
114017	Springwells Water Treatment Plant Flocculator Drive Replacements	Project Execution - Design	2018	$190	$600	$660	$8,850	$8,850	$1,580	$0	$0	$19,940	$20,730	0.71%	51.43
111009	Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements	Project Execution - Design	2018	$1,726	$9,021	$9,021	$9,046	$1,236	$0	$0	$0	$19,303	$30,051	1.02%	75.68
111006	Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements	Active - Pre-Procurement - Construction	2014	$1,274	$67	$600	$960	$3,490	$6,900	$6,900	$5,750	$18,850	$25,941	0.88%	60.48
132010	West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades	Project Execution - Construction	2017	$9,058	$19,399	$16,689	$442	$0	$0	$0	$0	$17,131	$45,588	1.55%	62.63
112006	Northeast Water Treatment Plant Flocculator Replacements	Project Execution - Design	2018	$254	$0	$2,760	$2,760	$2,760	$2,760	$2,760	$0	$13,800	$14,054	0.48%	82.39
132012	Ypsilanti Booster Pumping Station Improvements	Project Execution - Design	2017	$515	$2,589	$200	$200	$2,580	$3,000	$5,000	$25,000	$10,980	$39,084	1.33%	65.03
115005	WWP WTP Building Ventilation Improvements	Project Execution - Design	2018	$563	$286	$5,400	$3,100	$2,100	$0	$0	$0	$10,600	$11,449	0.39%	92.98
132016	North Service Center Pumping Station Improvements	Active - Procurement - Design	2017	$363	$0	$500	$1,000	$1,000	$2,000	$5,000	$72,400	$9,500	$82,263	2.80%	59.40
170801	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And Southwest Water Treatment Plant	Project Execution - Design	2022	$11,458	$6,005	$6,830	$465	$0	$0	$0	$0	$7,295	$24,758	0.84%	0.00
170601	Linear System Integrity Program	Project Execution - Design	2021	$0	$1,815	$1,815	$1,820	$1,815	$1,815	$0	$0	$7,266	$9,082	0.31%	0.00
170503	Transmission System Valve Replacement	Project Execution - Construction	2017	$2,110	$1,315	$1,315	$1,315	$1,315	$1,315	$1,315	$0	$6,575	$10,000	0.34%	0.00
111001	Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements	Project Execution - Design	2010	$1,898	$1,582	$1,600	$0	$0	$0	$4,513	$59,797	$6,113	$69,390	2.36%	79.69
113006	Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements	Project Execution - Construction	2017	$204	$3,422	$4,398	$0	$0	$0	$0	$0	$4,398	$8,023	0.27%	90.58
116007	System Electrical Power Improvements	Active - Pre-Procurement - Design	2021	$0	$0	$2,230	$1,770	$0	$0	$0	$0	$4,000	$4,000	0.14%	77.12
170302	SW SCADA System Upgrade	Project Execution - Design	2017	$74	$3,905	$4,000	$0	$0	$0	$0	$0	$4,000	$7,979	0.27%	20.00
381000	Power Quality: Electric Metering Improvement Program	Active - Pre-Procurement - Design	2016	$0	$0	$567	$1,298	$759	$0	$0	$0	$2,624	$2,624	0.09%	*

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
114018	Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements	Active - Pre-Procurement - Design	2019	$0	$30	$55	$1,800	$450	$0	$0	$0	$2,305	$2,335	0.08%	62.69
116005	Belle Isle Seawall Rehabilitation	Active - Procurement - Design	2020	$0	$240	$600	$1,700	$0	$0	$0	$0	$2,300	$2,540	0.09%	63.41
111011	Lake Huron WTP Pilot Plant	Project Execution - Design	2019	$199	$1,506	$1,506	$111	$0	$0	$0	$0	$1,618	$3,323	0.11%	50.71
170500	Transmission System Valve Rehabilitation and Replacement Program	Project Execution - Construction	2017	$0	$277	$277	$278	$277	$199	$51	$3,969	$1,081	$5,327	0.18%	*
114011	Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements	Project Execution - Construction	2012	$18,465	$6,580	$808	$0	$0	$0	$0	$0	$808	$25,853	0.88%	76.99
170902	Brownstown Meter Pit	Active - Pre-Procurement - Construction	2020	$87	$390	$545	$0	$0	$0	$0	$0	$545	$1,022	0.03%	0.00
170303	Power Monitoring Installation for Water Treatment Plants	Project Execution - Design	2020	$204	$1,186	$438	$0	$0	$0	$0	$438	$438	$2,266	0.08%	0.00
170600	Water Transmission Main Asset Assessment Program	Project Execution - Design	2017	$0	$0	$10	$29	$29	$29	$29	$116	$126	$242	0.01%	*
132007	Energy Management: Freeze Protection Pump Installation at Imlay Pump Station	Project Execution - Design	2014	$927	$4,104	$115	$0	$0	$0	$0	$0	$115	$5,146	0.18%	42.15
170109	GLWA-CS-187: FK Eng: Raw Water Intake	Project Execution - Design	2012	$1,656	$49	$68	$0	$0	$0	$0	$0	$68	$1,773	0.06%	0.00
114016	Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement	Project Execution - Construction	2018	$428	$1,096	$0	$0	$0	$0	$0	$0	$0	$1,524	0.05%	71.72
122005	Schoolcraft Road Water Transmission Main	Project Execution - Construction	2016	$6,694	$8,355	$0	$0	$0	$0	$0	$0	$0	$15,049	0.51%	54.72
122006	Wick Road Water Transmission Main	Project Execution - Construction	2016	$17,133	$8,564	$0	$0	$0	$0	$0	$0	$0	$25,697	0.88%	62.93
122011	Park-Merriman Road Water Transmission Main	Project Execution - Construction	2015	$7,938	$1,380	$0	$0	$0	$0	$0	$0	$0	$9,318	0.32%	44.06
170502	Transmission System Valve Rehabilitation and Replacement Program	Project Execution - Construction	2017	$5,610	$9,782	$0	$0	$0	$0	$0	$0	$0	$15,392	0.52%	0.00
170901	Suburban Water Meter Pit Rehabilitation and Meter Replacement	Project Execution - Construction	2014	$8,531	$2,106	$0	$0	$0	$0	$0	$0	$0	$10,637	0.36%	0.00
380700	As-Needed Geotechnical and Related Engineering Services	Project Execution - Design	2006	$0	$602	$0	$0	$0	$0	$0	$0	$0	$602	0.02%	0.00
ACTIVE WATER PROJECTS TOTAL				**$191,424**	**$185,368**	**$189,635**	**$202,009**	**$205,245**	**$162,317**	**$147,320**	**$455,921**	**$1,739,239**	**$2,073,323**	59.3%	

WATER CIP PROJECTS: FUTURE PLANNED, RANKED BY PRIORITIZATION SCORE

Financial figures are in thousands of dollars ($1,000's).

Score Note: * Denotes a CIP project that is a Program. For projects with no score, see Appendix for PM Scores

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements	Future Planned - Within 5 Year Plan	2017	$224	$143	$1,000	$15,000	$4,000	$0	$0	$51,749	$20,000	$72,115	2.46%	82.15
114010	Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements	Future Planned - Ten-Year CIP	2012	$532	$572	$0	$0	$0	$0	$0	$194,586	$0	$195,689	6.67%	79.93
122019	Jefferson Main Replacement Project	Future Planned - Within 5 Year Plan	2021	$0	$655	$827	$5,558	$11,102	$11,102	$456	$0	$29,045	$29,700	1.01%	78.85
132020	Franklin Pumping Station Improvements	Future Planned - Ten-Year CIP	2018	$93	$0	$0	$0	$0	$0	$0	$4,719	$0	$4,813	0.16%	77.65
111010	Filtration Improvements	Future Planned - Ten-Year CIP	2019	$0	$0	$0	$0	$0	$0	$0	$58,433	$0	$58,433	1.99%	77.36
122007	Merriman Road Water Transmission Main Loop	Future Planned - Ten-Year CIP	2016	$2	$0	$0	$0	$0	$0	$0	$22,153	$0	$22,154	0.75%	76.75
114005	Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop	Future Planned - Ten-Year CIP	2014	$1,179	$650	$0	$0	$0	$0	$0	$8,280	$0	$10,109	0.34%	76.40
113008	SWP Reservoir Replacement	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$45,000	$0	$45,000	1.53%	75.62
115009	Water Works Park Sedimentation Basins Structural Upgrades	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$18,339	$0	$18,339	0.62%	75.32
132019	Wick Road Pumping Station Improvements	Future Planned - Ten-Year CIP	2018	$57	$0	$0	$0	$0	$0	$0	$24,604	$0	$24,661	0.84%	67.19
132014	Adams Road Pumping Station Improvements	Future Planned - Ten-Year CIP	2017	$83	$0	$0	$0	$0	$0	$0	$52,792	$0	$52,875	1.80%	65.99
132021	Imlay Pumping Station Improvements	Future Planned - Ten-Year CIP	2018	$227	$0	$0	$0	$0	$0	$0	$0	$0	$227	0.01%	59.40
132015	Newburgh Road Booster Pumping Station Improvements	Future Planned - Ten-Year CIP		$444	$543	$0	$0	$0	$0	$0	$44,096	$0	$45,083	1.54%	58.92
132018	Schoolcraft Pumping Station Improvements	Future Planned - Ten-Year CIP	2018	$47	$0	$0	$0	$0	$0	$0	$24,421	$0	$24,469	0.83%	58.92
132022	Joy Road Pumping Station Improvements	Future Planned - Ten-Year CIP	2018	$71	$0	$0	$0	$0	$0	$0	$39,613	$0	$39,685	1.35%	58.92
115007	Water Works Park High Lift Pumping Station Modernization	Future Planned - Ten-Year CIP	2021	$0	$50	$0	$0	$0	$0	$0	$96,750	$0	$96,800	3.30%	58.26
114007	Springwells Water Treatment Plant Powdered Activated Carbon System Improvements	Future Planned - Ten-Year CIP	2014	$0	$0	$0	$0	$0	$0	$0	$4,021	$0	$4,021	0.14%	56.04
116006	Belle Isle Intake System Rehabilitation and Improvements	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$3,363	$0	$3,363	0.11%	55.80

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
115006	Water Works Park Site/Civil Improvements	Future Planned - Ten-Year CIP	2019	$0	$0	$0	$0	$0	$0	$0	$5,882	$0	$5,882	0.20%	53.94
113003	Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements	Future Planned - Ten-Year CIP	2014	$0	$0	$0	$0	$0	$0	$0	$21,812	$0	$21,812	0.74%	52.39
111008	Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements	Future Planned - Ten-Year CIP	2017	$0	$0	$0	$0	$0	$0	$0	$856	$0	$856	0.03%	49.51
113007	Southwest Water Treatment Plant Architectural and Building Mechanical Improvements	Future Planned - Ten-Year CIP	2017	$0	$0	$0	$0	$0	$0	$0	$1,000	$0	$1,000	0.03%	38.74
170304	WWP Scada Infrastructure Upgrade	Future Planned - Within 5 Year Plan		$14	$187	$78	$33	$7	$0	$0	$0	$118	$319	0.01%	0.00
170305	WWP SCADA Network Upgrade	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$7,336	$0	$7,336	0.25%	0.00
170306	SPW SCADA PLC Network Upgrade	Future Planned - Within 5 Year Plan	2021	$0	$0	$1,573	$1,573	$0	$0	$0	$0	$3,146	$3,146	0.11%	0.00
170307	NE SCADA Network Upgrade	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$2,917	$0	$2,917	0.10%	0.00
170800	System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation	Future Planned - Ten-Year CIP	2016	$0	$13	$13	$13	$13	$13	$13	$51	$64	$127	0.00%	*
170803	Reservoir Inspection, Design, and Construction Management Services Phase III	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$0	$0	$500	$93,416	$500	$93,916	3.20%	0.00
171500	Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities	Future Planned - Ten-Year CIP	2018	$0	$0	$0	$0	$0	$0	$0	$15,908	$0	$15,908	0.54%	*
171502	Lake Huron and Southwest Roof Replacement	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$2,703	$0	$2,703	0.09%	0.00
170300	Water Treatment Plant Automation Program	Future Planned - Ten-Year CIP	2017	$9	$0	$0	$0	$0	$0	$0	$23,249	$0	$23,258	0.79%	*
170400	Water Transmission Improvement Program	Future Planned - Ten-Year CIP	2010	$0	$0	$0	$0	$0	$0	$0	$32,049	$0	$32,049	1.09%	*
170504	Transmission Mains Valves and Urgent	Future Planned - Within 5 Year Plan		$0	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$0	$6,250	$7,500	0.26%	0.00
170900	Suburban Water Meter Pit Rehabilitation and Meter Replacement	Future Planned - Ten-Year CIP	2014	$0	$4,037	$0	$0	$0	$0	$0	$40,000	$0	$44,037	1.50%	*
383300	Masonry Replacement and Rehabilitation Program	Future Planned - Ten-Year CIP	2020	$0	$0	$0	$0	$0	$0	$0	$25,000	$0	$25,000	0.85%	*
FUTURE PLANNED WATER PROJECTS TOTAL				**$2,982**	**$8,098**	**$4,741**	**$23,427**	**$16,371**	**$12,364**	**$2,219**	**$965,098**	**$59,122**	$1,035,301	35.28%	

WATER CIP PROJECT TOTALS

Financial figures are in thousands of dollars ($1,000's).

TITLE	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP
Active Water Projects Total	$191,424	$185,368	$189,635	$202,009	$205,245	$162,317	$147,320	$455,921	$1,739,239	$2,073,323	59.3%
Pending Closeout Water Projects Total	$23,792	$3,525	$0	$0	$0	$0	$0	$0	$0	$27,318	0.93%
Future Planned Water Projects Total	$2,982	$8,098	$4,741	$23,427	$16,371	$12,364	$2,219	$965,098	$59,122	$1,035,301	35.28%
Listed as Cancelled/Closed/Reclassified	$132,848	$39	$0	$0	$0	$0	$0	$0	$0	$132,887	4.53%
WATER PROJECTS TOTAL	**$351,047**	**$197,030**	**$194,376**	**$225,436**	**$221,616**	**$174,681**	**$149,539**	**$1,421,019**	**$965,648**	**$2,934,745**	**100%**

3.5. Wastewater Projects by Status

All financial figures are in thousands of dollars ($1,000's). The Project Status column shows which projects are Active (A), Future Planned (FP), or Pending Closeout (PC). Projects that have been Reclassified to a different number, Closed, or Cancelled are not shown in this list; a list of Closed projects can be found in Section 2.2. For projects in the "Centralized Services" category (CIP number begins with 3), only portions of projects funded by the wastewater planned spend are included in this section.

WASTEWATER CIP PROJECTS: ACTIVE, RANKED BY 5-YEAR CIP TOTAL

Financial figures are in thousands of dollars ($1,000's).
Score Note: * Denotes a CIP project that is a Program. For projects with no score, see Appendix for PM Scores

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
232002	Freud & Conner Creek Pump Station Improvements	Project Execution - Design	2016	$10,560	$3,780	$10,753	$19,818	$32,653	$32,692	$30,177	$122,364	$126,095	$262,798	8.46%	94.06
211007	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements	Project Execution - Design	2016	$1,509	$3,000	$2,461	$13,104	$13,104	$13,104	$13,104	$29,383	$54,878	$88,771	2.86%	75.68
211006	WRRF PS No. 1 Improvements	Project Execution - Design	2016	$3,492	$600	$8,100	$10,136	$10,136	$10,136	$10,136	$17,305	$48,645	$70,042	2.25%	78.56
260701	Conveyance System Infrastructure Improvements	Active - Procurement - Construction	2021	$1,384	$5,774	$15,639	$17,041	$11,793	$4,000	$0	$0	$48,473	$55,631	1.79%	60.12
260204	Conveyance System Engineering Services-1802575	Project Execution - Design	2013	$944	$1,276	$11,168	$18,358	$18,307	$0	$0	$0	$47,833	$50,053	1.61%	0.00
212008	WRRF Aeration Improvements 1 and 2	Project Execution - Design	2017	$583	$0	$0	$1,500	$13,283	$13,283	$13,069	$32,165	$41,136	$73,884	2.38%	76.28
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	Project Execution - Design	2014	$475	$1,182	$1,182	$1,185	$10,818	$14,123	$13,003	$11,497	$40,311	$53,466	1.72%	62.69
216008	Rehabilitation of Screened Final Effluent (SFE) Pump Station	Project Execution - Design	2018	$262	$1,500	$2,510	$10,848	$10,848	$14,258	$0	$0	$38,464	$40,226	1.29%	63.23
260200	Sewer and Interceptor Rehabilitation Program	Project Execution - Construction	2013	$0	$4,911	$6,604	$6,644	$5,793	$5,793	$1,100	$35,000	$25,935	$65,845	2.12%	*
260510	Conveyance System Repairs (Outfalls)	Project Execution - Design	2020	$35	$856	$1,340	$1,771	$5,000	$6,752	$6,752	$13,319	$21,616	$35,825	1.15%	0.00
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation	Project Execution - Construction	2016	$37,098	$10,472	$9,415	$3,060	$3,046	$3,046	$3,046	$8,000	$21,614	$77,184	2.48%	66.41
260206	Conveyance System Repairs (Sewers)	Project Execution - Design	2020	$22	$5,149	$2,149	$3,000	$5,163	$5,149	$5,149	$9,488	$20,611	$35,270	1.13%	0.00
216006	Assessment and Rehabilitation of WRRF yard piping and underground utilities	Project Execution - Design	2017	$1,039	$206	$2,963	$9,432	$7,468	$0	$0	$0	$19,863	$21,108	0.68%	78.98

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
260207	Rehabilitation of Woodward Sewer Systems	Project Execution - Construction	2021	$1,229	$3,371	$4,849	$4,862	$4,849	$0	$0	$0	$14,559	$19,160	0.62%	76.82
260209	Sewer Rehabilitation and Repair	Active - Procurement - Construction	2021	$0	$0	$4,504	$5,863	$1,833	$0	$0	$0	$12,200	$12,200	0.39%	61.32
277001	Baby Creek Outfall Improvements Project	Active - Procurement - Design	2019	$1,069	$218	$1,250	$2,600	$2,600	$2,600	$2,400	$550	$11,450	$13,287	0.43%	80.11
270004	Oakwood and Leib CSO Facilities Improvement Project	Active - Procurement - Design	2020	$4	$0	$1,250	$1,300	$1,250	$3,630	$3,850	$5,720	$11,280	$17,004	0.55%	79.40
216011	WRRF Structural Improvements	Active - Pre-Procurement - Design	2020	$0	$0	$400	$2,488	$2,488	$2,488	$2,488	$1,050	$10,350	$11,400	0.37%	64.43
260205	NWI Rehabilitation	Active - Procurement - Construction	2021	$267	$37	$5,044	$5,030	$0	$0	$0	$0	$10,074	$10,379	0.33%	60.30
260500	CSO Outfall Rehabilitation	Active - Procurement - Construction	2017	$0	$11,642	$1,642	$1,646	$1,642	$1,642	$1,642	$1,646	$8,212	$21,500	0.69%	*
260614	Structural Inspection & Structural Improvements	Project Execution - Construction	2017	$2,537	$3,101	$3,101	$3,109	$1,742	$0	$0	$0	$7,952	$13,590	0.44%	20.00
260600	CSO FACILITIES IMPROVEMENT PROGRAM	Project Execution - Design	2017	$0	$1,000	$1,500	$1,500	$1,500	$1,500	$1,500	$1,037,000	$7,500	$1,045,500	33.64%	*
213006	WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities	Project Execution - Design	2016	$194	$400	$750	$2,417	$1,667	$1,667	$0	$0	$6,500	$7,094	0.23%	76.64
260617	St. Aubin Chemical Disinfection Improvements	Active - Procurement - Design	2017	$417	$264	$275	$1,925	$1,925	$1,650	$0	$0	$5,775	$6,456	0.21%	20.00
260619	Control System Upgrade - St Aubin, Lieb & Mile	Active - Procurement - Design	2017	$63	$2,116	$2,116	$2,122	$1,218	$0	$0	$0	$5,456	$7,635	0.25%	0.00
260508	B-39 Outfall Rehabilitation	Active - Procurement - Negotiation Phase - Construction	2021	$150	$3,214	$5,392	$0	$0	$0	$0	$0	$5,392	$8,755	0.28%	0.00
260800	WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM	Project Execution - Design	2018	$0	$0	$1,891	$1,891	$1,218	$0	$0	$0	$5,000	$5,000	0.16%	*
260201	CON-149, Emergency Sewer Repair	Project Execution - Construction	2013	$29,105	$6,096	$3,051	$0	$0	$0	$0	$0	$3,051	$38,252	1.23%	0.00
270003	Long Term CSO Control Plan	Project Execution - Design	2019	$2,130	$3,162	$2,519	$285	$153	$0	$0	$0	$2,957	$8,249	0.27%	88.00

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
260902	WRRF 4th Floor Renovation	Active - Procurement - Design	2021	$49	$0	$2,671	$0	$0	$0	$0	$0	$2,671	$2,721	0.09%	59.52
211008	WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines	Project Execution - Construction	2017	$1,871	$8,267	$2,506	$0	$0	$0	$0	$0	$2,506	$12,644	0.41%	78.26
260623	CSO Baby Creek Screen Rehabilitation	Active - Procurement - Construction	2021	$0	$20	$1,078	$1,078	$0	$0	$0	$0	$2,155	$2,175	0.07%	93.22
260622	CSO Emergency Generator Improvements	Active - Procurement - Construction	2021	$1	$40	$1,220	$800	$0	$0	$0	$0	$2,020	$2,061	0.07%	77.48
260702	Pump Station Assets Updates	Active - Pre-Procurement - Construction	2022	$0	$0	$0	$665	$667	$667	$0	$0	$2,000	$2,000	0.06%	59.64
260901	Rehabilitation of HAZMAT Facility at WRRF	Active - Procurement - Design	2022	$131	$0	$1,274	$0	$0	$0	$0	$0	$1,274	$1,405	0.05%	52.09
260903	WRRF Front Entrance Rehabilitation	Project Execution - Design	2021	$0	$0	$1,005	$0	$0	$0	$0	$0	$1,005	$1,005	0.03%	52.39
260618	Oakwood HVAC Project	Project Execution - Construction	2017	$371	$5,223	$498	$0	$0	$0	$0	$0	$498	$6,091	0.20%	20.00
260700	Sewer System Infrastructure Improvements and Pumping Stations	Project Execution - Design	2017	$0	$75	$75	$75	$75	$75	$75	$75	$376	$526	0.02%	67.13*
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	Project Execution - Construction	2011	$30,372	$9,346	$38	$0	$0	$0	$0	$0	$38	$39,756	1.28%	0.00
211001	WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	Project Execution - Construction	1999	$54,749	$220	$0	$0	$0	$0	$0	$0	$0	$54,968	1.77%	0.00
211002	WRRF PS No. 2 Pumping Improvements - Phase 1	Project Execution - Construction	2003	$2,517	$946	$0	$0	$0	$0	$0	$0	$0	$3,463	0.11%	0.00
213007	WRRF Modification to Incinerator Sludge Feed Systems at Complex -II	Project Execution - Construction	2016	$20,120	$3,690	$0	$0	$0	$0	$0	$0	$0	$23,810	0.77%	96.22
214001	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations	Project Execution - Construction	2014	$14,232	$50	$0	$0	$0	$0	$0	$0	$0	$14,282	0.46%	88.48
216004	Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF	Project Execution - Construction	2010	$3,071	$2,210	$0	$0	$0	$0	$0	$0	$0	$5,281	0.17%	94.66
260504	Phase 2 Outfalls- 19000796	Project Execution - Construction	2017	$4,901	$141	$0	$0	$0	$0	$0	$0	$0	$5,042	0.16%	0.00

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
260603	Conner Creek CSO RTB Automation Improvements	Project Execution - Construction	2017	$7,518	$657	$0	$0	$0	$0	$0	$0	$0	$8,175	0.26%	20.00
260613	Baby Creek HVAC Improvements	Project Execution - Construction	2017	$530	$74	$0	$0	$0	$0	$0	$0	$0	$604	0.02%	20.00
260615	Puritan Fenkell & Leib Site Improvements	Project Execution - Construction	2017	$382	$377	$0	$0	$0	$0	$0	$0	$0	$759	0.02%	0.00
260620	Baby Creek Roof Replacement	Project Execution - Construction	2021	$26	$1,022	$0	$0	$0	$0	$0	$0	$0	$1,047	0.03%	78.80
260621	Conner Creek Dike Improvements	Project Execution - Construction	2021	$284	$2,258	$0	$0	$0	$0	$0	$0	$0	$2,542	0.08%	95.20
ACTIVE WASTEWATER PROJECTS TOTAL				**$235,693**	**$107,941**	**$124,184**	**$155,554**	**$172,241**	**$138,256**	**$107,492**	**$1,324,563**	**$697,726**	**$2,365,923**	**76.13%**	

WASTEWATER CIP PROJECTS: FUTURE PLANNED, RANKED BY PRIORITIZATION SCORE

Financial figures are in thousands of dollars ($1,000's).

Score Note: * Denotes a CIP project that is a Program. For projects with no score, see Appendix for PM Scores

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
211010	Rehabilitation of Sludge Processing Complexes A and B	Future Planned - Within 5 Year Plan	2019	$94	$0	$0	$0	$0	$920	$920	$17,960	$1,840	$19,894	0.64%	89.68
212010	WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite	Future Planned - Ten-Year CIP	2019	$0	$0	$0	$0	$0	$0	$0	$5,456	$0	$5,456	0.18%	89.68
270001	Pilot CSO Netting Facility	Future Planned - Within 5 Year Plan	2019	$0	$0	$0	$345	$345	$348	$111	$5,049	$1,150	$6,199	0.20%	89.56
270002	Meldrum Sewer Diversion and VR-15 Improvements	Future Planned - Within 5 Year Plan	2019	$0	$0	$0	$0	$224	$436	$1,419	$3,761	$2,079	$5,840	0.19%	88.72
233003	Rouge River In-system Storage Devices	Future Planned - Within 5 Year Plan	2019	$0	$0	$0	$233	$1,000	$1,229	$1,229	$42,626	$3,691	$46,317	1.49%	88.24
213009	WRRF Biosolids Processing Improvements	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$0	$2,700	$4,000	$173,300	$6,700	$180,000	5.79%	79.58
211011	WRRF PS1 Screening and Grit Improvements	Future Planned - Ten-Year CIP	2019	$0	$0	$0	$0	$0	$0	$0	$93,000	$0	$93,000	2.99%	77.47
211005	WRRF PS No. 2 Improvements Phase II	Future Planned - Within 5 Year Plan	2014	$2	$0	$0	$2,333	$2,333	$2,333	$0	$60,000	$7,000	$67,002	2.16%	77.42

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
211009	WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System	Future Planned - Within 5 Year Plan	2017	$40	$250	$1,000	$500	$5,000	$5,000	$5,000	$5,000	$16,500	$21,790	0.70%	76.63
212009	WRRF Aeration Improvements 3 and 4	Future Planned - Ten-Year CIP	2019	$0	$0	$0	$0	$0	$0	$0	$66,983	$0	$66,983	2.16%	76.28
273001	Hubbell Southfield CSO Facility Improvements	Future Planned - Within 5 Year Plan	2021	$0	$0	$533	$1,600	$1,600	$1,800	$3,344	$29,700	$8,876	$38,576	1.24%	75.68
270008	Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$151	$268	$285	$6,303	$704	$7,007	0.23%	74.42
277002	Baby Creek CSO Facility Influent Flushing System	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$738	$0	$738	0.02%	72.26
261001	WRRF Rehabilitation of the Secondary Clarifiers Phase 1	Future Planned - Within 5 Year Plan	2017	$0	$0	$0	$790	$790	$395	$2,056	$0	$4,030	$4,030	0.13%	71.96
270014	Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$4,442	$0	$4,442	0.14%	71.96
270011	HVAC Improvements at Conner Creek and Belle Isle CSO Facilities	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$384	$0	$384	0.01%	70.46
270005	CSO Facility Safety Improvements and Building Rehabilitation	Future Planned - Within 5 Year Plan	2021	$0	$0	$122	$356	$300	$1,430	$2,420	$1,854	$4,628	$6,481	0.21%	69.02
270006	Control System Upgrades at Baby Creek and Belle Isle CSO Facilities	Future Planned - Within 5 Year Plan	2021	$0	$0	$93	$134	$134	$495	$495	$564	$1,351	$1,916	0.06%	61.02
213008	WRRF Rehabilitation of the Ash Handling Systems	Future Planned - Within 5 Year Plan	2017	$151	$0	$0	$0	$0	$500	$500	$5,200	$1,000	$6,351	0.20%	59.46
270012	Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$0	$0	$147	$5,774	$147	$5,921	0.19%	58.98
270010	HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$40	$70	$70	$295	$1,033	$476	$1,509	0.05%	57.84
270007	Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$335	$1,508	$1,508	$4,866	$3,350	$8,216	0.26%	57.00
270013	Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities	Future Planned - Ten-Year CIP	2021	$0	$0	$0	$0	$0	$0	$0	$894	$0	$894	0.03%	56.82
270009	Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$0	$0	$37	$1,341	$37	$1,378	0.04%	54.60
273002	CSO Hubbell Southfield VR-8 Gate Improvements	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$0	$0	$0	$50	$1,719	$50	$1,770	0.06%	50.18
260900	WRRF Facility Optimization Program	Future Planned - Within 5 Year Plan	2021	$0	$0	$0	$429	$0	$0	$0	$0	$429	$429	0.01%	*
232004	CONDITION ASSESSMENT AT BLUE HILL PUMP STATION	Future Planned - Within 5 Year Plan	2019	$0	$257	$0	$0	$0	$0	$0	$0	$0	$257	0.01%	0.00

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP	PRIORITIZATION SCORE (RC)
261000	WRRF Rehabilitation of the Secondary Clarifiers	Future Planned - Within Ten-Year Plan	2017	$0	$0	$0	$0	$0	$0	$0	$46,827	$0	$46,827	1.51%	*
FUTURE PLANNED WASTEWATER PROJECTS TOTAL				**$287**	**$507**	**$1,748**	**$6,759**	**$12,282**	**$19,433**	**$23,816**	**$584,774**	**$64,038**	**$649,607**	**20.90%**	

WASTEWATER CIP PROJECT TOTALS

Financial figures are in thousands of dollars ($1,000's).

TITLE	LIFETIME ACTUAL THRU FY 2021 (UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL	PERCENT OF W/S CIP
Active Wastewater Projects Total	$235,693	$107,941	$124,184	$155,554	$172,241	$138,256	$107,492	$1,324,563	$697,726	$2,365,923	76.13%
Pending Closeout Wastewater Projects Total	$5,813	$0	$0	$0	$0	$0	$0	$0	$0	$5,813	0.19%
Future Planned Wastewater Projects Total	$287	$507	$1,748	$6,759	$12,282	$19,433	$23,816	$584,774	$64,038	$649,607	20.90%
Listed as Cancelled/Closed/Reclassified	$85,601	$775	$0	$0	$0	$0	$0	$0	$0	$86,376	2.78%
WASTEWATER PROJECTS TOTAL	**$327,394**	**$109,223**	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$1,909,338**	**$761,764**	**$3,107,719**	**100%**

3.6. Centralized Services Projects

All financial figures are in thousands of dollars ($1,000's). The planned spend column denotes whether this item is funded by the Water (W) or Wastewater (S). The Project Status column shows which projects are Active (A), Future Planned (FP), or Pending Closeout (PC). Projects that have been Reclassified to a different number, Closed, or Cancelled are not shown in this list; a list of Closed projects can be found in Section 2.2

CENTRALIZED SERVICES CIP PROJECTS

Financial figures are in thousands of dollars ($1,000's).

CIP#	TITLE	PROJECT STATUS	YEAR ADDED	LIFETIME ACTUAL THRU FY 2021(UNAUDITED)	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028 & BEYOND	2023-2027 CIP TOTAL	PROJECT TOTAL
WATER													
331003	Masonry Replacement and Rehabilitation	Cancelled	2019	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
341001	Security Infrastructure Improvements on Water Facilities	Pending Closeout	2017	$4,179	$60	$0	$0	$0	$0	$0	$0	$0	$4,239
351001	LED Lighting and Lighting Control Improvements	Cancelled	2006	$7	$0	$0	$0	$0	$0	$0	$0	$0	$7
380700	As-Needed Geotechnical and Related Engineering Services	Project Execution - Design	2016	$0	$602	$0	$0	$0	$0	$0	$0	$0	$602
381000	Power Quality: Electric Metering Improvement Program	Active - Pre-Procurement - Design	2020	$0	$0	$567	$1,298	$759	$0	$0	$0	$2,624	$2,624
383300	Masonry Replacement and Rehabilitation Program	Future Planned - Ten-Year CIP		$0	$0	$0	$0	$0	$0	$0	$25,000	$0	$25,000
WASTEWATER													
341002	Security Infrastructure Improvements for Wastewater Facilities	Pending Closeout	2019	$1,901	$0	$0	$0	$0	$0	$0	$0	$0	$1,901
FUTURE PLANNED CENTRALIZED SERVICES PROJECTS TOTAL				**$6,086**	**$662**	**$567**	**$1,298**	**$759**	**$0**	**$0**	**$25,000**	**$2,624**	**$34,372**

3.7. Ten-Year Water Outlook

In this section, you will find ten-year outlooks for CIP projects. These ten-year outlooks rely heavily on input from long-term needs assessments, master plans, and condition assessment documents. The planning horizon for these outlooks extend from FY2023 through FY2032. Projects within the 2023-2027 CIP that carry over into the FY2028+ are shown within the following tables by the anticipated fiscal year in which projected expenditures are anticipated.

Only project-level data will be provided within these outlooks. These are subject to change and are based upon the best available data at the time of compiling this report.
The primary source of longer-term projects used for the 10-Year Water Outlook are from the 2015 Water Master Plan.
In addition, it is anticipated that most programs will continue into the ten-year horizon. The project-level data can be seen below.
In addition, a graphical representation of this summary is shown below.

WATER 10-YEAR OUTLOOK PROJECTS

Financial figures are in thousands of dollars ($1,000's).

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
114002	$281,908	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	$14,472	$12,000	$20,000	$25,952	$25,000	$26,000	$34,401	$35,514	$26,444	$24,590	$24,590	$108,952	$145,539	$254,491
122004	$259,843	96-inch Water Transmission Main Relocation and Isolation Valve Installations	$8,533	$15,000	$40,000	$40,000	$40,000	$35,000	$35,000	$36,636	$0	$0	$0	$170,000	$71,636	$241,636
114010	$195,689	Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements	$572	$0	$0	$0	$0	$0	$817	$1,878	$3,352	$4,046	$14,219	$0	$24,311	$24,311
122003	$147,768	Water Works Park to Northeast Transmission Main	$7,089	$23,904	$19,122	$19,069	$19,069	$19,069	$19,122	$0	$0	$0	$0	$100,233	$19,122	$119,355
122013	$111,420	14 Mile Transmission Main Loop	$26,882	$29,636	$29,216	$15,223	$0	$0	$0	$0	$0	$0	$0	$74,075	$0	$74,075
116002	$98,986	Pennsylvania and Springwells Raw Water Supply Tunnel Improvements	$13,663	$13,663	$13,701	$13,663	$13,663	$0	$0	$0	$0	$0	$0	$54,690	$0	$54,690

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
115007	$96,800	Water Works Park High Lift Pumping Station Modernization	$50	$0	$0	$0	$0	$0	$2,650	$2,000	$2,000	$9,300	$22,400	$0	$38,350	$38,350
170803	$93,916	Reservoir Inspection, Design, and Construction Management Services Phase III	$0	$0	$0	$0	$0	$500	$7,488	$17,900	$20,221	$18,600	$15,479	$500	$79,688	$80,188
132016	$82,263	North Service Center Pumping Station Improvements	$0	$500	$1,000	$1,000	$2,000	$5,000	$20,000	$20,000	$17,400	$15,000	$0	$9,500	$72,400	$81,900
112003	$72,115	Northeast Water Treatment Plant High-Lift Pumping Station Improvements	$143	$1,000	$15,000	$4,000	$0	$0	$1,134	$12,456	$14,014	$13,541	$10,604	$20,000	$51,749	$71,749
111001	$69,390	Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements	$1,582	$1,600	$0	$0	$0	$4,513	$12,984	$8,377	$11,387	$10,057	$6,146	$6,113	$48,951	$55,065
122016	$62,962	Downriver Transmission Main Loop	$2,226	$7,500	$15,000	$15,000	$5,000	$5,000	$11,615	$0	$0	$0	$0	$47,500	$11,615	$59,115
122017	$60,729	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	$1,023	$1,023	$3,401	$11,857	$11,857	$11,857	$11,889	$6,367	$0	$0	$0	$39,995	$18,257	$58,251
111010	$58,433	Filtration Improvements	$0	$0	$0	$0	$0	$0	$1,558	$3,115	$3,115	$265	$6,607	$0	$14,661	$14,661
115001	$55,042	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	$11,790	$11,790	$11,822	$11,790	$2,100	$0	$0	$0	$0	$0	$0	$37,502	$0	$37,502
122018	$53,938	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	$1,999	$1,999	$2,004	$9,582	$9,582	$9,582	$9,608	$9,582	$0	$0	$0	$32,749	$19,190	$51,939
132014	$52,875	Adams Road Pumping Station Improvements	$0	$0	$0	$0	$0	$0	$882	$882	$885	$882	$882	$0	$4,413	$4,413
132010	$45,588	West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades	$19,399	$16,689	$442	$0	$0	$0	$0	$0	$0	$0	$0	$17,131	$0	$17,131
132015	$45,083	Newburgh Road Booster Pumping Station Improvements	$543	$0	$0	$0	$0	$0	$543	$6,881	$12,224	$12,224	$12,224	$0	$44,096	$44,096
113008	$45,000	SWP Reservoir Replacement	$0	$0	$0	$0	$0	$0	$695	$874	$9,400	$11,641	$11,673	$0	$34,284	$34,284

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
170900	$44,037	Suburban Water Meter Pit Rehabilitation and Meter Replacement	$4,037	$0	$0	$0	$0	$0	$4,000	$4,000	$4,000	$4,000	$4,000	$0	$20,000	$20,000
170802	$41,500	Reservoir Inspection, Design, and Construction Management Services Phase II	$500	$8,000	$9,000	$8,000	$8,000	$8,000	$0	$0	$0	$0	$0	$41,000	$0	$41,000
132022	$39,685	Joy Road Pumping Station Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
132012	$39,084	Ypsilanti Booster Pumping Station Improvements	$2,589	$200	$200	$2,580	$3,000	$5,000	$13,000	$12,000	$0	$0	$0	$10,980	$25,000	$35,980
111012	$32,079	LHWTP-Flocculation Improvements	$936	$2,113	$1,799	$8,447	$8,447	$7,244	$3,092	$0	$0	$0	$0	$28,049	$3,092	$31,141
170400	$32,049	Water Transmission Improvement Program	$0	$0	$0	$0	$0	$0	$1,037	$1,040	$1,037	$60	$57	$0	$3,232	$3,232
111009	$30,051	Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improvements	$9,021	$9,021	$9,046	$1,236	$0	$0	$0	$0	$0	$0	$0	$19,303	$0	$19,303
122019	$29,700	Jefferson Main Replacement Project	$655	$827	$5,558	$11,102	$11,102	$456	$0	$0	$0	$0	$0	$29,045	$0	$29,045
111006	$25,941	Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements	$67	$600	$960	$3,490	$6,900	$6,900	$5,750	$0	$0	$0	$0	$18,850	$5,750	$24,600
114011	$25,853	Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements	$6,580	$808	$0	$0	$0	$0	$0	$0	$0	$0	$0	$808	$0	$808
122006	$25,697	Wick Road Water Transmission Main	$8,564	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
383300	$25,000	Masonry Replacement and Rehabilitation Program	$0	$0	$0	$0	$0	$0	$4,997	$5,011	$4,997	$4,997	$4,997	$0	$25,000	$25,000
170801	$24,758	Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Springwells Water Treatment Plant, And	$6,005	$6,830	$465	$0	$0	$0	$0	$0	$0	$0	$0	$7,295	$0	$7,295

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
		Southwest Water Treatment Plant														
132019	$24,661	Wick Road Pumping Station Improvements	$0	$0	$0	$0	$0	$0	$183	$711	$799	$2,804	$576	$0	$5,072	$5,072
132018	$24,469	Schoolcraft Pumping Station Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
170300	$23,258	Water Treatment Plant Automation Program	$0	$0	$0	$0	$0	$0	$7,025	$7,044	$7,025	$2,156	$0	$0	$23,249	$23,249
122007	$22,154	Merriman Road Water Transmission Main Loop	$0	$0	$0	$0	$0	$0	$184	$647	$647	$4,978	$4,991	$0	$11,447	$11,447
113003	$21,812	Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements	$0	$0	$0	$0	$0	$0	$0	$7,271	$7,271	$7,271	$0	$0	$21,812	$21,812
114017	$20,730	Springwells Water Treatment Plant Flocculator Drive Replacements	$600	$660	$8,850	$8,850	$1,580	$0	$0	$0	$0	$0	$0	$19,940	$0	$19,940
115009	$18,339	Water Works Park Sedimentation Basins Structural Upgrades	$0	$0	$0	$0	$0	$0	$3,297	$5,155	$5,141	$4,747	$0	$0	$18,339	$18,339
171500	$15,908	Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities	$0	$0	$0	$0	$0	$0	$825	$2,430	$2,430	$2,430	$2,012	$0	$10,128	$10,128
170502	$15,392	Transmission System Valve Rehabilitation and Replacement Program	$9,782	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
122005	$15,049	Schoolcraft Road Water Transmission Main	$8,355	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
112006	$14,054	Northeast Water Treatment Plant Flocculator Replacements	$0	$2,760	$2,760	$2,760	$2,760	$2,760	$0	$0	$0	$0	$0	$13,800	$0	$13,800
114008	$13,980	Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements	$2,815	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
115005	$11,449	WWP WTP Building Ventilation Improvements	$286	$5,400	$3,100	$2,100	$0	$0	$0	$0	$0	$0	$0	$10,600	$0	$10,600

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
170901	$10,637	Suburban Water Meter Pit Rehabilitation and Meter Replacement	$2,106	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
114005	$10,109	Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop	$650	$0	$0	$0	$0	$0	$0	$0	$3,600	$3,450	$1,230	$0	$8,280	$8,280
170503	$10,000	Transmission System Valve Replacement	$1,315	$1,315	$1,315	$1,315	$1,315	$1,315	$0	$0	$0	$0	$0	$6,575	$0	$6,575
122011	$9,318	Park-Merriman Road Water Transmission Main	$1,380	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
111007	$9,099	Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	$651	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
170601	$9,082	Linear System Integrity Program	$1,815	$1,815	$1,820	$1,815	$1,815	$0	$0	$0	$0	$0	$0	$7,266	$0	$7,266
113006	$8,023	Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements	$3,422	$4,398	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,398	$0	$4,398
170302	$7,979	SW SCADA System Upgrade	$3,905	$4,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,000	$0	$4,000
170504	$7,500	Transmission Mains Valves and Urgent	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$0	$0	$0	$0	$0	$6,250	$0	$6,250
170305	$7,336	WWP SCADA Network Upgrade	$0	$0	$0	$0	$0	$0	$1,834	$3,668	$1,834	$0	$0	$0	$7,336	$7,336
115006	$5,882	Water Works Park Site/Civil Improvements	$0	$0	$0	$0	$0	$0	$390	$1,834	$1,829	$1,829	$0	$0	$5,882	$5,882
170500	$5,327	Transmission System Valve Rehabilitation and Replacement Program	$277	$277	$278	$277	$199	$51	$367	$1,163	$1,220	$1,220	$0	$1,081	$3,969	$5,051
132007	$5,146	Energy Management: Freeze Protection Pump Installation at Imlay Pump Station	$4,104	$115	$0	$0	$0	$0	$0	$0	$0	$0	$0	$115	$0	$115
132020	$4,813	Franklin Pumping Station Improvements	$0	$0	$0	$0	$0	$0	$663	$1,352	$1,352	$1,352	$0	$0	$4,719	$4,719

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
341001	$4,239	Security Infrastructure Improvements on Water Facilities	$60	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
114007	$4,021	Springwells Water Treatment Plant Powdered Activated Carbon System Improvements	$0	$0	$0	$0	$0	$0	$0	$477	$1,977	$1,567	$0	$0	$4,021	$4,021
116007	$4,000	System Electrical Power Improvements	$0	$2,230	$1,770	$0	$0	$0	$0	$0	$0	$0	$0	$4,000	$0	$4,000
116006	$3,363	Belle Isle Intake System Rehabilitation and Improvements	$0	$0	$0	$0	$0	$0	$338	$225	$600	$1,400	$800	$0	$3,363	$3,363
111011	$3,323	Lake Huron WTP Pilot Plant	$1,506	$1,506	$111	$0	$0	$0	$0	$0	$0	$0	$0	$1,618	$0	$1,618
170306	$3,146	SPW SCADA PLC Network Upgrade	$0	$1,573	$1,573	$0	$0	$0	$0	$0	$0	$0	$0	$3,146	$0	$3,146
170307	$2,917	NE SCADA Network Upgrade	$0	$0	$0	$0	$0	$0	$0	$0	$1,459	$1,459	$0	$0	$2,917	$2,917
171502	$2,703	Lake Huron and Southwest Roof Replacement	$0	$0	$0	$0	$0	$0	$0	$1,622	$1,081	$0	$0	$0	$2,703	$2,703
381000	$2,624	Power Quality: Electric Metering Improvement Program	$0	$567	$1,298	$759	$0	$0	$0	$0	$0	$0	$0	$2,624	$0	$2,624
116005	$2,540	Belle Isle Seawall Rehabilitation	$240	$600	$1,700	$0	$0	$0	$0	$0	$0	$0	$0	$2,300	$0	$2,300
114018	$2,335	Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements	$30	$55	$1,800	$450	$0	$0	$0	$0	$0	$0	$0	$2,305	$0	$2,305
170303	$2,266	Power Monitoring Installation for Water Treatment Plants	$1,186	$438	$0	$0	$0	$0	$438	$0	$0	$0	$0	$438	$438	$876
170109	$1,773	GLWA-CS-187: FK Eng: Raw Water Intake	$49	$68	$0	$0	$0	$0	$0	$0	$0	$0	$0	$68	$0	$68
114016	$1,524	Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement	$1,096	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
170902	$1,022	Brownstown Meter Pit	$390	$545	$0	$0	$0	$0	$0	$0	$0	$0	$0	$545	$0	$545
113007	$1,000	Southwest Water Treatment Plant	$0	$0	$0	$0	$0	$0	$0	$0	$471	$529	$0	$0	$1,000	$1,000

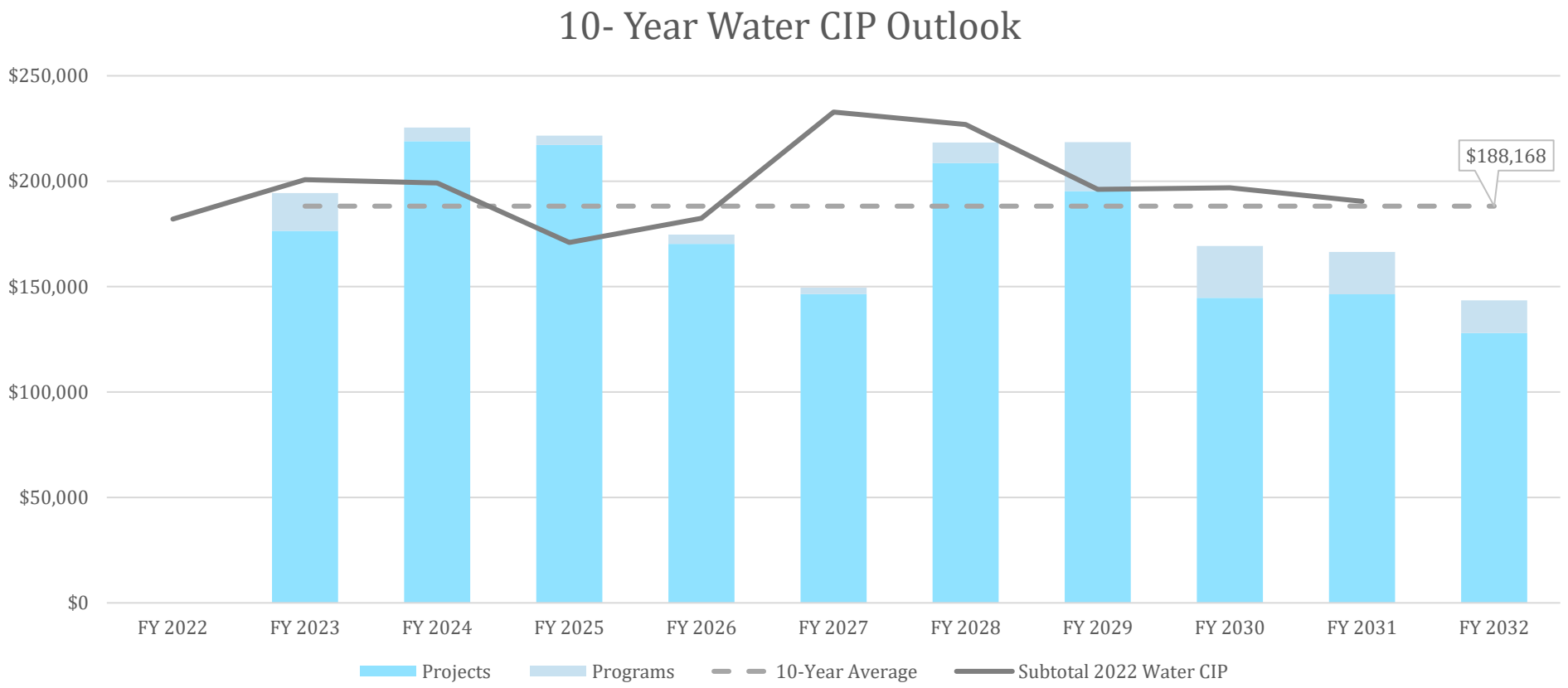
CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
		Architectural and Building Mechanical Improvements														
111008	$856	Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements	$0	$0	$0	$0	$0	$0	$507	$349	$0	$0	$0	$0	$856	$856
380700	$602	As-Needed Geotechnical and Related Engineering Services	$602	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
170304	$319	WWP Scada Infrastructure Upgrade	$187	$78	$33	$7	$0	$0	$0	$0	$0	$0	$0	$118	$0	$118
170600	$242	Water Transmission Main Asset Assessment Program	$0	$10	$29	$29	$29	$29	$29	$29	$29	$29	$0	$126	$116	$242
132021	$227	Imlay Pumping Station Improvements	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
170800	$127	System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation	$13	$13	$13	$13	$13	$13	$13	$13	$13	$13	$0	$64	$51	$115
TOTALS			**$196,992**	**$194,376**	**$225,436**	**$221,616**	**$174,681**	**$149,539**	**$218,354**	**$218,503**	**$169,253**	**$166,436**	**$143,489**	**$965,648**	**$916,036**	**$1,881,683**

10-YEAR WATER CIP OUTLOOK

Financial figures are in thousands of dollars ($1,000's).

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
Projects	$176,463	$218,980	$217,229	$170,301	$146,474	$208,594	$195,313	$144,658	$146,377	$128,010
Programs	$17,912	$6,456	$4,387	$4,380	$3,065	$9,760	$23,190	$24,595	$20,059	$15,479
Total	**$194,376**	**$225,436**	**$221,616**	**$174,681**	**$149,539**	**$218,354**	**$218,503**	**$169,253**	**$166,436**	**$143,489**

10-YEAR GRAND TOTAL: $1,881,683,405



3.8. Ten-Year Wastewater Outlook

In this section, you will find ten-year outlooks for CIP projects. These ten-year outlooks rely heavily on input from long-term needs assessments, master plans, and condition assessment documents. The planning horizon for these outlooks extend from FY2023 through FY2032. Projects within the 2023-2027 CIP that carry over into the FY2028+ are shown within the following tables by the anticipated fiscal year in which projected expenditures are anticipated.
Only project level data will be provided within these outlooks. These are subject to change and are based upon the best available data at the time of compiling this report.

The primary source of long-term projects used for the 10-Year Wastewater Outlook are from the Regional Wastewater Master Plan Assessment and various condition assessments that have been performed. The project-level data used in the development of this outlook can be seen below.
In addition, a graphical representation of this summary is shown below.
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WASTEWATER 10-YEAR OUTLOOK PROJECTS

Financial figures are in thousands of dollars ($1,000's).

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
260600	$1,045,500	CSO FACILITIES IMPROVEMENT PROGRAM	$1,000	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$13,500	$18,000	$12,500	$7,500	$47,000	$54,500
232002	$262,798	Freud & Conner Creek Pump Station Improvements	$3,780	$10,753	$19,818	$32,653	$32,692	$30,177	$34,270	$34,094	$27,500	$26,500	$0	$126,095	$122,364	$248,459
213009	$180,000	WRRF Biosolids Processing Improvements	$0	$0	$0	$0	$2,700	$4,000	$4,000	$4,000	$4,000	$10,183	$17,767	$6,700	$39,950	$46,650
211011	$93,000	WRRF PS1 Screening and Grit Improvements	$0	$0	$0	$0	$0	$0	$3,947	$3,947	$3,947	$16,152	$12,994	$0	$40,988	$40,988
211007	$88,771	WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements	$3,000	$2,461	$13,104	$13,104	$13,104	$13,104	$13,104	$16,279	$0	$0	$0	$54,878	$29,383	$84,261
222002	$77,184	Detroit River Interceptor (DRI) Evaluation and Rehabilitation	$10,472	$9,415	$3,060	$3,046	$3,046	$3,046	$8,000	$0	$0	$0	$0	$21,614	$8,000	$29,614
212008	$73,884	WRRF Aeration Improvements 1 and 2	$0	$0	$1,500	$13,283	$13,283	$13,069	$10,712	$10,712	$10,741	$0	$0	$41,136	$32,165	$73,301

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
211006	$70,042	WRRF PS No. 1 Improvements	$600	$8,100	$10,136	$10,136	$10,136	$10,136	$10,136	$7,168	$0	$0	$0	$48,645	$17,305	$65,950
211005	$67,002	WRRF PS No. 2 Improvements Phase II	$0	$0	$2,333	$2,333	$2,333	$0	$2,000	$11,612	$11,612	$11,612	$11,612	$7,000	$48,448	$55,448
212009	$66,983	WRRF Aeration Improvements 3 and 4	$0	$0	$0	$0	$0	$0	$0	$0	$3,000	$3,000	$3,000	$0	$9,000	$9,000
260200	$65,845	Sewer and Interceptor Rehabilitation Program	$4,911	$6,604	$6,644	$5,793	$5,793	$1,100	$15,000	$15,000	$5,000	$0	$0	$25,935	$35,000	$60,935
260701	$55,631	Conveyance System Infrastructure Improvements	$5,774	$15,639	$17,041	$11,793	$4,000	$0	$0	$0	$0	$0	$0	$48,473	$0	$48,473
211001	$54,968	WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	$220	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
222001	$53,466	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	$1,182	$1,182	$1,185	$10,818	$14,123	$13,003	$11,497	$0	$0	$0	$0	$40,311	$11,497	$51,809
260204	$50,053	Conveyance System Engineering Services-1802575	$1,276	$11,168	$18,358	$18,307	$0	$0	$0	$0	$0	$0	$0	$47,833	$0	$47,833
261000	$46,827	WRRF Rehabilitation of the Secondary Clarifiers	$0	$0	$0	$0	$0	$0	$2,056	$2,056	$2,056	$2,056	$2,056	$0	$10,281	$10,281
233003	$46,317	Rouge River In-system Storage Devices	$0	$0	$233	$1,000	$1,229	$1,229	$9,481	$9,507	$9,481	$9,481	$4,676	$3,691	$42,626	$46,317
216008	$40,226	Rehabilitation of Screened Final Effluent (SFE) Pump Station	$1,500	$2,510	$10,848	$10,848	$14,258	$0	$0	$0	$0	$0	$0	$38,464	$0	$38,464
232001	$39,756	Fairview Pumping Station - Replace Four Sanitary Pumps	$9,346	$38	$0	$0	$0	$0	$0	$0	$0	$0	$0	$38	$0	$38
273001	$38,576	Hubbell Southfield CSO Facility Improvements	$0	$533	$1,600	$1,600	$1,800	$3,344	$8,800	$8,800	$8,800	$3,300	$0	$8,876	$29,700	$38,576
260201	$38,252	CON-149, Emergency Sewer Repair	$6,096	$3,051	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,051	$0	$3,051
260510	$35,825	Conveyance System Repairs (Outfalls)	$856	$1,340	$1,771	$5,000	$6,752	$6,752	$6,752	$6,567	$0	$0	$0	$21,616	$13,319	$34,935
260206	$35,270	Conveyance System Repairs (Sewers)	$5,149	$2,149	$3,000	$5,163	$5,149	$5,149	$5,149	$4,339	$0	$0	$0	$20,611	$9,488	$30,099

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
213007	$23,810	WRRF Modification to Incinerator Sludge Feed Systems at Complex -II	$3,690	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
211009	$21,790	WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System	$250	$1,000	$500	$5,000	$5,000	$5,000	$5,000	$0	$0	$0	$0	$16,500	$5,000	$21,500
260500	$21,500	CSO Outfall Rehabilitation	$11,642	$1,642	$1,646	$1,642	$1,642	$1,642	$1,646	$0	$0	$0	$0	$8,212	$1,646	$9,858
216006	$21,108	Assessment and Rehabilitation of WRRF yard piping and underground utilities	$206	$2,963	$9,432	$7,468	$0	$0	$0	$0	$0	$0	$0	$19,863	$0	$19,863
211010	$19,894	Rehabilitation of Sludge Processing Complexes A and B	$0	$0	$0	$0	$920	$920	$4,832	$4,372	$4,372	$4,384	$0	$1,840	$17,960	$19,800
260207	$19,160	Rehabilitation of Woodward Sewer Systems	$3,371	$4,849	$4,862	$4,849	$0	$0	$0	$0	$0	$0	$0	$14,559	$0	$14,559
270004	$17,004	Oakwood and Leib CSO Facilities Improvement Project	$0	$1,250	$1,300	$1,250	$3,630	$3,850	$3,850	$1,650	$220	$0	$0	$11,280	$5,720	$17,000
214001	$14,282	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260614	$13,590	Structural Inspection & Structural Improvements	$3,101	$3,101	$3,109	$1,742	$0	$0	$0	$0	$0	$0	$0	$7,952	$0	$7,952
277001	$13,287	Baby Creek Outfall Improvements Project	$218	$1,250	$2,600	$2,600	$2,600	$2,400	$550	$0	$0	$0	$0	$11,450	$550	$12,000
211008	$12,644	WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines	$8,267	$2,506	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,506	$0	$2,506
260209	$12,200	Sewer Rehabilitation and Repair	$0	$4,504	$5,863	$1,833	$0	$0	$0	$0	$0	$0	$0	$12,200	$0	$12,200
216011	$11,400	WRRF Structural Improvements	$0	$400	$2,488	$2,488	$2,488	$2,488	$1,050	$0	$0	$0	$0	$10,350	$1,050	$11,400
260205	$10,379	NWI Rehabilitation	$37	$5,044	$5,030	$0	$0	$0	$0	$0	$0	$0	$0	$10,074	$0	$10,074
260508	$8,755	B-39 Outfall Rehabilitation	$3,214	$5,392	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,392	$0	$5,392
270003	$8,249	Long Term CSO Control Plan	$3,162	$2,519	$285	$153	$0	$0	$0	$0	$0	$0	$0	$2,957	$0	$2,957
270007	$8,216	Disinfection System Improvements at Baby Creek, Belle Isle, Conner	$0	$0	$0	$335	$1,508	$1,508	$584	$1,106	$1,290	$1,290	$597	$3,350	$4,866	$8,216

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
		Creek, and Puritan Fenkell CSO Facilities														
260603	$8,175	Conner Creek CSO RTB Automation Improvements	$657	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260619	$7,635	Control System Upgrade - St Aubin, Lieb & Mile	$2,116	$2,116	$2,122	$1,218	$0	$0	$0	$0	$0	$0	$0	$5,456	$0	$5,456
213006	$7,094	WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities	$400	$750	$2,417	$1,667	$1,667	$0	$0	$0	$0	$0	$0	$6,500	$0	$6,500
270008	$7,007	Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities	$0	$0	$0	$151	$268	$285	$137	$1,474	$1,843	$1,843	$1,007	$704	$6,303	$7,007
270005	$6,481	CSO Facility Safety Improvements and Building Rehabilitation	$0	$122	$356	$300	$1,430	$2,420	$1,760	$94	$0	$0	$0	$4,628	$1,854	$6,481
260617	$6,456	St. Aubin Chemical Disinfection Improvements	$264	$275	$1,925	$1,925	$1,650	$0	$0	$0	$0	$0	$0	$5,775	$0	$5,775
213008	$6,351	WRRF Rehabilitation of the Ash Handling Systems	$0	$0	$0	$0	$500	$500	$0	$1,484	$1,484	$1,484	$748	$1,000	$5,200	$6,200
270001	$6,199	Pilot CSO Netting Facility	$0	$0	$345	$345	$348	$111	$2,395	$2,395	$259	$0	$0	$1,150	$5,049	$6,199
260618	$6,091	Oakwood HVAC Project	$5,223	$498	$0	$0	$0	$0	$0	$0	$0	$0	$0	$498	$0	$498
270012	$5,921	Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities	$0	$0	$0	$0	$0	$147	$282	$282	$369	$2,285	$2,285	$147	$5,501	$5,649
270002	$5,840	Meldrum Sewer Diversion and VR-15 Improvements	$0	$0	$0	$224	$436	$1,419	$1,252	$1,256	$1,252	$0	$0	$2,079	$3,761	$5,840
212010	$5,456	WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite	$0	$0	$0	$0	$0	$0	$0	$316	$316	$316	$820	$0	$1,767	$1,767
216004	$5,281	Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF	$2,210	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260504	$5,042	Phase 2 Outfalls- 19000796	$141	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260800	$5,000	WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM	$0	$1,891	$1,891	$1,218	$0	$0	$0	$0	$0	$0	$0	$5,000	$0	$5,000
270014	$4,442	Conversion to Complete Capture Basin at Puritan	$0	$0	$0	$0	$0	$0	$80	$154	$154	$145	$1,290	$0	$1,823	$1,823

CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
		Fenkell and Seven Mile CSO Facilities														
261001	$4,030	WRRF Rehabilitation of the Secondary Clarifiers Phase 1	$0	$0	$790	$790	$395	$2,056	$0	$0	$0	$0	$0	$4,030	$0	$4,030
216007	$3,912	DTE Primary Electric 3rd Feed Supply to WRRF	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
211002	$3,463	WRRF PS No. 2 Pumping Improvements - Phase 1	$946	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260902	$2,721	WRRF 4th Floor Renovation	$0	$2,671	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,671	$0	$2,671
260621	$2,542	Conner Creek Dike Improvements	$2,258	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260623	$2,175	CSO Baby Creek Screen Rehabilitation	$20	$1,078	$1,078	$0	$0	$0	$0	$0	$0	$0	$0	$2,155	$0	$2,155
260622	$2,061	CSO Emergency Generator Improvements	$40	$1,220	$800	$0	$0	$0	$0	$0	$0	$0	$0	$2,020	$0	$2,020
260702	$2,000	Pump Station Assets Updates	$0	$0	$665	$667	$667	$0	$0	$0	$0	$0	$0	$2,000	$0	$2,000
270006	$1,916	Control System Upgrades at Baby Creek and Belle Isle CSO Facilities	$0	$93	$134	$134	$495	$495	$495	$69	$0	$0	$0	$1,351	$564	$1,916
341002	$1,901	Security Infrastructure Improvements for Wastewater Facilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
273002	$1,770	CSO Hubbell Southfield VR-8 Gate Improvements	$0	$0	$0	$0	$0	$50	$82	$80	$258	$594	$594	$50	$1,609	$1,659
270010	$1,509	HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities	$0	$0	$40	$70	$70	$295	$500	$500	$32	$0	$0	$476	$1,033	$1,509
260901	$1,405	Rehabilitation of HAZMAT Facility at WRRF	$0	$1,274	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,274	$0	$1,274
270009	$1,378	Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities	$0	$0	$0	$0	$0	$37	$67	$61	$147	$516	$516	$37	$1,308	$1,345
260620	$1,047	Baby Creek Roof Replacement	$1,022	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260903	$1,005	WRRF Front Entrance Rehabilitation	$0	$1,005	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,005	$0	$1,005
270013	$894	Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities	$0	$0	$0	$0	$0	$0	$24	$84	$74	$332	$332	$0	$844	$844
260615	$759	Puritan Fenkell & Leib Site Improvements	$377	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

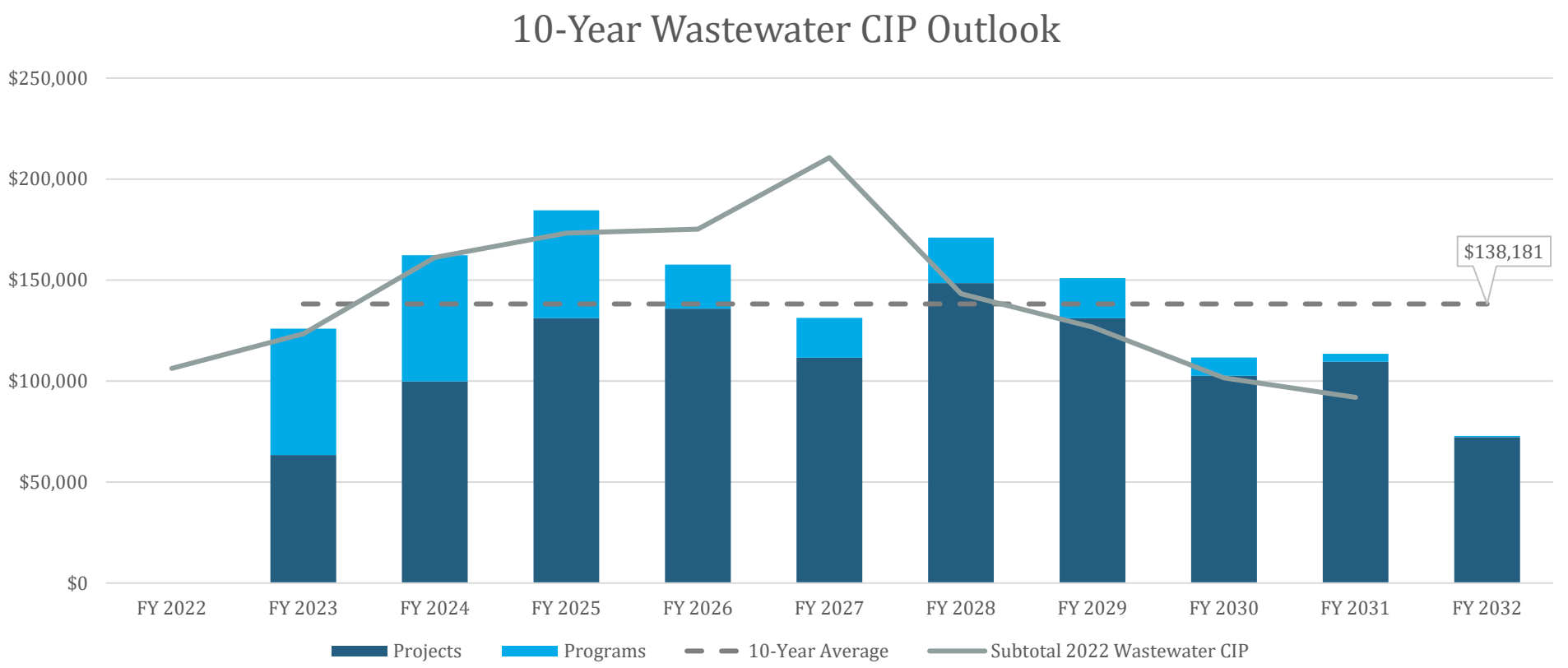
CIP#	LIFETIME PLANNED SPEND	TITLE	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	TOTAL FY 2023 – FY 2027	TOTAL FY 2028 – FY 2032	TOTAL FY 2023 – FY2032
277002	$738	Baby Creek CSO Facility Influent Flushing System	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260613	$604	Baby Creek HVAC Improvements	$74	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
260700	$526	Sewer System Infrastructure Improvements and Pumping Stations	$75	$75	$75	$75	$75	$75	$75	$0	$0	$0	$0	$376	$75	$451
260900	$429	WRRF Facility Optimization Program	$0	$0	$429	$0	$0	$0	$0	$0	$0	$0	$0	$429	$0	$429
270011	$384	HVAC Improvements at Conner Creek and Belle Isle CSO Facilities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$13	$34	$0	$46	$46
232004	$257	CONDITION ASSESSMENT AT BLUE HILL PUMP STATION	$257	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TOTALS			**$108,448**	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$171,068**	**$150,958**	**$111,707**	**$113,484**	**$72,826**	**$761,764**	**$620,044**	**$1,381,808**

10-YEAR WASTEWATER CIP OUTLOOK

Financial figures are in thousands of dollars ($1,000's).

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032
Projects	$63,409	$99,807	$131,168	$135,845	$111,536	$148,525	$131,078	$102,649	$109,590	$72,232
Programs	$62,524	$62,506	$53,354	$21,844	$19,771	$22,543	$19,880	$9,058	$3,894	$594
Total	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$171,068**	**$150,958**	**$111,707**	**$113,484**	**$72,826**

10-YEAR GRAND TOTAL: $1,381,808,805



4 FINANCE

4.1. Introduction

The intersection of the CIP and the GLWA's overall financial plan balances several objectives to support the Authority's mission. Those objectives include the following:

- ✓ Transparency in the development of the financial plan
- ✓ Collaboration internally and externally
- ✓ Ensure sustainability
- ✓ Reduce the debt burden
- ✓ Smoothing of annual adjustments to service charges
- ✓ Improve the Authority's financial position

The Authority draws upon five sources of funding for its CIP:

1. Bond Proceeds: The Authority uses an incremental method of funding long-lived capital projects through a bond financing program. The Authority issues revenue bonds pursuant to Michigan Public Act 94 of 1933 (the Revenue Bond Act). The Act provides a pledge of "net revenues" for the payment of the bond principal and interest. "Net revenues" is the revenues of the system remaining after deducting the reasonable expenses of administration, operation, and maintenance of the system.
2. Revenue Financed Capital (Improvement & Extension Fund): Based upon ongoing expense, capital, and revenue optimization efforts, the Authority is able to build reserves to use pay-as-you go funding for shorter-lived and lower-dollar capital expenditures as well as to reduce the level of borrowing for longer-lived assets. These funds are not budgeted for use until received and recorded in the Improvement & Extension Fund for the water or the sewer system.
3. Federal Loan Programs: The Authority's sources of funding include lower cost financing programs including the State Clean Revolving Fund (CWRF) Loan Program and the Drinking Water Revolving Fund (DWRF) Loan Program.
4. Grants: The Authority utilizes public grants programs such as the State of Michigan's Stormwater, Asset Management, and Wastewater Program (provides both grants and loans) and is pursuing federal and private grants for energy optimization. This funding area may evolve given recent legislation at the Federal and State levels. At the time that this CIP is being prepared, federal funding programs are being announced for water related infrastructure improvements. How that will impact GLWA will not be known until calendar year 2022.
5. Contribution in Aid of Construction: Periodically, the Authority has the opportunity to partner with other public and private entities for the design and construction or improvement of an asset. Depending on the nature of the shared financing strategy, the Authority may offset the cost of System expansion or improvements with direct or indirect capital from that partner.

The Authority routinely publishes updates to its ten-year financial plans. Those plans set forth the forecasted strategic application of funding sources in general and specific terms. Process improvements in the CIP database being developed by the Capital Planning Group for future CIPs will contain specific funding sources by individual projects and project phases.

To ensure proper accountability of funding sources and uses, the Authority utilizes two funds for its capital program for each system: the Construction Fund and the Improvement & Extension (I&E) Fund.

- ✓ Construction Fund: This fund is used to account for constructed assets that will be capitalized improvement in future years. Revenues, or incoming resources for this fund include bond proceeds and related interest earnings as well as transfers in from the Improvement & Extension Fund for

"pay as go" financing. The balance of bind funds an I&E funds is designed to lower the cost of capital improvements.

- ✓ Improvement & Extension (I&E) Fund: The I&E Fund is defined by the Authority's Master Bond Ordinance (MBO) as the "fund used for improvements, enlargements, extensions or betterment" of the System. Cash receipts of the Authority are transferred into the I&E Fund pursuant to a flow of funds after commitments are met for a monthly allocation of operations and maintenance expense, debt service, pension, WRAP, budget stabilization fund, and extraordinary repair and replacement fund as administered by a trustee. Capital outlay items are funded with I&E Funds. Capital outlay are items that are generally purchased (rather than constructed) and with an estimated useful life of less than 20 years.

The basis of accounting for the capital spending is the accrual basis. Under this basis of accounting, revenues are recognized when earned and measurable regardless of when collected; and expenses are recorded, or accrued, on a matching basis when incurred. Accrued expenses are expected to be paid in a subsequent accounting period. For purposes of this CIP, the terms expenses and expenditures are used interchangeably.

4.2. Summary CIP Financial Plan Review and Analysis

The GLWA CIP financial plan document is based on a foundational database of capital projects and programs to support improved analysis and decision-making, provide transparency, balance risk and opportunity, and demonstrate greater clarity in the long-term GLWA financial strategy. With the ultimate performance measure of lowering the cost of capital, a better-executed financial plan optimizes the use of bonds, revenue financial capital, revolving fund loans, and grants. It also contemplates execution risk (actual rate of capital project delivery) versus inherent risk in project cost estimating. Lastly, a sustainable financial plan encompasses flexibility to allow for strategic timing of new debt, pace of cash flow needs, and adequate reserves for system needs.

While the GLWA Board of Directors approves the plan, the authority to spend does not occur until additional project review processes are completed prior to the procurement process. Depending on the scope and dollar amount of the project, final approval to proceed may include customer engagement, Chief Executive Officer review, and GLWA Board CIP Committee review and/or GLWA Board action.

Recognizing the difference in scope between the CIP, which has a broader strategic view of system needs versus the tactical financial plan which models use of cash reserves and future borrowing, GLWA is utilizes "capital spend rate assumption policy". This policy, presented below, was adopted by the GLWA Board of Directors on November 28, 2018 and was first implemented three years ago with the FY 2020 – 2024 CIP.

CAPITAL PROGRAM SPEND RATE ASSUMPTION POLICY

Purpose: The Spend Rate Assumption (SRA) policy provides an analytical approach to bridge the total dollar amount of projects in the Capital Improvement Plan (CIP) with what can realistically be spent due to limitations beyond GLWA's control and/or delayed for non-budgetary reasons. Those limitations, whether financial or non-financial, necessitate the SRA for budgetary purposes, despite the prioritization established in the CIP. The outcome is a reasoned balance between a desired level of capital investment with financial strategies to manage debt levels and control adjustments to customer charges.

Policy: Annually, a projected spend rate assumption for the financial plan related to the proposed capital improvement plan will be established based upon pertinent factors and data available at that time. Such pertinent factors and data will include the mix of projects and phases in the proposed CIP, interdependency risk, criticality, and other measures provided by the GLWA team members that develop and manage the CIP projects. That spend rate assumption will be presented to the Audit Committee no later than December 31st each year after the GLWA Board, Capital Improvement Planning Committee, and Member Partners have had the opportunity to review the draft capital improvement plan.

The remainder of this chapter provides an analysis of information in the CIP database that will inform the spend rate assumption for future financial plans.

COST POOL RESPONSIBILITY

Revenue requirements are the basis for establishing customer charges. Included in that calculation are operations and maintenance expense, debt service, Master Bond Ordinance (MBO) reserve requirements, system lease requirements, revenue financed capital targets, water residential assistance program commitments, and legacy obligations. Each of these elements is allocated to the cost pools listed below that align with customer's use of the system. The debt service and revenue financed capital revenue requirements are allocated to cost pools based on the Authority's investment in fixed assets. The cost of capital improvements will impact future fixed asset records, and future charges.

Water Cost Pools

1. ***Water Treatment Plants (WTP)*** represents treatment related costs that are allocable to customers based primarily on their contractual max day demands.
2. ***Conveyance*** represents costs related to transmitting water to customers that are allocable to customers based primarily on their contractual peak hour demands.

There are other sub-functions that are utilized in the Water Charge Methodology.

Wastewater Cost Pools

1. ***Water Resource Recovery Facility (WRRF)*** represents treatment related costs that are allocable to customers based on their contribution of sanitary and total volumes.
2. ***Conveyance*** represents costs that are allocable to customers based on their contribution of total volumes.
3. ***CSO 83/17*** represents capital costs that are allocated based upon terms of service agreements with the Authority's customers. These agreements assign 83% of "combined sewer overflow control facilities" (CSO) costs to City of Detroit customers and 17% to other customers.

Table Cost Allocation Water & Wastewater summarize the assignment of proposed capital improvement expenditures to the various cost pools. The Wastewater projects are currently all assigned as "To Be Determined" (TBD) pending discussion of Master Plan strategies and alignment with the Authority's service agreements with Wastewater customers and the associated Wastewater Charge Methodology.

COST ALLOCATION WATER & WASTEWATER

Financial figures are in thousands of dollars ($1,000's).

Cost Allocation	FY23	FY24	FY25	FY26	FY27	Total FY 2023-2027	Percent of 5-Year Total
Water	$194,376	$225,436	$221,616	$174,681	$149,539	$965,648	55.9%
Conveyance	$134,009	$147,283	$151,775	$127,894	$102,122	$663,083	68.7%
WTP	$60,367	$78,153	$69,841	$46,786	$47,417	$302,564	31.3%
Wastewater	$125,932	$162,313	$184,523	$157,689	$131,307	$761,764	44.1%
TBD	$125,932	$162,313	$184,523	$157,689	$131,307	$761,764	100.0%
Grand Total	**$320,308**	**$387,749**	**$406,139**	**$332,370**	**$280,846**	**$1,727,412**	**100.0%**

CIP FUNDING BASED ON ESTIMATED USEFUL LIFE

The long-term financial plan differentiates between appropriate uses of long-term debt versus revenue financed capital in the Improvement & Extension (I&E) Fund as defined in the MBO. As a general rule, assets with a life of less than 20 years are funded with I&E Funds. An example of an exception to the rule is some plant improvements. Otherwise, assets with a life greater than 20 years are funded with a blend of debt and I&E Funds. Building I&E Funds over time allows GLWA to position itself to further reduce reliance on debt. Exceptions to that plan may be to take advantage of lower cost borrowings from the revolving fund loan programs or a revision of the plan to optimize refunding savings. For this reason, the five-year financial plan is regularly reviewed during the fiscal year. Updates may also occur due to grant awards, collaboration opportunities, and changes in budgetary conditions. The financial plan reflects grants and federal and state loans only after approval is received by the grantor or authorized party.

As shown in Table Useful Life Water & Wastewater, most of the CIP projects are longer- lived assets, defined as greater than a 20-year estimated useful life. Shorter-lived assets scheduled for acquisition or replacement are identified in the five-year capital outlay plan provided in the GLWA Biennial Budget and Five-Year Plan document.

USEFUL LIFE WATER & WASTEWATER

Financial figures are in thousands of dollars ($1,000's).

Asset Life Range	FY23	FY24	FY25	FY26	FY27	Total FY 2023-2027	Percent of 5-Year Total
Water	**$194,376**	**$225,436**	**$221,616**	**$174,681**	**$149,539**	**$965,648**	**55.90%**
Useful Life < 20 Years	$8,975	$9,254	$14,518	$17,162	$14,144	$64,053	6.63%
Useful Life > 20 Years	$185,400	$216,183	$207,098	$157,519	$135,395	$901,595	93.37%
Wastewater	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$761,764**	**44.10%**
Useful Life < 20 Years	$15,930	$21,626	$19,622	$18,743	$16,131	$92,053	12.08%
Useful Life > 20 Years	$110,002	$140,687	$164,901	$138,946	$115,176	$669,712	87.92%
Grand Total	**$320,308**	**$387,749**	**$406,139**	**$332,370**	**$280,846**	**$1,727,412**	**100.00%**

PROJECT STATUS ANALYSIS

As shown in Table Project Status Water & Wastewater below, approximately 6% of the water system projects and 8% of the wastewater system projects are classified as "Future Planned Start". Note that a project designated as "Active" includes all projects where at least one phase is active, including GLWA Salaries phases.

PROJECT STATUS WATER & WASTEWATER

Financial figures are in thousands of dollars ($1,000's).

Project Status	FY23	FY24	FY25	FY26	FY27	Total FY 2023-2027	Percent of 5-Year Total
Water	**194,376**	**225,436**	**221,616**	**174,681**	**149,539**	**965,648**	**55.9%**
Active	141,367	153,890	151,136	122,431	105,637	674,460	69.8%
Future Planned Start	4,741	23,427	16,371	12,364	2,219	59,122	6.1%
Under Procurement	48,268	48,120	54,109	39,886	41,683	232,065	24.0%
Wastewater	**125,932**	**162,313**	**184,523**	**157,689**	**131,307**	**761,764**	**44.1%**
Active	73,462	111,002	144,978	124,735	99,600	553,777	72.7%
Future Planned Start	1,748	6,759	12,282	19,433	23,816	64,038	8.4%
Under Procurement	50,722	44,551	27,262	13,522	7,892	143,949	18.9%
Grand Total	**320,308**	**387,749**	**406,139**	**332,370**	**280,846**	**1,727,412**	**100.0%**

PHASE CATEGORY ANALYSIS

Often projects are broken up into several phases related to how the project will be delivered and managed. Categories may be grouped to align with work to be performed within each individual phase. Individual categories are identified and named below, however; several categories may exist for each phase. In this case, this implies the same vendor, under one contract, will be performing multiple categories of the overall project. The current project categories are identified below.

PROJECT CATEGORIES •
Construction, Design/Engineering, Personnel Services, Program

As shown in Table Phase Category Water & Wastewater below, the majority of the dollars are allocated to construction. From a financial standpoint, this increases the validity of the projected CIP spend once a contract is awarded as there are significantly less dollars assigned to pre-construction activities.

PHASE CATEGORY WATER & WASTEWATER

Financial figures are in thousands of dollars ($1,000's).

Asset Life Range	FY23	FY24	FY25	FY26	FY27	Total FY 2023-2027	Percent of 5-Year Total
Water	**$194,376**	**$225,436**	**$221,616**	**$174,681**	**$149,539**	**$965,648**	**55.90%**
Construction	$135,597	$197,452	$203,858	$160,117	$137,958	$834,983	86.47%
Design/Engineering	$39,553	$20,368	$12,311	$9,499	$7,898	$89,630	9.28%
Personnel Services	$1,313	$1,161	$1,059	$684	$617	$4,834	0.50%
Program	$17,912	$6,456	$4,387	$4,380	$3,065	$36,201	3.75%
Wastewater	**$125,932**	**$162,313**	**$184,523**	**$157,689**	**$131,307**	**$761,764**	**44.10%**
Construction	$41,136	$84,330	$115,783	$115,888	$94,412	$451,549	59.28%
Design/Engineering	$21,446	$14,303	$14,336	$18,817	$16,170	$85,072	11.17%
Personnel Services	$826	$1,175	$1,050	$1,141	$953	$5,144	0.68%
Program	$62,524	$62,506	$53,354	$21,844	$19,771	$219,999	28.88%
Grand Total	**$320,308**	**$387,749**	**$406,139**	**$332,370**	**$280,846**	**$1,727,412**	**100.00%**

5 WATER PROJECTS

89 PROJECTS

42 ACTIVE
35 FUTURE PLANNED
2 PENDING CLOSEOUT
10 CLOSED
1 RECLASSIFIED

5-YEAR CIP

$966 MILLION

10-YEAR OUTLOOK

$1.88 BILLION

FOR MORE: APPENDIX A

FIND THE FULL BUSINESS CASE EVALUATIONS FOR WATER PROJECTS IN APPENDIX A.

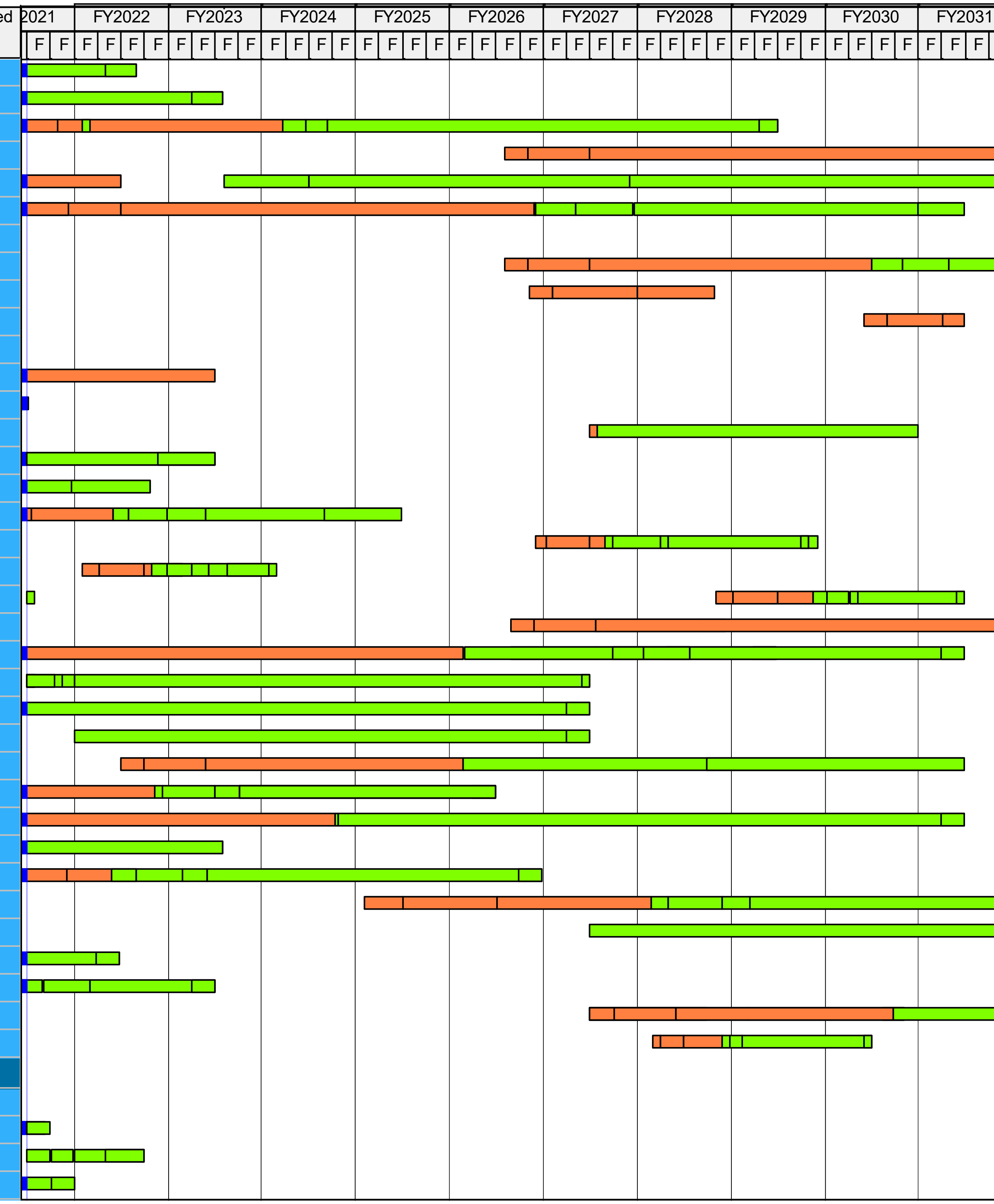
Activity ID	Activity Name	Remaining Duration	Actual/Forecasted Start	Actual/Forecasted Finish
Water Projects		7066	08-Nov-16 A	02-Nov-40
	111001: Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements	3979	13-Mar-20 A	21-May-32
	111006: Lake Huron Water Treatment Plant, Filter Instrumentation and Raw Water Flow Metering Improvements	2253	01-Mar-22	30-Apr-28
	111007: Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements	155	14-Apr-21 A	01-Dec-21
	111008: Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements	1176	11-Jan-26	31-Mar-29
	111009: Lake Huron Water Treatment Plant - High Lift Pumping, Water Production Flow Metering and Yard Piping Improve	1159	26-Oct-20 A	31-Aug-24
	111010: Filtration Improvements	2888	04-Aug-26	30-Jun-34
	111011: Lake Huron WTP Pilot Plant	762	09-Feb-21 A	31-Jul-23
	111012: LHWTP-Flocculation Improvements	2388	30-Jun-21	12-Jan-28
	112003: Northeast Water Treatment Plant High-Lift Pumping Station Improvements	4019	17-Aug-20 A	30-Jun-32
	112005: Northeast Water Treatment Plant - Replacement of Covers for Process Water Conduits	91	30-Jun-21	28-Sep-21
	112006: Northeast Water Treatment Plant Flocculator Replacements	2192	15-Feb-21 A	30-Jun-27
	113003: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improv	1095	01-Jul-28	30-Jun-31
	113006: Southwest Water Treatment Plant Chlorine Scrubber, Raw Water Screens & Related Improvements	731	28-Jan-20 A	30-Jun-23
	113007: Southwest Water Treatment Plant Architectural and Building Mechanical Improvements	1062	03-Aug-28	30-Jun-31
	113008: SWP Reservoir Replacement	2738	01-Jan-26	30-Jun-33
	114002: Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	4019	02-Jan-18 A	30-Jun-32
	114005: Springwells Water Treatment Plant, Administration Building Improvements & Underground Fire Protection Loop	3838	10-Jun-19 A	01-Jan-32
	114007: Springwells Water Treatment Plant Powdered Activated Carbon System Improvements	1427	04-Aug-27	30-Jun-31
	114008: Springwells Water Treatment Plant 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements	395	24-Jan-18 A	29-Jul-22
	114010: Springwells Water Treatment Plant, Yard Piping and High-Lift Header Improvements	5845	27-Mar-20 A	30-Jun-37
	114011: Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements	551	01-Feb-19 A	01-Jan-23
	114013: Springwells Water Treatment Plant, Reservoir Fill Line Improvements	63	08-Nov-16 A	31-Aug-21
	114016: Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replace	218	09-Oct-19 A	02-Feb-22
	114017: Springwells Water Treatment Plant Flocculator Drive Replacements	1583	10-Aug-20 A	29-Oct-25
	114018: Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements	1197	01-Jul-21	09-Oct-24
	115001: Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	1527	26-Jun-17 A	04-Sep-25
	115005: WWP WTP Building Ventilation Improvements	1462	29-Sep-20 A	30-Jun-25
	115006: Water Works Park Site/Civil Improvements	1461	01-Jul-27	30-Jun-31
	115007: Water Works Park High Lift Pumping Station Modernization	5194	03-Aug-20 A	18-Sep-35
	115008: Jefferson Main Replacement Project	2194	01-Jul-21	03-Jul-27
	115009: Water Works Park Sedimentation Basins Structural Upgrades	1733	01-Aug-26	29-Apr-31
	116002: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements	1827	29-Jan-18 A	30-Jun-26
	116005: Belle Isle Seawall Rehabilitation	1097	01-Jun-21 A	30-Jun-24
	116006: Belle Isle Intake System Rehabilitation and Improvements	1826	01-Jul-27	29-Jun-32
	116007: System Electrical Power Improvements	731	01-Jan-22	01-Jan-24
	122003: Water Works Park to Northeast Transmission Main	2558	01-Nov-19 A	30-Jun-28
	122004: 96-inch Water Transmission Main Relocation and Isolation Valve Installations	2923	29-Mar-17 A	30-Jun-29
	122005: Schoolcraft Road Water Transmission Main	305	04-Jun-18 A	30-Apr-22
	122006: Wick Road Water Transmission Main	366	26-Nov-17 A	30-Jun-22
	122007: Merriman Road Water Transmission Main Loop	3258	03-Aug-26	04-Jul-35
	122011: Park-Merriman Road Water Transmission Main	276	11-Mar-19 A	01-Apr-22
	122013: 14 Mile Transmission Main Loop	1291	20-Mar-19 A	11-Jan-25
	122016: Downriver Transmission Main Loop	2528	01-Jun-20 A	31-May-28
	122017: 7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	2923	12-Mar-21 A	30-Jun-29
	122018: Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	2923	01-Dec-20 A	30-Jun-29
	122019: Jefferson Main Replacement Project	1825	01-Jul-21	29-Jun-26
	132006: Ford Road Pumping Station, Pressure and Control Improvements	1	03-May-21 A	30-Jun-21

CIP 2023 - Integrated Master Schedule - WTP Projects
June 2021 Update

Run Date: 08-Dec-21
Data Date: 30-Jun-21

GLWA
Great Lakes Water Authority

Activity ID	Activity Name	Remaining Duration	Actual/Forecasted Start	Actual/Forecasted Finish
	132007: Energy Management: Freeze Protection Pump Installation at Imlay Pump Station	429	01-Jun-20 A	01-Sep-22
	132010: West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades	763	01-Apr-21 A	01-Aug-23
	132012: Ypsilanti Booster Pumping Station Improvements	2923	01-Feb-20 A	30-Jun-29
	132014: Adams Road Pumping Station Improvements	3622	01-Aug-26	30-Jun-36
	132015: Newburgh Road Booster Pumping Station Improvements	4018	05-Feb-20 A	29-Jun-32
	132016: North Service Center Pumping Station Improvements	3653	04-Dec-20 A	30-Jun-31
	132018: Schoolcraft Pumping Station Improvements	2132	04-Aug-33	05-Jun-39
	132019: Wick Road Pumping Station Improvements	2524	03-Aug-26	30-Jun-33
	132020: Franklin Pumping Station Improvements	1698	06-Nov-26	30-Jun-31
	132021: Imlay Pumping Station Improvements	2953	31-May-30	30-Jun-38
	132022: Joy Road Pumping Station Improvements	2682	01-Jul-33	02-Nov-40
	170109: GLWA-CS-187: FK Eng: Raw Water Intake	731	17-Jun-17 A	30-Jun-23
	170200: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection,	6	23-May-18 A	05-Jul-21
	170300: Water Treatment Plant Automation Program	1276	01-Jul-27	27-Dec-30
	170302: SW SCADA System Upgrade	731	13-Apr-20 A	30-Jun-23
	170303: Power Monitoring Installation for Water Treatment Plants	549	13-Jul-20 A	30-Dec-22
	170304: WWP Scada Infrastructure Upgrade	1462	29-Apr-21 A	30-Jun-25
	170305: WWP SCADA Network Upgrade	1096	02-Dec-26	01-Dec-29
	170306: SPW SCADA PLC Network Upgrade	758	01-Feb-22	28-Feb-24
	170307: NE SCADA Network Upgrade	3648	01-Jul-21	26-Jun-31
	170400: Water Transmission Improvement Program	3595	28-Aug-26	30-Jun-36
	170500: Transmission System Valve Rehabilitation and Replacement Program	3653	16-Oct-18 A	30-Jun-31
	170502: Transmission System Valve Rehabilitation and Replacement Program	2191	01-Jul-21	30-Jun-27
	170503: Transmission System Valve Replacement	2192	01-May-20 A	30-Jun-27
	170504:Transmission Mains Valves and Urgent	2006	02-Jan-22	30-Jun-27
	170600: Water Transmission Main Asset Assessment Program	3282	01-Jul-22	25-Jun-31
	170601: Linear System Integrity Program	1827	13-Feb-21 A	30-Jun-26
	170800: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation	3653	19-Nov-18 A	30-Jun-31
	170801: Reservoir Inspection, Design and Construction Project at Imlay Station, Lake Huron Water Treatment Plant, Spri	763	07-Dec-18 A	01-Aug-23
	170802: Reservoir Inspection, Design, and Construction Management Services Phase II	2003	15-Feb-21 A	23-Dec-26
	170803: Reservoir Inspection, Design, and Construction Management Services Phase III	3070	01-Feb-25	28-Jun-33
	170900: Suburban Water Meter Pit Rehabilitation and Meter Replacement	3653	01-Jul-27	30-Jun-37
	170901: Suburban Water Meter Pit Rehabilitation and Meter Replacement	359	01-Jan-18 A	23-Jun-22
	170902: Brownstown Meter Pit	731	08-Aug-18 A	30-Jun-23
	171500: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities	2922	01-Jul-27	30-Jun-35
	171502: Lake Huron and Southwest Roof Replacement	851	02-Mar-28	30-Jun-30
	Water Projects - Central Services	4019	01-Oct-18 A	30-Jun-32
	331003: Masonry Replacement and Rehabilitation	1827	01-Jul-27	30-Jun-32
	341001: Security Infrastructure Improvements on Water Facilities	122	15-Apr-19 A	29-Oct-21
	351001: LED Lighting and Lighting Control Improvements	458	30-Jun-21	30-Sep-22
	380700: As-Needed Geotechnical and Related Engineering Services	185	01-Oct-18 A	31-Dec-21



Construction | Study | Design | Work In Progress

CIP Number: 111001

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

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Representative Switchgear to be Replaced under CIP 111001

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
79.7

Problem Statement:

Improvements needed to align the existing low lift pumping rate with the Lake Huron WTP production rate per the 2015 Water Master Plan Update.

Currently, constant speed pumping at the low-lift portion of the plant can force it to operate in a semi -batch mode during night-time, low-demand periods. Existing electrical gear for low- and high-lift pumping units and filter backwash pumps are original to plant, beyond useful service life and need to be replaced to improve reliability, serviceabil...

Scope of Work/Project Alternatives:

This CIP will be delivered using a design-bid-build project delivery method. The project's scope of improvements will generally include rehabilitation or replacement of the following systems and equipment:
1. High and medium voltage electrical system at the facility
2. Low-lift pumps, right-sized to current and projected demands.
3. High-lift pumping units, right-sized to current and projected demands.
4. Filter wash water pumps and related equipment.
5. Phosphoric acid storage tanks and f...

Other Important Info:

*Innovation note: Ensure energy efficiency. Coordination between existing pumping unit and motor required during design. Critical speed analysis may show pump improvements needed to operate at reduced speeds. Uncovering an innovative rehabilitation design to minimize maintenance of existing drives.

CIP Number: 111001

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$471	$94	$94	$47	$47	$0	$0	$0	$35	$82	$176
Design & Construction Assistance # 1 (1803769)	$4,891	$1,803	$1,803	$1,535	$1,552	$0	$0	$0	$0	$1,552	$0
Construction (Build) # 1	$64,027	$0	$0	$0	$0	$0	$0	$0	$4,478	$4,478	$48,774

CIP Number: 111002

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Mechanical Room - New WCHP and Boilers

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Project Score
81.9

Problem Statement:

Existing heating, ventilating and air-conditioning systems Lake Huron are 40 years old and are either not operable or are energy-inefficient. Ventilation is inadequate in the filter areas of the plant. Indoor summer-time temperatures exceed 90F in the administration building and process control laboratory due to no air conditioning in this building. These elevated temperatures make for very uncomfortable working conditions for the chemists stationed in the laboratory full-time and plant team me...

Scope of Work/Project Alternatives:

This CIP project is being delivered using a design-bid-build project delivery model. The scope of work generally includes installing:
1. High-efficiency, natural gas-fired hot-water boilers, hot-water radiators, and hot-water and cold -water return piping throughout the facility.
2. Air-conditioning system for the administration building, including the process control laboratory and control room.
3. Roof-top mounted air handlers to ventilate the filter buliding.
4. Heating and ventilating sy...

Other Important Info:

There are three contracts associated with this CIP, including:
CS-1732 Engineering Design and Construction Administration Contract (active)
CON-182 Backflow Preventer Construction Contract (closed)
CON-212 HVAC Construction Contract (active)

CIP Number: 111002

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$135	$135	$135	$0	$0	$0	$0	$0	$0	$0	$0
Study & Design & Construction Assistance # 1 (CS-1732)	$774	$774	$774	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 2 (CON-212, CON-182)	$7,808	$7,808	$7,808	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 111006

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

Project Status: Active - Pre-Procurement - Construction
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
60.5

Problem Statement:
The filter instrumentation and raw water metering at the Lake Huron WTP is not functioning and is in need of replacement.

Scope of Work/Project Alternatives:
Contract is being redeveloped for full integration with CS-108 guidelines.

Other Important Info:
Contract is being redeveloped for full integration with CS-108 guidelines.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$505	$266	$266	$34	$34	$35	$34	$34	$34	$174	$29
Study & Design & Construction Assistance # 1 (CS-1771, CS-1499)	$1,007	$1,007	$1,007	$0	$0	$0	$0	$0	$0	$0	$0
Future Design Build	$24,428	$0	$0	$32	$565	$924	$3,455	$6,865	$6,865	$18,675	$5,720

CIP Number: 111007

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

Project Status: Pending Closeout
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Overall progress photo that shows new WWRB, JS1, JS2 and SPS 8/20/20

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Project Score
74.4

Problem Statement:

The existing WWRB and clarifiers have noticeable deteriorating concrete and walls that have permanently deflected. There is also concrete deterioration in the sludge pumping station as well as difficulties with maintenance and operation of the existing pumps. For example, the existing pumps are not equipped with permanent lifting mechanisms. A truck with a crane has to be mobilized to the plant to pull an existing pump when maintenance or repairs are needed. The new sludge pumping units will be...

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. GLWA retained an engineering consultant under GLWA Contract No. CS-171 “Raw Sludge Clarifiers and Raw Sludge Pumping Station Improvements” to conduct a condition assessment and design improvements for LH raw sludge handling. The WWRB, Clarifier Nos. 1 and 2, and the sludge pumping station all require improvement. The scope of construction involves:
1. Demolish existing clarifiers and sludge pumping station
2. Con...

Other Important Info:

This project should be completed prior to cessation of treatment at the Northeast WTP.

Project History: The clarifier/backwash structure is original to the plant. The tank walls appear to have been inadequately designed and/or constructed to withstand the loading of the surround soils.

Challenges: Improvements will require coordination with plant operations (filter backwashing, sedimentation basin cleaning) and requires bypass pumping due to signficant leakage from filter outlet valves.

CIP Number: 111007

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$105	$105	$105	$0	$0	$0	$0	$0	$0	$0	$0
Study & Design & Construction Assistance # 1 (CS-171)	$1,555	$1,448	$1,448	$107	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$7,438	$6,895	$6,895	$543	$0	$0	$0	$0	$0	$0	$0

CIP Number: 111008

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

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Project Score
49.5

Problem Statement:
The Lake Huron Water Treatment Plant was constructed in the early 1970s and started operating in 1976. The existing process control laboratory and administration building interiors are original construction, including but not limited to flooring, wall coverings, ceilings, lab cabinetry, control room boards, bathroom fixtures, and lighting fixtures. The original control room board is still located in the laboratory and consumes a large amount of space that is not used and inefficient. The archit...

Scope of Work/Project Alternatives:
This will be a study phase project that will involve architectural programming to determine the most efficient architectural layout that meets current process laboratory control technology and administrative workflow practices; and that can be provided through a construction renovation project within the existing building footprint.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$81	$0	$0	$0	$0	$0	$0	$0	$0	$81
Design/Engineering	$775	$0	$0	$0	$0	$0	$0	$0	$0	$775

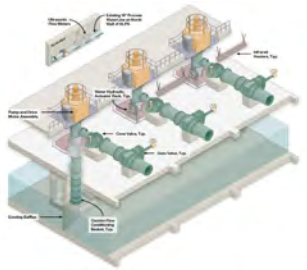
CIP Number: 111009

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

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**



Conceptual new h/L pump arrangement

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Project Score
75.7

Problem Statement:

Three new, smaller capacity, high-lift pumping units are needed to provide reduced finished water flows out of Lake Huron WTP to accommodate the relocation of the 96-inch transmission main south of Dorsey-Dickenson valve and to accommodate the installation of a new water production flow meter at the Lake Huron WTP. The three, new smaller capacity high-lift pumping units will also serve a longer term need to better match lower diurnal demands seen at the Lake Huron WTP. Installation of the new w...

Scope of Work/Project Alternatives:

This project will be delivered using a design-build project delivery method. The scope of work involves designing and building a new water production flow meter and associated meter vault to more accurately measure finished water production flows from the facility. This work will also entail constructing additional high-lift, finished water header piping, valves and appurtenances to facilitate construction of the new metering infrastructure. The scope also includes installing three new 35 milli...

Other Important Info:

N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$327	$179	$179	$46	$46	$46	$8	$0	$0	$101	$0
Design-Build # 1	$29,723	$1,546	$1,546	$8,974	$8,974	$8,999	$1,227	$0	$0	$19,202	$0

CIP Number: 111010

Project Title: Filtration Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
77.4

Problem Statement:

Significant issues exist in the filtration process of the LHWTP:
Filter influent and drain valves do not seal well, creating water loss
Filter underdrains and media have not been evaluated and require confirmation of condition
Isolation valves between the filters, filtered water conduit, filter to drain, and clearwells are known to leak heavily

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work will generally include the following:
2. Construct filtration improvements, including filter media, filter auxiliary scoring equipment, filter wash water troughs,and other filter tank work.
3. Replace the existing filter control valves and valve operators with new.
4. Rehabilitate concrete associated with the filters.

Replace isolation and valves as necessary
Repaint WW Conduit
Replace und...

Other Important Info:

n/a

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$321	$0	$0	$0	$0	$0	$0	$0	$0	$0	$229
Design & Construction Assistance # 1	$7,057	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,828
Construction (Build) # 1	$51,053	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,602

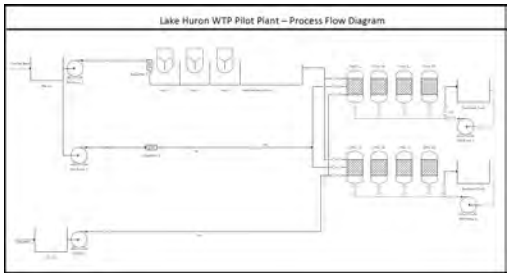
CIP Number: 111011

Project Title: Lake Huron WTP Pilot Plant

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron WTP

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**



Lake Huron WTP Pilot Plant - Process Flow Diagram

Project Engineer/Manager: Nichole Sajdak

Director: John Norton

Project Score
50.7

Problem Statement:
Water Operations staff at Lake Huron would benefit from the ability to test potential changes to existing water treatment practices and investigate new and innovative treatment advances.

Scope of Work/Project Alternatives:
A small scale pilot plant provides opportunity for testing and investigation without disruption to the full scale facility. Skid mounted units mimicking treatment at Lake Huron: Chemical addition, modified direct filtration facilities and data monitoring and recording would be provided for team education and training.

Other Important Info:
Scope of work to include engineering services for planning, construction and training.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$102	$0	$0	$48	$48	$4	$0	$0	$53	$0
Design-Build # 1 (1904449)	$3,220	$198	$198	$1,457	$1,457	$107	$0	$0	$1,564	$0

CIP Number: 111012

Project Title: LHWTP-Flocculation Improvements

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Lake Huron

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
91.5

Problem Statement:
The flocculators at the Lake Huron Water Treatment Plant are non-functional. While the plant has been able to maintain water quality, the State of Michigan has flagged this a serious issue. This CIP Project corrects this issue and addresses other issues around the flocculation systems such as any found defects in process and structure.

Scope of Work/Project Alternatives:
The project will be executed on a traditional design/bid/build delivery process. Design/build would be ineffective as the selection of flocculation technology will be the primary driver of overall cost, and is unknown.

Other Important Info:
The contract will also correct a process defect in the plant, where a section of the station conduits can never be taken out of service without loss of the entire station. This will entail the construction of approximately 150 lineal feet of new parallel raw water conduit

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$317	$1	$1	$48	$48	$48	$48	$48	$48	$242	$26
Design & Construction Assistance	$8,513	$0	$0	$887	$2,064	$1,228	$1,225	$1,225	$1,225	$6,967	$657
Construction (Build)	$23,247	$0	$0	$0	$0	$522	$7,173	$7,173	$5,970	$20,839	$2,408

CIP Number: 112003

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

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Northeast
Lookup Location: Northeast WTP

- [ ] **Project New to CIP:**

- [ ] **Innovation**
- [ ] **WW Master Plan**
- [x] **Water Master Plan Right Sizing**
- [x] **Redundancy**
- [x] **NE WTP Repurposing**
- [ ] **Linear Assets Outside of Facilities**
- [ ] **Predecessor Project(s)**

Project Engineer/Manager: Mike Graham

Director: Grant Gartrell

Project Score
82.2

Problem Statement:

Existing mechanical, electrical, instrumentation, and control system equipment within the high-lift pumping plant at the Northeast Water Treatment Plant is mostly original (i.e. 1956). Both medium-voltage and low-voltage switchgear are beyond their useful service life. Stock replacement parts are no longer available. When repairs are needed to the switchgear, then either un-used redundant gear are used for parts or custom-manufactured gear is obtained at a high cost with long lead times. In som...

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work generally includes:
1) Replace medium voltage switchgear, Unit Substation 1, all motor control centers (MCCs), power panels, transformers, and lighting panels.
2) Replace HL Pumps and size according to projected demands.
3) Replace pump motor controls to accommodate remote operation.
4) Replace primary transformers and test/replace feeders to property lines. Coordinate with DTE to ensure th...

Other Important Info:

CIP Number: 112003

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$648	$223	$223	$48	$22	$22	$94	$0	$0	$139	$237
Design & Construction Assistance # 1	$5,280	$0	$0	$94	$943	$3,389	$852	$0	$0	$5,185	$0
Design/Engineering (RPR Services)	$2,493	$0	$0	$0	$0	$357	$356	$0	$0	$714	$1,778
Construction (Build) # 1	$39,732	$0	$0	$0	$0	$0	$0	$0	$0	$0	$39,732
Construction (Electrical Service Change)	$13,959	$0	$0	$0	$33	$11,229	$2,696	$0	$0	$13,959	$0
	$10,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,000

CIP Number: 112005

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Northeast
Lookup Location: Northeast WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
76.8

Problem Statement:
The existing steel covers that cover the entry openings into filtered water conduits at the plant are significantly deteriorated to the point where the covers are not water-tight and require replacement. Therefore, these covers are unsafe and have been identified by the EGLE in the most recent sanitary survey as requiring replacement. Temporary barricades are in place to prevent injury and further damage.

Scope of Work/Project Alternatives:
Replace steel covers, frames and associated structural support beams over the filtered water conduits.

Other Important Info:
Challenges: Temporary support of sluice gate operators and partial shutdown of certain portions of the plant to facilitate replacement of the existing steel covers, frames,and associated structural supports that are located immediately above the filtered water conduits.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$49	$49	$49	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CS-289, 1901036)	$888	$888	$888	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 112006

Project Title: Northeast Water Treatment Plant Flocculator Replacements

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Northeast
Lookup Location: Northeast Water Treatment Plant
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Grant Gartrell

Director: Grant Gartrell

Project Score
82.4

Problem Statement:

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

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-bid-build project delivery method and generally includes the following scope of work:
1. Demolish and remove existing flocculators including drives, motors, shafts, paddle wheels, control panels, electrical service, and related appurtenances.
2. Install a complete, new flocculation system designed to current industry standards.
3. Construct new stairways and platforms to improve access to the flocculator drive galleries.

Other Important Info:

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$457	$254	$254	$0	$40	$40	$40	$40	$40	$202	$0
Construction (Build) # 1	$13,597	$0	$0	$0	$2,719	$2,719	$2,719	$2,719	$2,719	$13,597	$0

CIP Number: 113002

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Southwest
Lookup Location: Southwest WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Shakil Ahmed

Director: Terry Daniel

Project Score
58.7

Problem Statement:
Existing oil hydraulic high lift valve actuators are leaking oil and at the end of service life. The leaking actuators pose safety concerns and replacement of valve actuators is needed.

Scope of Work/Project Alternatives:
This project involves replacement of the existing oil hydraulic actuators on the high lift pumping units with electric motor operators. A new gas-fired generator is being installed to provide backup power to the electric motor operators. In addition, a section of new high lift header is being installed along with header isolation valves for the high lift pumps.

Other Important Info:
The construction contract, CON-281, for this CIP project was awarded to Weiss Construction and the notice to proceed issued on October 1, 2018. The project is scheduled for completion by November 2021.

Challenges: Sequencing the demolition and replacement of the existing oil hydraulic power system will require shutdown of individual high lift pumping units.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$218	$218	$218	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-034)	$653	$653	$653	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$4,926	$4,926	$4,926	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 113003

Project Title: Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Southwest
Lookup Location: Southwest WTP

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Shakil Ahmed

Director: Grant Gartrell

Project Score
52.4

Problem Statement:
Most of the plant's process mechanical, building mechanical and electrical systems are original to the plant (circa1962) and are nearing or are past end of useful service life. As a result, additional plant maintenance effort is necessary to meet plant operational needs.

Scope of Work/Project Alternatives:
The work includes design and construction services for the replacement of numerous large-diameter butterfly valves and water-control gates throughout the low-lift, high-lift, filtration, and flocculator buildings. The low- and high-lift pumping units, flocculators and filters will all be improved considered the current and 20-year projected demands so that they are all right sized.

Other Important Info:
This work is included in the 2015 water master plan update. The aforementioned water master plan update also recommends that GLWA consider decommissioning treatment at the Southwest Water Treatment Plant if water demand continues to trend in a downward direction, which has been the case.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$137	$0	$0	$0	$0	$0	$0	$0	$0	$0	$137
Design & Construction Assistance # 1	$21,674	$0	$0	$0	$0	$0	$0	$0	$0	$0	$21,674

CIP Number: 113006

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

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Southwest
Lookup Location: Southwest WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jacob Mangum

Director: Grant Gartrell

Project Score
90.6

Problem Statement:
The existing chlorine gas scrubber is nearing its end of useful service life and its absorption media will be expiring within the next few years; and therefore requires replacement. Similarly, the existing raw water screening system are original to the plant (circa 1962), are not functional, and are beyond repair. As a result, this system also requires replacement. Both the chlorine gas scrubber and raw water screening systems will require ancillary equipment improvements related to electrical,...

Scope of Work/Project Alternatives:
This project will be delivered under a design-build project delivery model. The existing gas chlorine scubber and raw water screens will be replaced with new system equipment meeting current building codes and industry best practices. The new gas chlorine scrubber and raw water screens that will be installed will be designed for current and projected water demans in accordance with the recommendations of the 2015 Water Master Plan Update project; therefore this new equipment will be right-sized...

Other Important Info:
GLWA intends to use the services of AECOM under its CIP program management contract to implement this design-build project.

E. Klun 8/27/20 update as follows:
1. RFP for DB contract delivery underway by AECOM under CS-272 Task 71011A.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$297	$204	$204	$46	$46	$0	$0	$0	$46
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design-Build # 1	$7,725	$0	$0	$3,375	$4,350	$0	$0	$0	$4,350

CIP Number: 113007

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

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Southwest
Lookup Location: Southwest WTP

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Shakil Ahmed

Director: Grant Gartrell

Project Score
38.7

Problem Statement:

Most of the existing low- and high- lift pumping station and administration buildings' mechanical equipment (HVAC, dehumidification, plumbing) and architectural components such as doors, windows, floors, and furnishings, are over 50 years old; and therefore are beyond their normal useful service life. Additional architectural improvements at Southwest Water Treatment Plant will include renovation of staff locker rooms and bathrooms, including a restroom designed for female staff.

Scope of Work/Project Alternatives:

This project would be delivered using a design-bid-build project delivery method. The scope of work would generally include:
1. Design of the project.
2. Remove existing building mechanical and architectural systems.
3. Install new heating and ventilating systems process and administration areas.
4. Install new air-conditioning systems for administration areas.
5. Install new dehumidification systems for the high -lift header vault.
6. Install new interior and exterior doors and windows.
...

Other Important Info:

CS-1528 water master plan update included these improvements.

CIP Number: 113007

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY28-32
GLWA Salaries	$50	$0	$0	$50
Design & Construction Assistance # 1	$949	$0	$0	$949

CIP Number: 113008

Project Title: SWP Reservoir Replacement

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Southwest
Lookup Location: SWP
☑ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

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

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Project Score
75.6

Problem Statement:

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

Scope of Work/Project Alternatives:

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

Other Important Info:

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$275	$0	$0	$0	$0	$0	$0	$0	$228
Design/Engineering	$4,866	$0	$0	$0	$0	$0	$0	$0	$4,018
Construction	$39,858	$0	$0	$0	$0	$0	$0	$0	$30,036

CIP Number: 114001

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Erich Klun

Director: Grant Gartrell

Project Score
65.3

Problem Statement:
The existing filtration system equipment (i.e. filter media, surface wash sweeps, filter piping, filter control valves & operators, electrical, lighting, instrumentation and controls) in the 1958 Filter Plant are original to construction and are all well beyond their useful service life. Reconstruction of the 40 filters in the 1958 Filter Plant and 19 filters in the 1930 Filter Plant that have experienced failures to their plastic-block underdrains is required to maintain reliable water product...

Scope of Work/Project Alternatives:
This project includes the study, design (CS-1425) and construction assistance (CS-1425 and CS-200) of improvements to the Springwells WTP that includes the rehabilitation of the 1958 Filters, rehabilitation of failed 1930s Filters, update of Operation and Maintenance Manuals, and replacement of Phosphoric Acid feed system. Provide construction services to furnish and install new filter media, underdrains, filter valves, and rate controllers; replace the existing filter control consoles, hydraul...

Other Important Info:
There are a total of 108 filters at the Springwells Water Treatment Plant. This project has reconstructed 59 of these filters, including all 40 filters at the 1958 filter building and 19 filters at the 1930 filter building. The 19 filters at the 1930 filter building were previously equipped with plastic-block underdrains with porous plates. These underdrains failed and were replaced with low-profile type 316 stainless steel, slotted direct-media retaining underdrains.

CIP Number: 114001

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$5,886	$5,886	$5,886	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-200, CS-1425)	$2,788	$2,788	$2,788	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (SP-563, CON-133)	$30,557	$30,557	$30,557	$0	$0	$0	$0	$0	$0	$0	$0
Pre-CAFR Actuals (SP-563)	$60,532	$60,532	$60,532	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 114002

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

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☑ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Erich Klun

Director: Grant Gartrell

Project Score
90.9

Problem Statement:

Existing low- and high-lift pumping system electrical switchgear is original (1930s) and are well beyond their useful service life. This switchgear is unsafe, not reliable and is oversized for current and projected demands. In addition, the existing pumping units are a mix of 1930s and 1950s units and are also in need of either replacement or in the case of the pumps rehabilitation. The exterior windows on the pumping plant building are also original (1930s), are in poor condition and are not w...

Scope of Work/Project Alternatives:

This CIP project will be delivered under a design-bid-build project delivery using a single-prime engineering consultant and multiple prime construction contracts to deliver the entire built project. The scope of work generally includes:
1. Replacement of low- and high-lift pumping units, including pumps, motors, valves, and piping.
2. Replacement of exterior windows in the pump house, turbine house, boiler house, and switch house.
3. Replacement of medium-voltage electrical system.
4. Repl...

Other Important Info:

E. Klun 8/19/20 updates:
1. Scope updates are being added to the design being completed under Contract CS-103 via Amendment No. 2 that is expected to go for approval in September of October 2020. Cashflow and schedule updates herein reflect both the engineering and construction impacts of an approved CS-103 Amendment No. 2.

CIP Number: 114002

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$1,145	$635	$635	$46	$46	$46	$46	$46	$46	$231	$231
Study & Design & Construction Assistance # 1 (CS-103)	$15,244	$6,090	$6,090	$831	$831	$833	$831	$831	$831	$4,158	$4,163
Design-Build # 1 (1900134, 1904795)	$15,249	$6,217	$6,217	$9,032	$0	$0	$0	$0	$0	$0	$0
Construction (Contract B)	$34,805	$0	$0	$4,562	$11,122	$19,120	$0	$0	$0	$30,242	$0
Construction (Contract C)	$199,463	$0	$0	$0	$0	$0	$16,394	$16,801	$25,122	$58,319	$141,143
Construction (Contract D)	$16,000	$0	$0	$0	$0	$0	$8,679	$7,320	$0	$16,000	$0

CIP Number: 114005

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

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
76.4

Problem Statement:

Existing administration building is nearly 90 years old with many of its facilities being original. The building needs architectural, plumbing and electrical improvements. Improvements will provide reliable fire protection to all plant facilities, replace non-functioning isolation valves and hydrants, provide fire system backflow protection, and bring the fire system into conformance with the requirements of the Dearborn Fire Marshal.

Scope of Work/Project Alternatives:

The work includes, but not necessarily limited to, removal and replacement of the existing plumbing piping, fittings, valves, plumbing fixtures, and any other necessary accessories. The existing underground fire protection line loops the Pump, Switch, Boiler and Turbine houses and is supplied water off the high lift headers in the Pump House Header Vault. The supply does not currently have backflow prevention and several branches off the loop used to feed an irrigation system serving the grassy...

Other Important Info:

The project was first identified in the November 2002 Needs Assessment completed by Hazen & Sawyer under CS-1304. The opinion of probable construction at that time for just replacing the existing piping was $1,076,400.

Project History: The fire loop and appurtenances are original to the existing plant commissioned around 1930. The loop crosses the construction staging area (blue tarps shown in the Project Map from Contract SP-563) in the northeast corner of the site and has been exposed to ...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$297	$105	$105	$18	$0	$0	$0	$0	$0	$0	$173
Study & Design & Construction Assistance # 1	$1,786	$1,073	$1,073	$631	$0	$0	$0	$0	$0	$0	$81
Construction (Build) # 1	$8,024	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,024

CIP Number: 114007

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

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Picture

Project Engineer/Manager: Justin Kietur

Director: Grant Gartrell

Project Score
36.8

Problem Statement:
Powdered activated carbon (PAC) is added to the treatment process to control taste and odor issues in the raw water supply. Taste and odor issues are infrequent, but the existing PAC system is difficult to operate and maintain when called upon for use. A more operator friendly and easier to maintain system is needed. The plant is able to feed PAC through extraordinary measures due to deficiencies in the system. These extraordinary measures create additional operations and maintenance expense an...

Scope of Work/Project Alternatives:
Replacement of the existing powdered activated carbon system with a new system of a design that provides improved operations and maintainability when PAC dosing is needed.
The scope of work will generally include the following:
1)Repair of concrete and piping at the dry carbon delivery station and replacement of dust collectors.
2)Inspection of underground carbon slurry tanks and repair of damage to concrete and fiberglass lining.
3)Replacement of PAC transfer pumps and associated piping, ...

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

CIP Number: 114007

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$148	$0	$0	$0	$0	$0	$0	$0	$0	$0	$148
Study & Design & Construction Assistance # 1	$974	$0	$0	$0	$0	$0	$0	$0	$0	$0	$974
Construction (Build) # 1	$2,896	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,896

CIP Number: 114008

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

Project Status: Pending Closeout
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Updated project photo

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
86.1

Problem Statement:
Existing sedimentation basin gates, guides and hoists are early 1930s and are in need of replacement. Also, operation of the sluice gates in their existing condition and design does not meet current best practices for safe maintenance and operation.

Scope of Work/Project Alternatives:
This CIP project is being delivered under a design-build project delivery method and generally includes the following scope of work:
1. Demolition of the existing eight (8) 1930 sedimentation basins gates, guides, and hoist.
2. Installation of the new eight (8) 1930 sedimentation basins gates, guides, and actuators.
3. Concrete restoration within the four (4) 1930 sedimentation basins.
4. Concrete repairs to the air vents, access ramp, access hatches on top of the 1930 sedimentation basin...

Other Important Info:
Challenges: Work will require the 1930's plant to be shutdown during three low demand seasons to complete the work. This contractor will need to coordination with CON-170: Sludge Removal and Disposal for cleaning the sedimentation basins, SP-563, CON-253, and other construction projects to ensure that the system can handle the long duration shutdown.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$277	$275	$275	$1	$0	$0	$0	$0	$0	$0	$0
Design # 1 (CS-289)	$22	$22	$22	$0	$0	$0	$0	$0	$0	$0	$0
Design-Build # 1 (1802774)	$13,679	$10,866	$10,866	$2,813	$0	$0	$0	$0	$0	$0	$0

CIP Number: 114010

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

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Erich Klun

Director: Grant Gartrell

Project Score
58.3

Problem Statement:

Six (6) of the seven (7) 72-inch mains leaving the site are original to the 1930 plant construction and consist of riveted steel pipe material. Main No. 7 is a prestressed concrete cylinder pipe material installed in 1958. The steel mains are known to be leaking and are in need of replacement to maintain system reliability. Additionally, isolation valves associated with the 72-inch mains need to be replaced because several are known to leak to the point where they are unable to isolate flow. It...

Scope of Work/Project Alternatives:

“This project consists of removal and replacement of the HPZ and IPZ discharge header piping and yard piping with additional replacement occurring outside the Springwell’s Property to locations that minimize the number of isolation points required for work to be completed. The scope will be divided between IPZ and HPZ to maintain operations during construction. This project also includes misc. site infrastructure improvements such as the 12” Fire Loop, new guardhouse, secondary entrance off o...

Other Important Info:

E. Klun 8/28/20 update based on the outcome of AECOM’s effort on CS-272 Task 71013A, Phase I is as follows:

The project will be delivered by multiple projects comprised of equipment procurement, DB construction, consultant services, and DBB construction contracts as follows:

1.Contract A, Procurement Contract for Header Sectional/Isolation Butterfly Valves – includes the procurement of large diameter, high-performance butterfly valves to be installed under Contract D.
2.Contract B, Pro...

CIP Number: 114010

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$1,608	$531	$531	$571	$0	$0	$0	$0	$0	$0	$252
Design & Construction Assistance # 1 (CS-272)	$23,097	$0	$0	$0	$0	$0	$0	$0	$0	$0	$12,094
Construction (Build) # 1	$170,983	$0	$0	$0	$0	$0	$0	$0	$0	$0	$11,964

CIP Number: 114011

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

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Maintenance building photo 1 of finished section of piping

Project Engineer/Manager: Brian VanHall

Director: Grant Gartrell

Project Score
77

Problem Statement:

The steam, condensate return, compressed air, and natural gas piping systems at the Springwells Water Treatment Plant need to be replaced to ensure overall reliability of the plant. These systems are original to the plant (i.e. from 1930s or 1950s) and are beyond their useful life. These existing steam and condensate systems are in poor condition and require multiple repairs each heating season due to frequent failures. These repairs often require taking the entire steam system out of service w...

Scope of Work/Project Alternatives:

This project is being delivered using a design-bid-build project delivery method. This engineering services contract involves designing a new, more energy-efficient steam heating system for the entire Springwells Water Treatment Plant, including all steam unit heaters, steam piping, condensate return piping, condensate return pumping stations, steam pressure reducing valves, and appurtenances. This project also involves replacing the compressed air piping in the plant used for service air. Once...

Other Important Info:

Many components of the existing system are original to the existing heating system, are not functioning and need to be demolished/removed. Seasonal work and sequencing with the heating season is required.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$262	$166	$166	$63	$32	$0	$0	$0	$0	$32	$0
Study & Design & Construction Assistance # 1 (CS-1671)	$1,384	$1,057	$1,057	$216	$110	$0	$0	$0	$0	$110	$0
Construction (Build) # 1 (CON-252)	$24,205	$17,240	$17,240	$6,300	$665	$0	$0	$0	$0	$665	$0

CIP Number: 114013

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: SPW WTP

- [ ] **Project New to CIP:**

- [ ] **Innovation**
- [ ] **WW Master Plan**
- [x] **Water Master Plan Right Sizing**
- [x] **Redundancy**
- [x] **NE WTP Repurposing**
- [ ] **Linear Assets Outside of Facilities**
- [ ] **Predecessor Project(s)**

Project Engineer/Manager: Erich Klun

Director: Grant Gartrell

Project Score
81.4

Problem Statement:

A new reservoir fill line to the Springwells Water Treatment Plant is needed to provide finished water to the Springwells high service area from the GLWA Southwest and Waterworks Park treatment plants while the Springwells raw water tunnel is rehabilitated under a separate contract. The new reservoir fill line will allow the Springwells high-lift pumping facility to operate and feed its high-pressure district while the treament works at Springwells are temporairly out of service. For example, t...

Scope of Work/Project Alternatives:

This project is being delivered under a design-bid-build project delivery method. The scope of work generally includes:
1. Designing the project.
2. Constructing the new reservoir fill piping, flow control energy disappaiting valves, valve vault, and appurtenances.
3. Connecting new piping to existing 72-inch diameter steel water transmission main.
4. Commissioning and testing the new reservoir filling facility.
5. Restoring the site.

E. Klun 8/20/20 updates as follows:
1. Add system w...

Other Important Info:

Potential delays due to isolation of 1926 main and coordination with CON-133 (WTP metering) requiring expercising and using old valves. Control of the reservoir filling operation by SCC with significant roles played by SWP, WWP, NEP and SPP operators.

CIP Number: 114013

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$417	$416	$416	$1	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-038)	$358	$358	$358	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-253)	$3,943	$3,931	$3,931	$11	$0	$0	$0	$0	$0	$0	$0

CIP Number: 114016

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

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
71.7

Problem Statement:

The existing concrete pavement that covers the 1958 settled water conduits has failed with significant concrete deterioration and corrosion of the reinforcement embedded steel. The condition of the concrete pavement has become much worse over the past 12 months. The condition of the concrete is poor and is crumbling in many major areas. The conditions in certain areas are such that there are now potential safety hazards to those who have to walk on the pavement. The plant chemists have to walk ...

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-bid-build project delivery method and generally includes the following scope of work:
1. Demolition of the existing concrete pavement that covers the 1958 settled water conduit and the loading dock.
2. Placement of new concrete pavement that covers the 1958 settled water conduit and the loading dock.
3. Demolition and installation of handrail around the 1958 settled water conduit.
4. Demolition of the existing concrete loading dock.
5....

Other Important Info:

Challenge: Equipment limitations on the settled water conduit and not damaging the structure concrete of the settled water conduit.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$220	$178	$178	$41	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$1,304	$250	$250	$1,054	$0	$0	$0	$0	$0	$0	$0

CIP Number: 114017

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Springwells WTP

☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
51.4

Problem Statement:
The existing flocculator drives, motors, and control panels are beyond useful service life.

Scope of Work/Project Alternatives:
This CIP will be delivered under a design-bid-build project delivery model. The scope of work will generally include the following:
1. Replacement of the existing flocculator drives, motors, and control panels.
2. Replacement of all drive shaft bearings and associated grease lines.
3. Replacement of access doors between the flocculator chambers
4. Replacement of ladder rungs into all flocculators.
5. Improvement of flocculation system related instrumentation and controls.
6. Flocculator...

Other Important Info:
Implementation of this CIP project is being sequenced and coordinated with another Springwells WTP CIP project, namely the 1930 Sedimentation Basins Sluice Gate Improvements Project.

CIP Number: 114017

Project Title: Springwells Water Treatment Plant Flocculator Drive Replacements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$275	$45	$45	$52	$52	$53	$52	$17	$176
Design & Construction Assistance # 1	$2,240	$144	$144	$547	$607	$404	$403	$134	$1,549
Construction (Build) # 1	$18,213	$0	$0	$0	$0	$8,392	$8,393	$1,427	$18,213

CIP Number: 114018

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

Project Status: Active - Pre-Procurement - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Springwells
Lookup Location: Water Treatment Plants
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Picture

Project Engineer/Manager: Justin Kietur

Director: Grant Gartrell

Project Score
62.7

Problem Statement:
The electrical substation located inside the Service Building provides electrical service to the entire service building including the filter wash water pumping units. The existing electrical substation is a double-ended unit that has experienced corrosion to its interior components and electrical cables. As a result the substation does not automatically switch-over during power trips and requires manual switch-over, which defeats the purpose of the automatic switch-over feature of the substati...

Scope of Work/Project Alternatives:
Project will be delivered using a progressive design-build project delivery. The scope of improvements will generally include:
1. Replacement of the electrical substation in the 1958 Service Building
2. Connection of replacement electrical substation to Ovation for status monitoring
3. Replacement of electrical panel in 1930 plant and new conduit and cable runs to the associated equipment
4. Rehab of masonry on exterior of phosphoric acid fill station
5. Insulation of piping and pipe chase...

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$172	$0	$0	$6	$20	$72	$72	$0	$165
Design/Engineering	$2,162	$0	$0	$23	$34	$1,727	$377	$0	$2,139

CIP Number: 115001

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

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Waterworks Park WTP
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☑ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Score
77.9

Problem Statement:
The existing yard piping is 80-140 years old and requires replacement with new piping installed in a more efficient configuration.

Scope of Work/Project Alternatives:
This project is being delivered using a design-bid-build project delivery method. The scope of work generally includes:
1. Designing the project.
2. Removing existing yard piping, valves and buried venturi meters and related vaults.
3. Constructing new yard piping, valves, water production flow meters, buried valve and meter vaults, and related system equipment.
4. Connecting to existing transmission main piping.
5. Testing and commissioning the new main, valves and water production flow m...

Other Important Info:
This project is being coordinated with the new Waterworks Park to Northeast Transmission Main.

Challenges: Complicated sequence of construction, and demands of DWSD must be maintained along with coordination transmission system between Water Works Park and Northeast WTPs. Condition of existing valves required to complete the work is unknown. Complex construction staging is accounted for in the design to avoid loss of service and delays to the construction contract. Multiple line stops are in...

CIP Number: 115001

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$324	$86	$86	$56	$56	$56	$56	$10	$0	$180	$0
Study & Design & Construction Assistance # 1 (CS-055)	$5,085	$2,538	$2,538	$608	$608	$609	$608	$111	$0	$1,938	$0
Construction (Build) # 1 (2000610)	$49,182	$2,674	$2,674	$11,125	$11,125	$11,155	$11,125	$1,977	$0	$35,383	$0
Miscellaneous	$449	$449	$449	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 115004

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Waterworks Park WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Michael Dunne

Director: Grant Gartrell

Project Score
95.4

Problem Statement:
The existing gas chlorine feed system has experienced numerous leaks and has compromised the safety of plant personnel. In addition, the chlorine gas leaks caused significant damage to all equipment inside the chlorine storage room. Secondary damage also occurred to equipment in adjacent rooms.

Scope of Work/Project Alternatives:
This project is being delivered under a design-bid-build project delivery method. The scope of work generally includes the following:
1. Removal of existing chlorine feed system, including evaporators, feeders and associated electrical, instrumentation and control equipment.
2. Installation of new chlorine evaporators, feeders, and associated electrical, instrumentation and control equipment.
3. Installation of new heating, ventilating and air-conditioning system equipment in the chlorine st...

Other Important Info:
Project History: The WWP facility began serving customers with finished water in 2003. More recently, the chlorine system has had one major leak and several minor leaks on a recurring and more frequent basis. Since chlorine is a highly toxic material, yet integral for providing finished water in accordance with the Safe Drinking Water Act, a study and design project was initiated under the CIP allowance as project CS-1721. This construction project will be based on the study and design conducte...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$65	$65	$65	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-1721)	$933	$933	$933	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-208)	$5,903	$5,903	$5,903	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous	$64	$64	$64	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 115005

Project Title: WWP WTP Building Ventilation Improvements

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Waterworks Park WTP

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Water Works Park Water Treatment Plant

Project Engineer/Manager: Michael Dunne

Director: Terry Daniel

Project Score
93

Problem Statement:

The existing ventilation systems are not adequate for the chemical storage rooms, the ozone generator room, ozone destruct room, laboratory rooms, pilot plant rooms, flocculation and sedimentation rooms, and filter galleries at the Water Works Park Water Treatment Plant. Inadequate ventilation poses safety hazards to employees and visitors alike.

Scope of Work/Project Alternatives:

This project will be delivered using a design-bid-build project delivery method. The scope of work will generally include the following:
1) Design of the improved, new ventilation systems for the facility.
2) Selective removal of existing ventilation system equipment.
3) Construction of new mechanical ventilation systems.
4) Installation of electrical feeders for new mechanical ventilation equipment.
5) Installation of new instrumentation equipment for monitoring and alarms, including nec...

Other Important Info:

Operational components may be identified to reduce staff exposure and reduce complexity of ventilation system.

CIP Number: 115005

Project Title: WWP WTP Building Ventilation Improvements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$197	$3	$3	$48	$48	$48	$48	$0	$0	$145	$0
Design & Construction Assistance # 1 (1802499)	$1,390	$560	$560	$237	$197	$197	$197	$0	$0	$592	$0
Construction (Build) # 1 (1802499)	$9,861	$0	$0	$0	$5,154	$2,853	$1,853	$0	$0	$9,861	$0

CIP Number: 115006

Project Title: Water Works Park Site/Civil Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Waterworks Park WTP
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Water Works Park Water Treatment Plant

Project Engineer/Manager: Michael Dunne

Director: Grant Gartrell

Project Score
53.9

Problem Statement:
Many of the existing roadways and pedestrian sidewalks have substantial cracking, crumbling concrete and un-even surfaces whose condition becomes worse every year. The concrete bases for several portions of the site perimeter security fencing are also heavily deteriorated with crumbling concrete. Additionally, there is not sufficient employee and visitor parking space for the facility and new parking areas are needed to meet the needs of employees and visitors alike. Furthermore, there is no tr...

Scope of Work/Project Alternatives:
This project will be delivered using a design-build project delivery. The schedule is predicated on using AECOM's design build assistance services under its CIP Program Management Contract CS-272. The scope of work for this project generally includes the following:
1. Construct 30 car parking lot adjacent to plant employee lot.
2. Construct 20 car parking lot across from maintenance garage to serve as GLWA vehicle parking.
3. Construct 10 car parking lot across from engineering building to s...

Other Important Info:

CIP Number: 115006

Project Title: Water Works Park Site/Civil Improvements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$148	$0	$0	$0	$0	$0	$0	$0	$0	$0	$148
Design & Construction Assistance # 1 (CS-272)	$1,343	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,343
Construction (Build) # 1 (TBD)	$4,389	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,389

CIP Number: 115007

Project Title: Water Works Park High Lift Pumping Station Modernization

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Waterworks Park WTP
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☐ **Redundancy**
☑ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Water Works Park High Lift Pumping Station

Project Engineer/Manager: Michael Dunne

Director: Grant Gartrell

Project Score
58.3

Problem Statement:
In accordance with GLWA's Master Plan, the Northeast Water Treatment Plant is scheduled to be repurposed. Most of the water production and pumping burdens will be shifted to the Water Works Park Water Treatment Plant. There is an apparent need to identify opportunities and improve configurations, capacity, redundancy, electrical efficiency, instrumentation, monitoring and controls of the High Lift pumping system at Water Works Park.

Scope of Work/Project Alternatives:
This project will be delivered under a progressive design build delivery method. In general, the scope will contain the following items:
1. Replace or re-engineer pumps and motors based on an evaluation of contemporary and future flow, pressure, and energy needs.
2. Replace or improve the current high-pressure water system to create a more robust process.
3. Improve ventilation in the pump room to allow pumping units to operate at proper working temperatures.
4. Replace or repair isolation...

Other Important Info:
The current pumping system in the High Lift building at Water Works Park was constructed in the early 1960s. Now, 60 years later, it is necessary to realign Water Works Park's pumping system with contemporary and future flow, pressure, and energy requirements.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$459	$0	$0	$0	$0	$0	$0	$0	$0	$0	$279
Design-Build	$96,340	$0	$0	$50	$0	$0	$0	$0	$0	$0	$38,070

CIP Number: 115008

Project Title: Jefferson Main Replacement Project

Project Status: Reclassified
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: City of Detroit
☑ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Scope
78,9

Problem Statement:
The City of Detroit is planning on performing a complete reconstruction of Jefferson Avenue from I-375 to Alter Street in 2023. The existing GLWA 48-inch cast iron transmission main that is within Jefferson Avenue from Water Works Park to I-37 was constructed in 1915 and is beyond its service life. Given that Jefferson Avenue will b reconstructed, GLWA would like to repl ce th 48-inch Jefferson Main at the same time as Jefferson Avenue is being reconstructed. Replacing the Jefferson Main avo...

Scope of Work/Projec Alte natives:
Scope of wo for this pr ject involves replaceme t of ap roximate 17,650 linear feet of 48-inch tra smission ma n wi hin Jefferson Aven e fr m Wa r Works Par to I-375.

Ot r Importan Info:
This w rk w l be included with the overall Jefferso Avenue Streetscape project. GLWA will ost share for their portion of the work associated ith the 48-inch transmission main replacement.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 115009

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: City of Detroit
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Photo of Water Works Park Plant

Project Engineer/Manager: Jacob Mangum

Director: Grant Gartrell

Project Score
75.3

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	5 Year Total	FY28-32
GLWA Salaries	$136	$0	$0	$0	$0	$0	$0	$0	$136
Design/Engineering	$2,465	$0	$0	$0	$0	$0	$0	$0	$2,465
Construction	$15,737	$0	$0	$0	$0	$0	$0	$0	$15,737

CIP Number: 116002

Project Title: Pennsylvania and Springwells Raw Water Supply Tunnel Improvements

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: General Purpose
Lookup Location: Springwells, Northeast, & Pennsylvania raw water tunnels
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☑ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Project Score
0

Problem Statement:

Significant structural distress in the form of cracking and ovality have been detected in the Pennsylvania, Northeast and Springwells raw water tunnels that deliver raw water to the Northeast and Springwells Water Treatment Plants. The extent and magnitude of the distress requires that these segments of tunnel be rehabilitated and restored to provide renewed structural integrity and consequently reliability.

Scope of Work/Project Alternatives:

This project is being delivered using a progressive design-build project delivery method. The scope of work generally includes supplemental remove operated vehicle (ROV) and personnel diver underwater, detailed investigations to determine the nature, magnitude and extent of total tunnel rehabilitation required. The detailed investigations are also used to collect sufficient information and data to determine the preferred design and construction approach best suited to the conditions identified ...

Other Important Info:

The tunnels are approximately 80 to 100 feet below ground surface. Dewatering the tunnels to repair them will create extensive stresses that must be considered prior to performing the work. Maintaining a supply of raw water to Springwells, Northeast and Water Works Park throughout construction to meet finished water production requirements/demands of the system. Specialized/complicated construction.

Project History: Portions of the Raw Water Tunnel system are approaching 100 years of servi...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$338	$108	$108	$45	$45	$45	$45	$45	$0	$183	$0
Design-Build # 1 (DB-150, CS-166, CS-187)	$95,545	$27,421	$27,421	$13,617	$13,617	$13,654	$13,617	$13,617	$0	$54,506	$0
Miscellaneous	$3,102	$3,102	$3,102	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 116005

Project Title: Belle Isle Seawall Rehabilitation

Project Status: Active - Procurement - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Belle Isle Intake

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Aerial image of Belle Isle intake structure and lagoon.

Project Engineer/Manager: Michael Dunne

Director: Terry Daniel

Project Score
63.4

Problem Statement:

The Belle Isle intake system is the source water entry point for three of the five GLWA water treatment plants. The intake is surrounded by a man-made dike system that creates a large lagoon on the northeast tip of Belle Isle. The dike system is showing signs of substantial erosion on the tip of the southern dike. Other areas on the southern dike are showing signs of erosion to a lesser degree. On the northern dike, vegetation is prominent that is likely to cause premature failures, if not ...

Scope of Work/Project Alternatives:

This design/build project will evaluate and recommend solutions to permanently correct ongoing erosion issues and current deficiencies that may result in future dike erosion and/or failure. The general scope will include.
1. Installing sheet piling, tie backs, and rip rap at the tip of the lagoon.
2. Stabilize lampposts that are leaning due to erosion. .
3. Install armor stone where erosion is beginning, but not yet significant.
4. Grade and dress lagoon access road in select areas.
5. Re...

Other Important Info:

The Belle Isle lagoon, formed by the man-made dikes, was designed to prevent frazil ice from impeding water flow into the raw water tunnels. Continued erosion of the dike system will lead to short circuiting of the intake lagoon. The design intent of the lagoon, and its benefits, will be compromised and leave the raw water intake for three water treatment plants vulnerable.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
GLWA Salaries	$133	$0	$0	$29	$51	$52	$103
Design/Engineering	$2,406	$0	$0	$210	$548	$1,647	$2,196

CIP Number: 116006

Project Title: Belle Isle Intake System Rehabilitation and Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Water Works Park
Lookup Location: Belle Isle

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Belle Isle Intake

Project Engineer/Manager: Michael Dunne

Director: Terry Daniel

Project Score
55.8

Problem Statement:
The Belle Isle Intake structure and man-made lagoon were constructed in the 1930s. Periodic maintenance and improvements have taken place over the years to keep the building and lagoon in operating condition. As a result of recommendations from the State and CS-187 - Raw Water Condition Assessment, another such project is needed. The intake system has experienced a buildup of sediment in critical areas that needs to be removed, miscellaneous vegetation has grown on the dike system and needs ...

Scope of Work/Project Alternatives:
This CIP project will be delivered under a design-bid-build project delivery method and will generally include the following:
1. Removal of accumulated sediment in the intake building, emergency intake system, and tunnel system.
2. Electrical modernization on the intake grounds.
3. Architectural repairs to the intake building superstructure including, painting, masonry tuck-pointing, roofing, and stonework.
4. A code compliant emergency eyewash and shower station.
5. Roof structure to pro...

Other Important Info:
The intake system is the very first step in the water treatment process. A fully reliable and modern intake system is crucial in maintaining superior drinking water.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$229	$0	$0	$0	$0	$0	$0	$0	$0	$229
Design & Construction Assistance	$3,133	$0	$0	$0	$0	$0	$0	$0	$0	$3,133

CIP Number: 116007

Project Title: System Electrical Power Improvements

Project Status: Active - Pre-Procurement - Design
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: General Purpose
Lookup Location: Multiple Counties
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Eric Griffin

Director: Grant Gartrell

Project Score
77.1

Problem Statement:
Electrical power redundancy and reliability is critically important for the successful operation of the sewage pumping stations, especially during storm events. The storm events and performance of certain sewage pumping stations during the summer of 2021 necessitate that GLWA review the firm and total installed capacities of pumping units, the redundancy and reliability of power supplies, electrical switchgear configurations, and backup power generation capabilities at its sewage pumping statio...

Scope of Work/Project Alternatives:
Conduct a condition assessment and needs assessment of the primary and secondary electrical systems at all of GLWA's sewage pumping stations. The condition/needs assessment will include but not be limited to:
1.Primary power feeds
2.Electrical system configuration
3.Electrical switchgear, motor control centers, VFDs, etc.
4.Motor controls
5.Medium-voltage power system
6.Onsite backup power generation and distribution systems
7.Other relevant and necessary electrical power, distri...

Other Important Info:

CIP Number: 116007

Project Title: System Electrical Power Improvements

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	5 Year Total
GLWA Salaries	$91	$0	$0	$45	$46	$91
Design/Engineering	$3,908	$0	$0	$2,184	$1,723	$3,908
Construction	$0	$0	$0	$0	$0	$0

CIP Number: 122003

Project Title: Water Works Park to Northeast Transmission Main

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: WWP to NE WTP
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☑ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Score
76.8

Problem Statement:
The 2015 GLWA Water Master Plan update indicated that the regional system has significant excess capacity for water treatment compared to projected water demands. The analysis contained in the Water Mater Plan update indicated that for average day demand conditions, the five WTPs typically operate between 23 percent to 35 percent of the rated treatment capacity and for maximum day demand conditions, the five WTPs typically operate between 38 percent to 67 percent of the treatment rated capacity...

Scope of Work/Project Alternatives:
This project includes three separate construction phases for the completion of the overall water transmission system from Water Works Park to Northeast:
(1) Phase 1 - Construction of 84-inch yard piping and a Flow Control Facility at the Northeast site.
(2) Phase 2 - Construction of 4 miles of 81-inch water transmission main (WTM) from the Northeast site to I-94.
(3) Phase 3 - Construction of 6,000 feet of 60-inch/69-inch WTM along Hurlbut from I-94 to the intersection of Hurlbut/Sylvester.

Other Important Info:
Challenges: Construction of large diameter WTM in the road ROW north of I-94 and along Hurlbut south of I-94.
This project was recommended as part of the 2015 Water Master Plan Update to align treatment capacity with decreasing water demands.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$646	$302	$302	$49	$49	$49	$49	$49	$49	$246	$49
Phase #1 (CS-152/1803258)	$28,937	$21,022	$21,022	$1,367	$6,527	$19	$0	$0	$0	$6,546	$0
Design/Engineering	$33,149	$0	$0	$5,671	$17,327	$19,052	$19,020	$19,020	$19,020	$93,440	$19,072

CIP Number: 122004

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

Project Status: Active - Pre-Procurement - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Imlay Station to North Service Center
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Grant Gartrell

Director: Grant Gartrell

Project Score
77.5

Problem Statement:
Project critical to providing isolation and redundancy to Lake Huron WTP supply, while protecting the water supply from potential contamination at the former G&H Industrial Landfill site. Project includes relocation around existing superfund landfill addition of isolation valves along the 96-inch water transmission main.

Scope of Work/Project Alternatives:
Relocate 2.5 miles of 96-inch transmission main currently located in an EPA NPL landfill, a portion of which is submerged in landfill leachate. Relocation includes crossing the Clinton River, coordination with many various authorities having jurisdiction and easement acquisition. Isolation valve installation portion of the project provides the ability to isolate segments of the 96-inch main between Imlay Station and North Service Center for maintenance while maintaining customer expected level ...

Other Important Info:
Challenges: Shutdown, continued customer service, isolation valve installations while maintaining the Lake Huron WTP supply to Rochester Station. Property acquisition will be required for the chesterfield temporary booster station and East Pond Creek discharge facility for relocation around the landfill.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$569	$186	$186	$47	$47	$48	$47	$47	$47	$239	$96
Study # 1 (CS-165, 1900741, MISC)	$33,196	$9,487	$9,487	$3,714	$3,714	$3,724	$3,714	$3,714	$3,714	$18,580	$1,414
Construction (Build) # 1	$226,076	$0	$0	$4,771	$11,237	$36,227	$36,237	$36,237	$31,237	$151,179	$70,125

CIP Number: 122005

Project Title: Schoolcraft Road Water Transmission Main

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Schoolcraft water main
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☑ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Project Score
54.7

Problem Statement:
We currently operate an existing 48-inch water transmission main on West Bound Schoolcraft Road. This existing PCCP transmission main was manufactured by Interpace Corporation which has a long-documented history of PCCP failures due to manufacturing means and methods of the pre-stressed wires. Due to excessive breaks over the years and the downstream effect on customers, we are improving the transmission system reliability and redundancy by installing a new 48-inch water transmission main on Ea...

Scope of Work/Project Alternatives:
Design and Construction of approximately 12,000 linear feet of new PCCP or Carbon Steel 48-inch water transmission main along Eastbound Schoolcraft service drive between Middlebelt and Beech Daly. Including isolation valves, blowoff's, valve vaults, manhole entrances and related appurtenances. Upon completion and tie-in of the new Eastbound Schoolcraft transmission main the existing will be abandoned in place.

Other Important Info:
Designed under CS-1488 by Somat Engineering

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$749	$703	$703	$45	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-1488, CS-259)	$686	$441	$441	$245	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1804129)	$13,613	$5,549	$5,549	$8,063	$0	$0	$0	$0	$0	$0	$0

CIP Number: 122006

Project Title: Wick Road Water Transmission Main

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Romulus
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Project Score
62.9

Problem Statement:
Existing water main from Wick Station to Ypsilanti station has history of excessive breaks. Additionally, the main is the only primary connection between the two facilities with multiple community Master Meters along its alignment. A break in this line is disruptive to several communities dependent upon the failure location. The intent is to improve the transmission system reliability/redundancy by means of constructing a parallel 48-inch water main along Wick Road.

Scope of Work/Project Alternatives:
Design and Construction of the new 48-inch transmission main along Westbound Wick Road in Romulus, MI including isolation valves and interconnects that will tie-in with the existing main along the alignment. Completion of this project will alleviate pressures and potential transients between the two mains, as well as increase reliability/redundancies in the general area.

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$879	$754	$754	$125	$0	$0	$0	$0	$0	$0	$0
Design # 1 (CS-1488, CS-259)	$1,520	$938	$938	$582	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-306, 1803621)	$23,296	$15,440	$15,440	$7,855	$0	$0	$0	$0	$0	$0	$0

CIP Number: 122007

Project Title: Merriman Road Water Transmission Main Loop

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Merriman Rd, Marquette Rd to Lower Rouge River
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☑ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☑ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


Construction on Merriman Rd.

Project Engineer/Manager: Jacob Mangum

Director: Grant Gartrell

Project Score
76.8

Problem Statement:
Currently, several member partners (served by master meters WL-08, WL-03, WL-01, WL-12, WY-01, RS-01, GC-03) are fed by a single 36-inch water transmission main along Michigan Avenue. Construction of this proposed Merriman Road transmission main will provide a second feed to these member partners and therefore provide redundancy. Additionally, construction of this proposed Merriman Road transmission main improves and reinforces water service delivery to the point where the Michigan Avenue Boost...

Scope of Work/Project Alternatives:
This project involves design and construction services associated with the installation of 2 miles of new 30-inch transmission main along Merriman Road between Lower Rouge River and Marquette Road. Alternatives evaluated included new main on either:
1. Hannon Road (rejected because of its poor route relative to other options)
2. Newburgh Road (rejected because it is not technically feasible as it will not meet contract pressures.
3. Merriman Road (accepted because it is superior in its trans...

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$368	$1	$1	$0	$0	$0	$0	$0	$0	$0	$229
Design & Construction Assistance # 1	$3,293	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,282
Construction (Build) # 1	$18,492	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,935

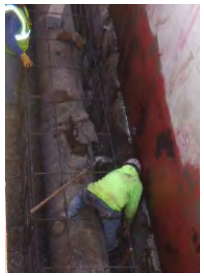
CIP Number: 122011

Project Title: Park-Merriman Road Water Transmission Main

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Venoy Road to Merriman Road to Michigan Ave. Booster Station.

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**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Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
44.1

Problem Statement:

Currently, most of the wholesale master meters serving the cities of Wayne and Westland are fed off a single, "dead-end" transmission main, which provides no redundancy in service aside from customer lateral distribution opportunities. Additionally, Wayne, Westland and Inkster have deduct wholesale meters that are fed off the single, "dead-end" transmission main. Construction of this new 24-inch water main will create a loop for these member partners and thereby eliminate the single, "dead-end"...

Scope of Work/Project Alternatives:

This CIP project is being delivered under a design-bid-build project delivery method and generally includes the following scope of work:
1. Construction of 7,000 linear feet of 24-inch diameter ductile iron water transmission main, which includes 2 directional drills to install this main under the lower Rouge River, and 1 jack-and-bore to install this main under Michigan Avenue.
2. Constructing two new wholesale master meters and associated vaults for the city of Wayne.
3. Associated park im...

Other Important Info:

Challenges: Shutdowns to connect the two new meters with the City of Wayne. The water pressure during these two shutdowns will be reducers and coordination will need to take place with the City of Wayne, their residents and local businesses.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$1,518	$1,494	$1,494	$23	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-259, CS-1488)	$582	$522	$522	$60	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1802775, CON-268?)	$7,217	$5,920	$5,920	$1,296	$0	$0	$0	$0	$0	$0	$0

CIP Number: 122013

Project Title: 14 Mile Transmission Main Loop

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: 8 Mile Rd/ I-275 to 14 Mile Rd/ Haggerty PS
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

14 Mile Loop Project Location

Project Engineer/Manager: Sara Mille

Director: Grant Gartrell

Project Score
76

Problem Statement:

The 14 Mile Transmission Main that currently serves West Bloomfield Township, Farmington Hills, Commerce Township, Novi, Walled Lake, and Wixom is a single feed transmission system. If a disruption to service were to occur on this transmission main, many of the users along this main would experience a complete loss of pressure and flow. This project would provide a transmission main loop to the 14 Mile system to increase redundancy on this branch of the system.

Scope of Work/Project Alternatives:

Install approximately 8 Miles of 54-inch transmission main from 8 Mile Road to 14 Mile Road. It also includes construction of approximately 1 mile of new 24-inch parallel transmission main along 14 Mile from M-5 to west of Decker Road to reinforce the 14 Mile Transmission System.

The work will also include connections to the yard piping and reservoir fill line at the Haggerty Booster Station as well as control valves to regulate flows to and from the 14 Mile transmission main.

Other Important Info:

Project History: The 2015 Water Master Plan Update included a recommendation to evaluate options along this branch of the system to increase redundancy. Since that recommendation, GLWA Water Supply Operations Engineering performed a hydraulic analysis of redundancy alternatives for the 14 Mile Transmission System. The results of the hydraulic analysis was presented at the May 15, 2017 and September 19, 2017 Analytical Work Group Meetings and based on the discussion at these meetings, the Hagger...

CIP Number: 122013

Project Title: 14 Mile Transmission Main Loop

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$965	$782	$782	$51	$51	$52	$27	$0	$0	$131	$0
Design & Construction Assistance # 1 (1802448)	$9,632	$5,707	$5,707	$1,108	$1,108	$1,111	$595	$0	$0	$2,816	$0
Construction (Build) # 1 (1903312)	$6,185	$3,973	$3,973	$1,959	$252	$0	$0	$0	$0	$252	$0
Construction (Build) # 2	$94,635	$0	$0	$23,761	$28,222	$28,051	$14,599	$0	$0	$70,874	$0

CIP Number: 122016

Project Title: Downriver Transmission Main Loop

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Will be located on Inkster between Wick and Pennsylvania Road; on Allen Road/Dixie Highway between Pennsylvania Rd. and Ready Rd; and also at Electric Avenue.

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Vittoria Hogue

Director: Grant Gartrell

Project Score
76

Problem Statement:
The Downriver Transmission Main that currently serves Brownstown, Riverview, Woodhaven, Trenton, Flat Rock, Gibraltar, Rockwood, South Rockwood, Berlin Township, and Grosse Isle is a single feed transmission system. If a disruption to service were to occur on this transmission main, many of the users along this main would experience a complete loss of pressure and flow. The number of users that would experience pressure loss would depend on the location of the break. This project would provide ...

Scope of Work/Project Alternatives:
This project will be delivered using a design-bid-build project delivery method. The scope of work generally includes: installing approximately 4 miles of 16-inch transmission main and 5 mile of 24-inch transmission main paralleling the existing Allen Road/Dixie Highway transmission main and install 4 miles of 30-inch transmission main along Inkster road between Wick and Pennsylvania road. This will provide redundancy to the Downriver communities of Brownstown, Riverview, Woodhaven, Trenton, Fl...

Other Important Info:
Completion of the Downriver Transmission main loop is predicated on acquiring ownership of a portion of 24-inch transmission main owned but not used by the City of Trenton. As of this CIP update, the acquisition of this Trenton main has been completed.

Project History: The 2015 Water Master Plan Update included a recommendation to evaluate options along this branch of the system to increase redundancy. Since that recommendation, GLWA Water Supply Operations Engineering performed a hydraulic...

CIP Number: 122016

Project Title: Downriver Transmission Main Loop

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$262	$75	$75	$27	$27	$27	$27	$27	$27	$135	$24
Design & Construction Assistance # 1 (1803942)	$6,396	$1,544	$1,544	$2,199	$447	$448	$447	$447	$447	$2,239	$413
Construction (Build) # 1	$56,302	$0	$0	$0	$7,025	$14,524	$14,525	$4,525	$4,525	$45,125	$11,176

CIP Number: 122017

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

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: City of Detroit
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☑ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Score
81.2

Problem Statement:
The primary driver of this project is to provide back up water service from Springwells WTP to the Water Works and Northeast Service Areas in case of loss of service to the Water Works Park WTP or Northeast WTP.
The secondary driver to this project is to support Northeast WTP repurposing by providing a second finished water supply main to the Northeast site to support maximum day demands for the Northeast service area, which can be as high as 190 MGD. With the upcoming decommissioning of treat...

Scope of Work/Project Alternatives:
Project includes inspection and rehab of the 7 Mile/Nevada Transmission Main and construction of a new flow control station at Carrie/Nevada.

Other Important Info:
This project highlights the need to reinforce the transmission system in order to reliably provide service during existing conditions and after treatment is decommissioned at the Northeast WTP. This project would be completed regardless of whether the Northeast WTP treatment is decommissioned.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$368	$24	$24	$42	$42	$43	$42	$42	$42	$214	$86
Design/Engineering	$60,360	$1,429	$1,429	$980	$980	$3,357	$11,814	$11,814	$11,814	$39,780	$18,170

CIP Number: 122018

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

Project Status: Active - Procurement - Design
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Transmission Mains
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☑ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Score
85

Problem Statement:
A large proportion of the water transmission mains (WTM) within the City of Detroit were constructed between the decades of 1870 and 1930. Mains constructed during this period have exceeded their service life and will require replacement in the near term. Several WTM within this age of construction have strategic importance as they can be used to transmit flows between the Water Works Park WTP and the Northeast WTP.

Scope of Work/Project Alternatives:
This project involves rehab of WTM along Garland Street, Hurlbut Street, and Bewick Street between Jefferson Avenue and I-94 within the east side of the City of Detroit. This project will include a detailed condition assessment of these WTM to evaluate the appropriate rehabilitation method.

Other Important Info:
This project will be implemented concurrently with Phase 3 of CIP:122003 WWP to NE Transmision Main Project.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$367	$0	$0	$45	$45	$46	$45	$45	$45	$229	$92
Design/Engineering	$53,570	$0	$0	$1,953	$1,953	$1,958	$9,536	$9,536	$9,536	$32,519	$19,098

CIP Number: 122019

Project Title: Jefferson Main Replacement Project

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: City of Detroit
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Score
78.9

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$265	$0	$40	$44	$45	$44	$44	$44	$224
Design/Engineering	$3,480	$0	$613	$782	$686	$684	$684	$28	$2,866
Construction	$25,953	$0	$0	$0	$4,826	$10,371	$10,371	$383	$25,953

CIP Number: 132003

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: West Service Center
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Andrew Juergens

Director: Grant Gartrell

Project Score
79.6

Problem Statement:
There are six line pumping units in the main pump house at the West Service Center Booster Pumping Station. There are butterfly valves located on the suction side all six line pumps, and resilient seated gate valves on the discharge side of three of the six line pumps. Three of the line pumps do not have a valve on their discharge side and therefore no immediate means of isolation. The existing butterfly and resilient seated gate valves are all leaking and not reliable for isolating pumps. More...

Scope of Work/Project Alternatives:
This project is being delivered using a design-bid-build project delivery. The scope of work generally includes removing 6 existing butterfly valves from the pump suction piping and 3 existing gate valves from the high-pressure pumping system discharge piping; and providing 6 new double-disc gate valves on the pump suction piping and 6 new double disc gate valves on the pump discharge piping.

Other Important Info:
Challenges: Sequence of construction and meeting system demands will need to be coordinated with operations.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$48	$48	$48	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-062)	$211	$211	$211	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-270)	$1,482	$1,482	$1,482	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132006

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

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Water Booster Pumping Stations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
47.9

Problem Statement:
Design of isolation, pressure and flow control equipment for efficient delivery of consistent pressures to wholesale customers at Ford Road water booster pumping station

Scope of Work/Project Alternatives:
The project generally consists of:
Replacing all pump suction butterfly valves with new triple offset high performance butterfly valves (10)
Replacing all control butterfly valves with new metal seated ball valves (10)
Replacement of the existing 16-inch cone valve-driven reservoir fill line a new 20-inch plunger valve controlled fill line
New 75 KW generator and appurtenances and related work.

Other Important Info:
The project is currently under construction, and is predecessor to any work along the Newburgh water main and Michigan Avenue Station. The two major observed challenges (isolation and procurement) have been overcome successfully. The next major element of the work is the installation of the control valves expected to begin in September 2020.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$115	$115	$115	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-1749, CS-052)	$535	$535	$535	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1803538)	$2,575	$2,575	$2,575	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132007

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

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Imlay Pumping Station
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Vittoria Hogue

Director: Grant Gartrell

Project Score
35.1

Problem Statement:
This CIP project will address two principle needs. The first is the need to replace an existing large pumping unit with a smaller pumping unit for the purpose of recirculating finished water inside the station's reservoir. Recirculation of reservoir water is required during the low-demand season to maintain water quality. Recirculation of reservoir water using a smaller suitability sized pumping unit will reduce operating complexity and the possibility for damage to the larger pump units. The s...

Scope of Work/Project Alternatives:
This project is being delivered using a design-build project delivery method. The scope of work generally includes replacing one of Imlay Sation's 75 MGD pump's and 6,000 HP motor's with a smaller 22.5 MGD pump with 1,100 HP motor. The associated VFD, valves, piping and appurtenances will also be removed and replaced to accommodate the new smaller pump. VHN 7/29/2021

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$205	$166	$166	$32	$5	$0	$0	$0	$0	$5	$0
Design-Build # 1 (1900516)	$4,940	$760	$760	$4,071	$109	$0	$0	$0	$0	$109	$0

CIP Number: 132010

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

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: West Service Center
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Andrew Juergens

Director: Grant Gartrell

Project Score
62.6

Problem Statement:

Construction of West Service Center Division Valves is needed to convey flows originating from the Lake Huron Water Treatment Plant through the West Service Center to the Springwells high-pressure service area while the Springwells raw water tunnel is out of service for repairs. The existing reservoirs at the West Service Center are in poor condition and continue to require periodic structural repairs despite numerous past repairs. Additionally, half of the existing reservoir pumps experience s...

Scope of Work/Project Alternatives:

This project is being delivered using a design-build project delivery method. The scope of work generally involves:
1. Rehabilitating Valve Vaults #1, #4, and #7.
2. Demolishing existing Valve Vault #3.
3. Constructing a new Valve Vault #3 containing a new 30-inch cone valve.
4. Demolishing two existing 10 MG reservoirs and the associated Reservoir Pump Houses #1 and #2, and the associated yard piping.
5. Constructing two new 5 MG reservoirs.
6. Constructing a new Reservoir Pump House, i...

Other Important Info:

Challenges: Water storage capacity and reservoir pumping capacity need to be maintained during construction. Sequence of construction and meeting system demands will need to be coordinated with operations. Construction of the new reservoirs is subject to the city of Southfield's zoning ordinances especially related to the height of the reservoirs.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$287	$163	$163	$59	$59	$5	$0	$0	$0	$64	$0
Design-Build # 1 (1803312, CS-1772)	$44,989	$8,583	$8,583	$19,339	$16,629	$436	$0	$0	$0	$17,066	$0
Miscellaneous	$311	$311	$311	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132012

Project Title: Ypsilanti Booster Pumping Station Improvements

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Water Plants & Booster Pump Stations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Existing Ypsi station

Project Engineer/Manager: Jorge Nicolas

Director: Grant Gartrell

Project Score
65

Problem Statement:
The Ypsilanti Booster Pumping Station does not have backup power generation and needs one in the event of a power loss to the site so that system pressure loss is avoided during these conditions. The entire station and its pumping and electrical system equipment are are original to the facility and are past their useful service life. The existing electrical system requires substantial maintenance to keep it in service. The existing pumps and motors are in poor condition and also require cumbers...

Scope of Work/Project Alternatives:
This project is being delivered using a design-bid-build project delivery method. The scope of work generally includes building a new booster pumping station that meets current water system demands, current building and electrical codes, and best industry practices for water pumping station design, operation and maintenance needs. The new station will be equipped with all new pumps, motors, drives, electrical switchgear, power distribution system, building mechanical, station passive bypass, an...

Other Important Info:
Impact to member partners

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$299	$58	$58	$30	$30	$30	$30	$30	$30	$150	$60
Study & Design & Construction Assistance # 1 (CS-267, CS-052)	$2,589	$456	$456	$1,058	$169	$169	$120	$153	$153	$766	$307
Construction (Build) # 1	$36,194	$0	$0	$1,500	$0	$0	$2,429	$2,816	$4,816	$10,062	$24,632

CIP Number: 132014

Project Title: Adams Road Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Adams Road BPS
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Timothy Kuhns

Director: Grant Gartrell

Project Score
66

Problem Statement:
The Adams Road booster pumping station was constructed in 1971 and is nearing the end of its service life. Recent condition assessment of the station indicates that there are several needs at the site that need to be addressed due to aging infrastructure. Improvements required at the site include site drive improvements, site valve replacements, building sump replacement, site drain PS replacement, structural improvements, pumping system improvements, flow metering improvements, bypass upgrades...

Scope of Work/Project Alternatives:
This project will be delivered using a design-bid-build project delivery method. The scope of work generally includes reconstructing a new pumping station next to the existing station on the current site. The new station will be designed to bring it up to current building and electrical codes, industry standards, and best practices for operation and maintenance of pumping stations.

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$417	$0	$0	$0	$0	$0	$0	$0	$0	$0	$232
Design & Construction Assistance # 1 (CS-052A, TBD)	$7,750	$83	$83	$0	$0	$0	$0	$0	$0	$0	$4,181
Construction (Build) # 1	$44,706	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132015

Project Title: Newburgh Road Booster Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Newburgh Road Booster Pumping Station
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Andrew Juergens

Director: Grant Gartrell

Project Score
58.9

Problem Statement:
Existing pumps, motors and electrical gear are beyond useful service life. The existing pump manufacturer has discontinued maintenance support of the pumps, increasing the difficulty and cost of maintenance. Additionally, a new transmission main will be designed to allow the Newburgh Station to pump flows to the Haggerty Station reservoir. The Haggerty reservoir fill operation may require additional pumps at the Newburgh Station that are rated to higher discharge pressures.

Scope of Work/Project Alternatives:
Construct a new Newburgh Road Booster Pumping Station, including new pumps, motors, VFDs, electrical gear, building mechanical equipment, and backup power generation. Alternatives include constructing a new Newburgh Road Booster Pumping Station on the existing site, expanding the existing site to accommodate a new station, or construction of the new station on a new site.

Other Important Info:
Challenges: The existing site is not large enough to construct the new Newburgh Station. Coordination with the 14-Mile Road Transmission Main Loop Contract will be required.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$249	$16	$16	$28	$0	$0	$0	$0	$0	$0	$204
Design & Construction Assistance # 1 (1901767, CS-052)	$3,170	$427	$427	$514	$0	$0	$0	$0	$0	$0	$2,228
Construction (Build) # 1	$41,662	$0	$0	$0	$0	$0	$0	$0	$0	$0	$41,662

CIP Number: 132016

Project Title: North Service Center Pumping Station Improvements

Project Status: Active - Procurement - Design
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: North Service Center
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mike Garrett

Director: Grant Gartrell

Project Score
59.4

Problem Statement:
The North Service Center was constructed in 1962 and is nearing the end of its service life.

Recent condition assessment of the station indicates that there are several needs at the site that need to be addressed due to aging infrastructure. Improvements required at the site include site drive improvements, site valve replacements, valve operator replacement, abandonment of pitot tube well, belt drain replacement, septic tank and well field replacement, electric room improvements, station w...

Scope of Work/Project Alternatives:
This project includes complete reconstruction of the North Service Center Pumping Station, and replacement of two ten million gallon reservoirs.

Other Important Info:
Proposed changes focus on optimization of energy efficiency in the system by removing waste and conserving energy already put into the system.

CIP Number: 132016

Project Title: North Service Center Pumping Station Improvements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$519	$106	$106	$0	$45	$46	$45	$45	$45	$229	$183
Design & Construction Assistance # 1	$257	$257	$257	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 2 - AECOM	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$81,486	$0	$0	$0	$454	$953	$954	$1,954	$4,954	$9,270	$72,216
Construction # 2 - AECOM	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132018

Project Title: Schoolcraft Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Booster Pumping Stations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
58.9

Problem Statement:
Following the Pump Station Condition Survey and Needs Assesment, significant issues were observed in the Schoolcraft Pumping Station. This needs assesment has found several significant areas of necessary improvement to the station as described in the project scope fo work:

Scope of Work/Project Alternatives:
This project will be delivered using a design-bid-build project delivery method. The scope of work will generally include replacing existing pumps, motors, drives, electrical switchgear, motor control centers, valves, valve operators, yard piping, and yard valves with new infrastructure. Additionally, the underdrain system that serves the finished water reservoirs will either be rehabilitated in place or replaced with new.

Other Important Info:
This project is scheduled to begin in the 5-10 year time period.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	$3,265	$0	$0
Design/Engineering	$47	$47	$47
	$21,156	$0	$0

CIP Number: 132019

Project Title: Wick Road Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Romulus
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Vittoria Hogue

Director: Grant Gartrell

Project Score
67.2

Problem Statement:
Wick Pump Station is currently oversized based on the demands it experiences, has poor valve isolation capabilities and much of its equipment was installed in 1981 and is passed its useful service life. This project's intent is to right size the station and replace valves and other aging equipment.

Scope of Work/Project Alternatives:
This project will be delivered under a design-bid-build delivery method. This project's scope of work will be rightsizing the station's pumping capacity, improving valve control and isolation, and replacing and/or upgrading equipment that is at the end of its useful life. The improvements intended to right size the station include replacing reservoir pumping units and installing another small line pump (jockey pump) to accommodate low flow conditions. Valve control and isolation work will invol...

Other Important Info:
Refer to CS-052A Condition Assessment for additional details on the scope of project.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$309	$0	$0	$0	$0	$0	$0	$0	$0	$0	$257
Design & Construction Assistance # 1 (TBD, CS-052A)	$4,360	$56	$56	$0	$0	$0	$0	$0	$0	$0	$2,545
Construction (Build) # 1	$19,990	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,268

CIP Number: 132020

Project Title: Franklin Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Franklin Pump Station

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Grant Gartrell

Director: Grant Gartrell

Project Score
77.7

Problem Statement:

The Franklin Booster Pumping Station was constructed in 1968 and is nearing the end of its service life.

Recent condition assessment of the station indicates that there are several needs at the site that need to be addressed due to aging infrastructure. Improvements required at the site include site drive improvements, sanitary holding tank improvements, site valve replacements, mezzanine valve access improvements, electrical room upgrades, building structure improvements, pumping improveme...

Scope of Work/Project Alternatives:

This project includes complete reconstruction of the Franklin Booster Station.

Other Important Info:

Project will include alternatives evaluation to determine building new station versus rehabilitating existing.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$119	$0	$0	$0	$0	$0	$0	$0	$0	$0	$119
Design (TBD, CS-052A)	$4,693	$93	$93	$0	$0	$0	$0	$0	$0	$0	$4,600

CIP Number: 132021

Project Title: Imlay Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Imlay Pumping Station
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☑ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Eric Kramp

Director: Grant Gartrell

Project Score
59.4

Problem Statement:

Following completion of the 2018 Booster Station Condition Assessment, several significant issues have been documented at the Imlay Booster Station. In addition to the updates to the VFD systems identified in the FY 2020 CIP. Site/civil, mechanical, and electrical improvements have been identified far in excess of the initial 2020 CIP, including the complete replacement of all outdated electrical switchgear.

It was recently documented that approximatly half of the reservoir fill system is w...

Scope of Work/Project Alternatives:

Significant improvementst to the site/civil, mechanical, and electrical systems at the Imlay Booster Station. Highlights in each discipline are indentified as follows:
Site/Civil -- Replace crumbling retaining walls. Roofing rehabilitation
Pumping -- "Right size" remaining pump and motor units based on 2015 WMPU. Rehabilitate any pumping units that are determined to be correctly sized.
Mechanical -- Improvements to HVAC. Replacement or reinforcement of all station isolation gate and butterf...

Other Important Info:

VFD size is unusual in the marketplace and cooling systems are complex for the VFDs.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design (TBD, CS-052A)	$227	$227	$227	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132022

Project Title: Joy Road Pumping Station Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Joy Rd Water Pumping Station
☐ **Project New to CIP:**

- ☑ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


Inside Joy Road Pumping Station

Project Engineer/Manager: Jacob Mangum

Director: Grant Gartrell

Project Score
58.9

Problem Statement:
The station is undersized with limited space for maintenance and personnel access. The main walkway inside the station is built on top of the discharge header and six stairways connected to it are non-code compliant. There is not enough room to install normal stairs. The electrical room addition was partially built on top of the pump station top slab and blocks access to the reservoir fill line valves. The pump station roof hatches leak and drip onto equipment below. The discharge header is hea...

Scope of Work/Project Alternatives:
Design contract will consider life-cycle costs of rehabilitating the current station versus building a new station on available land located to the south of the current station. A listing of the type of station improvements by discipline is provided below.
Site Drive Improvements - The existing site drive geometry needs to be improved to allow for a mobile crane or semi-trailer truck.
Site Drain Lift Station - Installation of a new site drain pump station next to existing with removal of the ...

Other Important Info:
There is space on the site for building a new pump station to the south of the existing.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$367	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (TBD, CS-052A)	$3,536	$71	$71	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$35,781	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 132026

Project Title: Franklin Pumping Station Valve Replacement

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Station/Reservoir
Lookup Location: Booster Pumping Stations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
The existing gate valves and butterfly (suction) valves that service the four (4) line pumps and two (2) reservoir pumps in the Franklin Pumping Station have exceeded their useful life and are in need of replacement.

Scope of Work/Project Alternatives:
Scope of work is demolition and replacement of six (6) 24" manually operated gate valves, demolition and replacement of three (3) 24" and three (3) 30" manually operated butterfly (suction) valves, demolition and replacement of two (2) 30" electrically actuated butterfly (suction) valves and rebuild of the existing gate valves.

Other Important Info:
Just in kind replacement of valves. There is another CIP for the complete rebuild of the station. CIP 132020

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$16	$16	$16	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1802146, CS-166)	$969	$963	$963	$6	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170109

Project Title: GLWA-CS-187: FK Eng: Raw Water Intake

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: WTPs and Boosters
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Project Score
0

Problem Statement:
This allowance is reserved for unplanned, emergency and critical project needs that need to be addressed quickly.

Scope of Work/Project Alternatives:
This project is an allowance for unplanned, critical projects that may occur at the Water Treatment Plants and Booster Pump Stations throughout the system. These projects may include repair, replacement or rehabilitation of key assets as required to allow the Authority to provide sufficient water quality, quantity and pressure to meet customer demands in accordance with federal and state requirements under the Safe Drinking Water Act.

Other Important Info:
Challenges: Close coordination with operations and ability to jump on needs.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$235	$192	$192	$21	$21	$0	$0	$0	$0	$21	$0
Study # 1 (CS-187, CS -1623)	$1,537	$1,463	$1,463	$27	$46	$0	$0	$0	$0	$46	$0

CIP Number: 170200

Project Title: As-Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services

Project Status: Closed
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: System-wide

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
0

Problem Statement:
GLWA engineering and operations need a contract mechanism to obtain professional engineering services in a timely manner to investigate environmental, geotechnical and specialized engineering problems that occur on a regular basis throughout the system.

Scope of Work/Project Alternatives:
This engineering/technical services contract involves as-needed engineering and technical services related to geotechnical investigations and related geotechnical engineering, construction materials sampling and testing, environmental media sampling and testing, soils sampling and testing, land surveying, corrosion testing and inspection, computer-aided design, and construction inspection.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Study & Design & Construction Assistance # 1 (CS-201)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170300

Project Title: Water Treatment Plant Automation Program

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Water Treatment Plants
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
0

Problem Statement:
The automation design and construction project comes from recommendations that identified existing station process data conditions, station needs, GLWA mission critical assets, alternative improvement options to address identified needs, recommended improvements to address the needs, prioritized projects based on the GLWA CIP scoring tool, and scheduling for making the improvements along with associated capital improvement budgets associated with each project established under CS-108.

Scope of Work/Project Alternatives:
The purpose of this project is to implement the recommendations from CS-108 that are prioritized in five (5) year increments with an estimated cost of $1 million dollars per year over a twenty (20) year span.

Other Important Info:
Challenge: Standardization of multiple different data process equipment already installed throughout the 5 plants could be a problem.

Project History: The GLWA Water Operations division is comprised of five water treatment plants. Each plant has process areas ranging from intake, sedimentation, chlorination, filtration and distribution systems. One of the directives from the organizational objectives is to provide the treatment plants with automation. This automation would be one of the mai...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$183	$0	$0	$0	$0	$0	$0	$0	$0	$0	$183
Design/Engineering	$9	$9	$9	$0	$0	$0	$0	$0	$0	$0	$0
TBD / Future Allocation / General Holding TBD	$23,065	$0	$0	$0	$0	$0	$0	$0	$0	$0	$23,065

CIP Number: 170302

Project Title: SW SCADA System Upgrade

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Southwest Water Treatment Plant
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


SW SCADA System Upgrade

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
20

Problem Statement:
This project will upgrade SW WTP SCADA system.

Scope of Work/Project Alternatives:
The upgrade of network devices, controllers and removal of device net for the SCADA system.

Other Important Info:
This project will also upgrade Ovation to version 3.8

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
Capital Delivery Salary	$180	$74	$74	$53	$52	$0	$52
TBD / Future Allocation / General Holding	$7,798	$0	$0	$3,851	$3,947	$0	$3,947

CIP Number: 170303

Project Title: Power Monitoring Installation for Water Treatment Plants

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Northeast, Southwest and Water Works Park
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
0

Problem Statement:
Looking to achieve efficiency of our power usage at our water treatment plants.

Scope of Work/Project Alternatives:
This project will install power monitoring meters on electrical switch gear for critical pumping units at Water Works Park, Northeast, and Southwest.

Other Important Info:
Power monitoring will be installed on critical pumping units and switchgear mains.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total	FY28-32
GLWA Salaries	$136	$52	$52	$61	$22	$0	$0	$22	$0
Design-Build	$2,129	$150	$150	$1,124	$415	$0	$0	$415	$438

CIP Number: 170304

Project Title: WWP Scada Infrastructure Upgrade

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Water Works Park
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
0

Problem Statement:
Of paramount concern is the need to have a reliable and secure SCADA platform that will satisfy GLWA's needs for the next 10-15 years. The purpose of this RFP is to upgrade the SCADA system to an Ovation DCS controlled network utilizing Ovation and PLC controllers and I/O (3rd part network design will be supplied) for implementation at WWP as reflected in the design governance documents (reference SCADA standards contained in CS-12 and CS-13). Included in the project objectives are the followi...

Scope of Work/Project Alternatives:
The scope of this project is to provide a design for SCADA upgrade of Water Works Park water treatment plant incorporating the following:
• Upgrade of all plant PLCs
• Network extension upgrades to integrate new process areas/controllers within the process control network
• Emerson Ovation upgrades
• Implement alarm management.
• Implement process improvements
• Migrate all SCADA graphics, alarms, historical data configuration to a single platform
• Upgrade/integration into the central H...

Other Important Info:
This project will upgrade the SCADA network.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$55	$13	$13	$19	$11	$11	$0	$0	$0	$22
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$262	$0	$0	$168	$66	$21	$6	$0	$0	$94

CIP Number: 170305

Project Title: WWP SCADA Network Upgrade

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Water Works Park
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
0

Problem Statement:
Provide a robust SCADA network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities. Adhere to network standards put together in the SGD document.

Scope of Work/Project Alternatives:
This project will be the construction phase of the design done under CIP 170304.

Other Important Info:
This project may be delayed.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$137	$0	$0	$0	$0	$0	$0	$0	$0	$0	$137
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$7,198	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,198

CIP Number: 170306

Project Title: SPW SCADA PLC Network Upgrade

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Springwells Plant
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
0

Problem Statement:
This project will upgrade current plant PLCs providing Asset Center management and install network cabinets in strategic locations for future expandability.

Scope of Work/Project Alternatives:
Provide a robust SCADA network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities. Adhere to network standards put together in the SGD document.

Other Important Info:
This project will upgrade the 3rd party network.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
GLWA Salaries	$91	$0	$0	$0	$51	$40	$91
Design/Engineering	$0	$0	$0	$0	$0	$0	$0
Construction	$3,054	$0	$0	$0	$1,521	$1,532	$3,054

CIP Number: 170307

Project Title: NE SCADA Network Upgrade

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Northeast Plant
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Jeffrey Dorsey

Director: Terry Daniel

Project Score
0

Problem Statement:
Provide a robust SCADA network solution with installed capacity to accommodate for future SCADA expansion and fully manageable network capabilities. Adhere to network standards put together in the SGD document.

Scope of Work/Project Alternatives:
This project will update the 3rd party network for this site.

Other Important Info:
This project may be delayed.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$91	$0	$0	$0	$0	$0	$0	$0	$0	$0	$91
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$2,825	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,825

CIP Number: 170400

Project Title: Water Transmission Improvement Program

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Transmission System
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Todd King

Director: Todd King

Project Score
0

Problem Statement:
Assessing, rehabilitating or replacing aging transmission mains in the water system

Scope of Work/Project Alternatives:
This project is a yearly funding allocation for the design and/or construction work for the rehabilitation or replacement/construction of aging water transmission lines and all appurtenances, connections and related structures.

Other Important Info:
O&M manuals, GIS, Section Maps and Gate Books are available for reference.

Project History: There are many critical assets that are required to be operated in the transmission system and this yearly allowance is needed to meet the critical needs of these assets.

Challenges: May require shut down of large pumps, isolation or shutdown of large mains etc.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$413	$0	$0	$0	$0	$0	$0	$0	$0	$0	$228
Design/Engineering	$2,974	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,004
Construction (Build) # 2	$10,900	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 6	$17,664	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170500

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Transmission System Gate Valves
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**

Project Engineer/Manager: Todd King

Director: Todd King

Project Score
0

Problem Statement:
Replacement/Rehabilitation of GLWA Transmission System Gate Valves will aid in implementing a regular valve exercising program as recommended by AWWA as well as increase the reliability of the transmission system.

Scope of Work/Project Alternatives:
Evaluate the existing conditions, provide the necessary replacement/ rehabilitation option, design and implement them.

Other Important Info:
GIS, Section Maps and Gate Books are available for reference.

Project History: There are critical valves that are required to be closed during a main break or an emergency situation. There has not been a regular valve exercising program in past 15 years in the DWSD/GLWA System.

Challenges: May require shutdown of large transmission mains.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$100	$0	$0	$9	$9	$10	$9	$9	$9	$49	$40
Design/Engineering	$1,172	$0	$0	$266	$266	$267	$266	$189	$40	$1,031	$1,105
Construction (Build) # 3	$2,824	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,824

CIP Number: 170502

Project Title: Transmission System Valve Rehabilitation and Replacement Program

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Transmission System Gate Valves
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Biren Saparia

Director: Todd King

Project Score
0

Problem Statement:
Replacement/Rehabilitation of GLWA Transmission System Gate Valves will aid in implementing a regular valve exercising program as recommended by AWWA as well as increase the reliability of the transmission system.

Scope of Work/Project Alternatives:
Evaluate the existing conditions, provide the necessary replacement/ rehabilitation option, design and implement them.

Other Important Info:
GIS, Section Maps and Gate Books are available for reference.

Project History: There are critical valves that are required to be closed during a main break or an emergency situation. There has not been a regular valve exercising program in past 15 years in the DWSD/GLWA System.

Challenges: May require shutdown of large transmission mains.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
Capital Delivery Salary	$391	$391	$391	$0
Construction (Build) # 1 (CON-181)	$15,000	$5,218	$5,218	$9,781

CIP Number: 170503

Project Title: Transmission System Valve Replacement

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Transmission System Gate Valves
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Biren Saparia

Director: Todd King

Project Score
0

Problem Statement:
Replacement/Rehabilitation of GLWA Transmission System Gate Valves will aid in implementing a regular valve exercising program as recommended by AWWA as well as increase the reliability of the transmission system.

Scope of Work/Project Alternatives:
Evaluate the existing conditions, provide the necessary replacement/ rehabilitation option, design and implement them.

Other Important Info:
GIS, Section Maps and Gate Books are available for reference.

Project History: There are critical valves that are required to be closed during a main break or an emergency situation. There has not been a regular valve exercising program in past 15 years in the DWSD/GLWA System.

Challenges: May require shutdown of large transmission mains.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$43	$0	$0	$7	$7	$7	$7	$7	$7	$35
Construction (Build) (1802745)	$9,956	$2,110	$2,110	$1,307	$1,307	$1,307	$1,307	$1,307	$1,307	$6,538

CIP Number: 170504

Project Title: Transmission Mains Valves and Urgent

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Multiple Locations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Biren Saparia

Director: Todd King

Project Score
0

Problem Statement:
Ongoing project to address water main transmission mains, valves, pumping stations, and plants on an emergency or urgent basis.

Scope of Work/Project Alternatives:
Work shall be as directed by GLWA Field Services to address and support maintenance and repairs and capital improvements to the water main, valves, booster stations, and/or other urgent tasks as directed.

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
	$7,500	$0	$0	$1,250	$1,250	$1,250	$1,250	$1,250	$1,250	$6,250

CIP Number: 170600

Project Title: Water Transmission Main Asset Assessment Program

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Transmission Mains
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Ashley Jacqmain

Director: Suzanne Coffey

Project Score
0

Problem Statement:
Many of the water mains serving the GLWA service area were installed in the early part of the 20th century or the later part of the 19th century, and are now reaching the end of their useful life span. This project will pilot and utilize new technologies to accurately identify the condition of these buried assets by constructing access ways for inspection and the installation of sensors and fiber optic cables for real-time monitoring of condition. It's essential for cost-efficient repair and r...

Scope of Work/Project Alternatives:
Construct access structures and utilize new technology to evaluate the existing conditions of the transmission system. Construction of in place sensors and cables may be necessary to adequately access condition. Provide the necessary recommendation for replacement and rehabilitation.

Other Important Info:
*Innovation Note: Consider new techniques for water main assessment.
GIS, Section Maps and Gate Books are available for reference.
Challenges: Gaining access to inspect buried pipes is difficult, disruptive and costly. However, there are ways to monitor and test the condition of the piping and methods of performing condition assessment.
Project History: There are many critical assets that are required to be operated in the transmission main, but the authority doesn't know the existing condi...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$242	$0	$0	$0	$9	$29	$29	$29	$29	$125	$116
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170601

Project Title: Linear System Integrity Program

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Field Services
Class Lvl 3: Transmission System
Lookup Location: Entire Linear System - Water & Wastewater
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Ashley Jacqmain

Director: Suzanne Coffey

Project Score
0

Problem Statement:
GLWA seeks to apply asset management principles to proactively evaluate and manage the linear system (water transmission and sewer interceptor systems). Because the water transmission system is intentionally closed, getting into it to assess the condition of the pipes is challenging. It requires coordination with operations and member partners, and in many cases, the construction of access points to introduce and extract equipment. LSIP is a data and risk-based approach.

Scope of Work/Project Alternatives:
Scope of work is broken into 6 Tasks: Task 1 - Program Management - Water; Task 2 - Development of Water Program Framework; Task 3 - Planning of Water Pipeline Condition Assessments; Task 4 - Implementation of Water Pipeline Condition Assessments; Task 5 - Wastewater Program Planning and Implementation; Task 6 - Program Management - Wastewater

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$223	$0	$0	$44	$44	$44	$44	$44	$179
Design/Engineering	$8,857	$0	$0	$1,770	$1,770	$1,775	$1,770	$1,770	$7,087
Construction	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170800

Project Title: System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: LHP, SPP, SWP, NEP, WWP, Booster Stations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Lake Huron Plant Reservoir No. 3: Interior concrete repair.

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Project Score
0

Problem Statement:
This program CIP merges former reservoir inspection and repair programs and umbrella's all subsequent CIP's associated with the program in the 17080X category. This program manages the perpetual inspection and repair required to all 31 active reservoirs on a 5 year year cycle. The program manages the overall repair schedule to mitigate conflicts in the transmission system to minimize the impact for EGLE mandated inspections and repairs to GLWA Reservoirs at Booster Stations and Water Treatme...

Scope of Work/Project Alternatives:
The program will provide inspection, rehabilitation, and maintenance for all 31 finished (potable) reservoirs in the GLWA system on a ELGE mandated five year revolving inspection cycle.

Other Important Info:
The CIP 170800 program is broken down into subset CIP numbers starting at 170801. CIP 170801 is currently in construction and is supported by two contracts. Engineering contract CS-151A and construction contract 1900744. The second phase of the program CIP 170802 is in the procurement phase and the engineering contract number will be 2100236. The third phase of the program CIP 170803 will begin pre-procurement activities in 2022.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$127	$0	$0	$12	$12	$12	$12	$12	$12	$63	$50
Study & Design & Construction Assistance # 1 (CS-151)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170801

Project Title:

Project Status: Project Execution - Design
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: LHP, SPP, SWP, WWP, North Service Center, Imlay Booster Station
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Imlay Booster Station: Sealing interior wall cracks

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Project Score
0

Problem Statement:
CIP 170801 is the first in a series of facility improvements to reservoirs at the water treatment plants and booster stations assigned to the System -Wide Finished Water Reservoir Inspection, Design and Rehabilitation Program under CIP 170800.

Scope of Work/Project Alternatives:
CIP 170801 is specific to inspection, design and construction of improvements to the reservoirs at the Springwells WTP, Southwest WTP, Lake Huron WTP and Imlay Station. CIP#170801 is currently being executed and is expected to be closed in January of 2025.

Other Important Info:
Inspection, design, and RPR services are performed under contract CS-151A with Hazen and Sawyer as the Engineer.
Construction of improvements are performed under contract 1900744 with Pullman SST, Inc. as the prime contractor.
WWP reservoir 2A and North Service Center reservoirs have been added to contract 1900744 to perform emergency repairs.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$2,480	$251	$251	$1,066	$1,066	$96	$0	$0	$0	$1,162	$0
Design/Engineering (CS-151A)	$2,778	$1,518	$1,518	$602	$602	$54	$0	$0	$0	$656	$0
Construction (1900744)	$19,498	$9,687	$9,687	$4,336	$5,161	$314	$0	$0	$0	$5,475	$0

CIP Number: 170802

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase II

Project Status: Active - Procurement - Design
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: LHP, SPP, SWP, WWP, North Service Center, Imlay Booster Station
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Project Score
0

Problem Statement:
CIP 170802 is the second in a series of facility improvements to reservoirs at the water treatment plants and booster stations assigned to the System -Wide Finished Water Reservoir Inspection, Design and Rehabilitation under the umbrella CIP 170800 program.

Scope of Work/Project Alternatives:
CIP 170802 is specific to the inspection, design/engineering, and construction improvements to 15 reservoirs. CIP170802 is currently in the procurement phase and is expected to be started in 2021.

Other Important Info:
Inspection and design of improvements is being executed under Contract future contract 2100236

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$275	$0	$0	$31	$54	$54	$54	$54	$26	$244	$0
Design/Engineering	$5,252	$0	$0	$468	$1,065	$1,068	$1,065	$1,065	$516	$4,783	$0
Construction	$35,972	$0	$0	$0	$6,879	$7,876	$6,879	$6,879	$7,456	$35,972	$0

CIP Number: 170803

Project Title: Reservoir Inspection, Design, and Construction Management Services Phase III

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: LHP, SPP, SWP, WWP, North Service Center, Imlay Booster Station
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: John McCallum

Director: Grant Gartrell

Project Score
0

Problem Statement:
CIP 170803 is the third in a series of facility improvements related to reservoirs at the water treatment plants and booster stations assigned to the System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation Program CIP 170800.

Scope of Work/Project Alternatives:
CIP 170803 is specifically related to inspection, design, and construction of improvements to the reservoirs in our system as delineated in future contracts.

Other Important Info:
n/a

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$333	$0	$0	$0	$0	$0	$0	$0	$46	$46	$238
Design/Engineering	$16,213	$0	$0	$0	$0	$0	$0	$0	$453	$453	$14,101
Construction	$77,368	$0	$0	$0	$0	$0	$0	$0	$0	$0	$65,348

CIP Number: 170900

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Various meter locations in Transmission System
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chandan Sood

Director: Chandan Sood

Project Score
0

Problem Statement:
Improving meter data reliability, ensuring accurate billing, improving customer service and allow high quality analysis of the system

Scope of Work/Project Alternatives:
The Proposed improvements should include the following; The replacements of meters that have surpassed their life expectancy, and or the current flow rates exceed the mechanical limits of the meter. Installing entrance hatches that allow safer ingress, and egress, and that can be locked for security. Sand blasting and painting of piping and walls. Waterproofing meter vaults to keep the ground water out. Provide a proper floor slope in meter chambers that allow water to settle in puddles. Repair...

Other Important Info:
Challenges: Requires temporary shutdown of the water supply through the meter.

Project History: Currently GLWA provides water service to 126 communities, and measures flows and volumes by the utilization of 290 wholesale water meters now in service; 17 of these meters are venturi-orifice type meters, 26 of these are dual venturi type meters, 48 of these single venturi type meters, 97 of these are magnetic flow type meters, and 102 of these are turbine or mechanical type meters. Meters were ...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$229	$0	$0	$0	$0	$0	$0	$0	$0	$0	$114
TBD / Future Allocation / General Holding TBD	$43,806	$0	$0	$4,036	$0	$0	$0	$0	$0	$0	$19,885

CIP Number: 170901

Project Title: Suburban Water Meter Pit Rehabilitation and Meter Replacement

Project Status: Project Execution - Construction
Class Lvl 1: Water
Class Lvl 2: Metering
Class Lvl 3: General Purpose
Lookup Location: Various meter locations in Transmission System
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chandan Sood

Director: Chandan Sood

Project Score
0

Problem Statement:
Improving meter data reliability, ensuring accurate billing, improving customer service and allow high quality analysis of the system

Scope of Work/Project Alternatives:
The Proposed improvements should include the following; The replacements of meters that have surpassed their life expectancy, and or the current flow rates exceed the mechanical limits of the meter. Installing entrance hatches that allow safer ingress, and egress, and that can be locked for security. Sand blasting and painting of piping and walls. Waterproofing meter vaults to keep the ground water out. Provide a proper floor slope in meter chambers that allow water to settle in puddles. Repair...

Other Important Info:
Challenges: Requires temporary shutdown of the water supply through the meter.

Project History: Currently GLWA provides water service to 126 communities, and measures flows and volumes by the utilization of 290 wholesale water meters now in service; 17 of these meters are venturi-orifice type meters, 26 of these are dual venturi type meters, 48 of these single venturi type meters, 97 of these are magnetic flow type meters, and 102 of these are turbine or mechanical type meters. Meters were ...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$47	$1	$1	$45	$0	$0	$0	$0	$0	$0	$0
Construction (Build) (CON-285)	$10,589	$8,529	$8,529	$2,059	$0	$0	$0	$0	$0	$0	$0

CIP Number: 170902

Project Title: Brownstown Meter Pit

Project Status: Active - Pre-Procurement - Construction
Class Lvl 1: Water
Class Lvl 2: Metering
Class Lvl 3: General Purpose
Lookup Location: Brownstown Township
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Chandan Sood

Project Score
0

Problem Statement:
BR-01 is a deduct meter pit that serves Brownstown Charter Township. Deduct meter pits are more difficult to track water usage. BR-01 will be abandon and BR-08 will be installed has a direct meter pit to Brownstown Charter Township.

Scope of Work/Project Alternatives:
Abandoning the existing BR-01 deduct meter pit with building a new direct meter pit BR-08 for serving Brownstown Charter Township. The new direct meter pit (BR-08) will have a new magnetic flow meter, 12-inch gate valves, and 8-inch check valve. There will be installation of 6-inch, 8-inch, and 12-inch piping for the new meter pit. There will be a new water pressure reducing valve vault for Brownstown Charter Township with only installing the piping in the vault.

Other Important Info:
None at this time.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
GLWA Salaries	$55	$7	$7	$24	$23	$23
Design & Construction Assistance (CS-201)	$166	$78	$78	$43	$43	$43
Construction (Build)	$799	$0	$0	$321	$477	$477

CIP Number: 171500

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: All Water Facilities
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Project Score
0

Problem Statement:
This design build project will replace roofing systems on GLWA water plants, water booster pumping stations and sewage pumping stations that were determined to need replacement over the next 5 to 7 years based on the CS-1674 Roofing Assesment Contract. Replacement is needed to protect the facilities interigty with regards to interiors, sensitive electrical equipment and process mechanical equipment vital to operations.

Scope of Work/Project Alternatives:
Tear off of existing roofing systems and replace with new roofing systems

Other Important Info:
The total estimated replacement value (2016 dollars) of the 1,682,727 square feet of roofing at the water treatment plants, sewage pumping stations and water booster pumping stations is $33,142,054.

Project History: A condition assessment was performed and completed under Contract No. CS -1674 in 2016 that included all roofs located at GLWA's 5 water treatment plants, 19 water booster pumping stations and 11 sewage pumping stations. There were 268 separate roof sections totaling 1,682,727 s...

CIP Number: 171500

Project Title: Roof Replacement at WWP, SP, LH, NE, SW, NSC, Orion, Franklin, and Conner Creek Facilities

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$367	$0	$0	$0	$0	$0	$0	$0	$0	$0	$211
Design & Bid Assistance	$1,692	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,692
Design-Build # 1 (1803483)	$32	$0	$0	$0	$0	$0	$0	$0	$0	$0	$32
Design/Engineering	$13,816	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,191

CIP Number: 171502

Project Title: Lake Huron and Southwest Roof Replacement

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Water
Class Lvl 2: Treatment Plants and Facilities
Class Lvl 3: Lake Huron
Lookup Location: Wayne County outside of Detroit/ Saint Clair County
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Nick Hoffman

Director: Grant Gartrell

Project Score
0

Problem Statement:
This Design-Bid-Build project will replace identified roofing systems at GLWA Water Treatment Plants: Lake Huron and Southwest which were determined to need replacement over the next 6 to 8 years based on the CS-1674 Roofing Assessment Contract. Replacement is needed to protect the facilities integrity with regards to interiors, sensitive electrical equipment and process mechanical equipment vital to treatment and distribution operations.

Scope of Work/Project Alternatives:
Tear off existing roofing system and replace with new roofing systems as follows:
Lake Huron Water Treatment Plant: Flocculator Building A & B, built-up roof, Chlorine Room, built-up roof, Low Lift Building, built-up roof, Chemical Building A & B, built-up roof.
Southwest Water Treatment Plant: Lab and Office Building A & B, built-up roof, Administration Building A & B, built-up roof.

Other Important Info:
A condition assessment was performed and completed under Contract No. CS-1674 in 2016 that included all roofs located at GLWA's 5 water treatment plants, 19 water booster pumping stations and 11 sewage pumping stations. There were 268 separate roof sections totaling 1,682,727 square feet of roof inspected during this condition assessment project.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$91	$0	$0	$0	$0	$0	$0	$0	$0	$0	$91
Design/Engineering	$400	$0	$0	$0	$0	$0	$0	$0	$0	$0	$400
Construction	$2,211	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,211

6 WASTEWATER PROJECTS

94 PROJECTS

29 FUTURE PLANNED
49 ACTIVE
1 PENDING CLOSEOUT
10 CLOSED
5 RECLASSIFIED

5-YEAR CIP

$762 MILLION

10-YEAR OUTLOOK

$1.38 BILLION

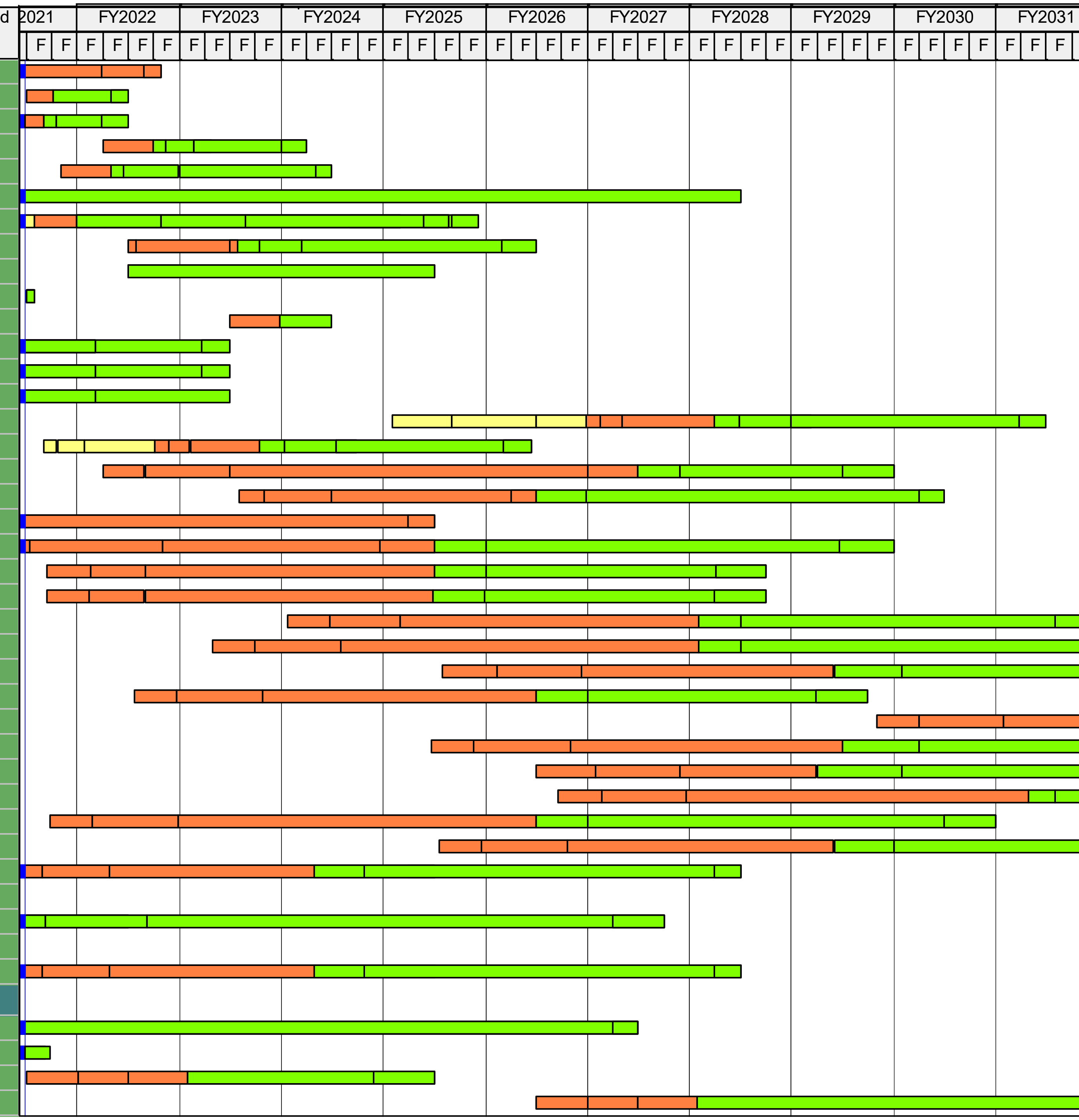
FOR MORE: APPENDIX B

FIND THE FULL BUSINESS CASE EVALUATIONS FOR WASTEWATER PROJECTS IN APPENDIX B.

Activity ID	Activity Name	Remaining Duration	Actual/Forecasted Start	Actual/Forecasted Finish
Wastewater Projects		10685	18-Nov-13 A	30-Sep-50
211001: WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Bu		731	18-Jul-16 A	30-Jun-23
211002: WRRF PS No. 2 Pumping Improvements - Phase 1		731	17-Oct-16 A	30-Jun-23
211004: WRRF PS #1 Rack & Grit and MPI Sampling Station 1 Improvements		93	18-Nov-13 A	30-Sep-21
211005: WRRF PS No. 2 Improvements Phase II		4384	07-May-20 A	30-Jun-33
211006: WRRF PS No. 1 Improvements		2862	17-Feb-20 A	30-Apr-29
211007: WRRF PS #2 Bar Racks Replacements and Grit Collection System Improvements		2923	01-Mar-21 A	30-Jun-29
211008: WRRF Rehabilitation of Ferric Chloride Feed System in PS-1 and Complex B Sludge Lines		670	17-Aug-20 A	30-Apr-23
211009: WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System		2558	07-May-20 A	30-Jun-28
211010: Rehabilitation of Sludge Processing Complexes A and B		3653	07-May-20 A	30-Jun-31
211011: WRRF PS1 Screening and Grit Improvements		3531	31-Oct-26	30-Jun-36
212004: WRRF Chlorination and Dechlorination Process Equipment Improvements		185	27-Jun-17 A	31-Dec-21
212007: WRRF Rehabilitation of the Secondary Clarifiers		10685	07-May-20 A	30-Sep-50
212008: WRRF Aeration Improvements 1 and 2		3288	20-Jul-20 A	30-Jun-30
212009: WRRF Aeration Improvements 3 and 4		3440	01-Aug-28	31-Dec-37
212010: WRRF Conversion of Disinfection of all Flow to Sodium Hypochlorite and Sodium Bisulfite		3867	01-Jun-26	31-Dec-36
213006: WRRF Improvements to Sludge Feed Pumps at Dewatering Facilities		1827	07-May-20 A	30-Jun-26
213007: WRRF Modification to Incinerator Sludge Feed Systems at Complex -II		731	22-Aug-16 A	30-Jun-23
213008: WRRF Rehabilitation of the Ash Handling Systems		3897	16-Oct-19 A	29-Feb-32
213009: WRRF Biosolids Processing Improvements		6053	06-Jun-23	31-Dec-39
214001: WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations		671	25-Jun-18 A	01-May-23
216004: Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF		255	27-May-17 A	11-Mar-22
216006: Assessment and Rehabilitation of WRRF yard piping and underground utilities		1462	17-Aug-20 A	30-Jun-25
216007: DTE Primary Electric 3rd Feed Supply to WRRF		184	01-Jul-18 A	30-Dec-21
216008: Rehabilitation of Screened Final Effluent (SFE) Pump Station		1827	07-May-20 A	30-Jun-26
216010: WRRF Facility Optimization		1827	07-May-20 A	30-Jun-26
216011: WRRF Structural Improvements		2376	07-May-20 A	31-Dec-27
222001: Oakwood District Intercommunity Relief Sewer Modification at Oakwood District		2558	15-Mar-21 A	30-Jun-28
222002: Detroit River Interceptor (DRI) Evaluation and Rehabilitation		2558	03-Jul-17 A	30-Jun-28
222004: Sewer System Infrastructure Improvements		1462	14-Oct-19 A	30-Jun-25
222004: Sewer System Infrastructure Improvements222004		2558	01-Jul-20 A	30-Jun-28
232001: Fairview Pumping Station - Replace Four Sanitary Pumps		371	25-Apr-16 A	05-Jul-22
232002: Freud & Conner Creek Pump Station Improvements		3653	30-Sep-16 A	30-Jun-31
232004: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION		276	03-May-21 A	01-Apr-22
233003: Rouge River In-system Storage Devices		3255	02-Feb-23	31-Dec-31
260200: Sewer and Interceptor Rehabilitation Program		3045	01-Jul-21	31-Oct-29
260201: CON-149, Emergency Sewer Repair		488	14-Jul-17 A	30-Oct-22
260204: Conveyance System Engineering Services-1802575		1097	01-Jun-20 A	30-Jun-24
260205: NWI Rehabilitation		1097	01-Jun-19 A	30-Jun-24
260206: Conveyance System Repairs (Sewers)		2923	01-Jan-21 A	30-Jun-29
260207: Rehabilitation of Woodward Sewer Systems		1536	02-Dec-20 A	12-Sep-25
260209: Sewer Rehabilitation and Repair		1462	01-Jun-21 A	30-Jun-25
260500: CSO Outfall Rehabilitation		2557	01-Jul-21	30-Jun-28
260505: Phase 4 Outfalls		93	01-Mar-20 A	30-Sep-21
260508: B-39 Outfall Rehabilitation		731	01-Jun-20 A	30-Jun-23
260509: B-40 Outfall Rehabilitation		1	01-Jun-20 A	30-Jun-21
260510: Conveyance System Repairs (Outfalls)		2923	01-Apr-21 A	30-Jun-29
260600: CSO FACILITIES IMPROVEMENT PROGRAM		8401	01-Jul-21	30-Jun-44
260603: Conner Creek CSO RTB Automation Improvements		335	12-Jun-18 A	30-May-22
260611: Leib SDF- HVAC System Improvements		31	01-Jul-21	31-Jul-21
260614: Structural Inspection & Structural Improvements		1312	19-Aug-19 A	31-Jan-25
260615: Puritan Fenkell & Leib Site Improvements		154	20-Dec-19 A	30-Nov-21
260617: St. Aubin Chemical Disinfection Improvements		1827	22-Jul-19 A	30-Jun-26
260618: Oakwood HVAC Project		657	11-Oct-19 A	17-Apr-23

Construction | Study | Design | Work In Progress

Activity ID	Activity Name	Remaining Duration	Actual/Forecasted Start	Actual/Forecasted Finish
260619: Control System Upgrade - St Aubin, Lieb & Mile		1371	15-Jan-20 A	31-Mar-25
260620: Baby Creek Roof Replacement		365	01-Jul-21	30-Jun-22
260621: Conner Creek Dike Improvements		366	29-Aug-20 A	30-Jun-22
260622: CSO Emergency Generator Improvements		731	01-Apr-22	31-Mar-24
260623: CSO Baby Creek Screen Rehabilitation		973	01-Nov-21	30-Jun-24
260700: Sewer System Infrastructure Improvements and Pumping Stations		2558	01-Jul-20 A	30-Jun-28
260701: Conveyance System Infrastructure Improvements		1618	25-Apr-20 A	03-Dec-25
260702: Pump Station Assets Updates		1461	01-Jul-22	30-Jun-26
260800: WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM		1096	01-Jul-22	30-Jun-25
260801: Sludge Pumping Station #3 Roof Replacement		31	01-Jul-21	31-Jul-21
260900: WRRF Facility Optimization Program		366	01-Jul-23	30-Jun-24
260901: Rehabilitation of HAZMAT Facility at WRRF		731	15-May-20 A	30-Jun-23
260902: WRRF 4th Floor Renovation		731	15-May-20 A	30-Jun-23
260903: WRRF Front Entrance Rehabilitation		731	15-May-20 A	30-Jun-23
261000: WRRF Rehabilitation of the Secondary Clarifiers		2342	01-Feb-25	01-Jul-31
261001: WRRF Rehabilitation of the Secondary Clarifiers Phase 1		1749	01-Sep-21	15-Jun-26
270001: Pilot CSO Netting Facility		2832	01-Apr-22	31-Dec-29
270002: Meldrum Sewer Diversion and VR-15 Improvements		2524	03-Aug-23	30-Jun-30
270003: Long Term CSO Control Plan		1462	01-Aug-19 A	30-Jun-25
270004: Oakwood and Leib CSO Facilities Improvement Project		3108	26-Jan-21 A	01-Jan-30
270005: CSO Facility Safety Improvements and Building Rehabilitation		2573	15-Sep-21	30-Sep-28
270006: Control System Upgrades at Baby Creek and Belle Isle CSO Facilities		2573	13-Sep-21	28-Sep-28
270007: Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CS(		2932	22-Jan-24	31-Jan-32
270008: Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities		3350	30-Apr-23	30-Jun-32
270009: Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities		2589	31-Jul-25	31-Aug-32
270010: HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities		2627	23-Jul-22	30-Sep-29
270011: HVAC Improvements at Conner Creek and Belle Isle CSO Facilities		1704	31-Oct-29	30-Jun-34
270012: Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities		2753	20-Jun-25	01-Jan-33
270013: Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities		2346	30-Jun-26	30-Nov-32
270014: Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities		3056	20-Sep-26	31-Jan-35
273001: Hubbell Southfield CSO Facility Improvements		3384	26-Sep-21	31-Dec-30
273002: CSO Hubbell Southfield VR-8 Gate Improvements		2723	19-Jul-25	31-Dec-32
274001: Leib Improvements for Meldrum Diversion		2558	01-Jul-20 A	30-Jun-28
276001: Dredging of Conner Creek		2133	01-Mar-35	31-Dec-40
277001: Baby Creek Outfall Improvements Project		2284	01-Aug-19 A	30-Sep-27
277002: Baby Creek CSO Facility Influent Flushing System		1618	19-Nov-31	23-Apr-36
278001: Oakwood Improvements for NWI Diversion		2558	30-May-21 A	30-Jun-28
Wastewater Projects - Central Services		4019	01-Apr-19 A	30-Jun-32
331002: RECLASSIFIED to 260800 <- Roofing Systems Replacement at GLWA WRRF		2192	01-Apr-19 A	30-Jun-27
341002: Security Infrastructure Improvements for Wastewater Facilities		122	15-Apr-19 A	29-Oct-21
381000: Power Quality: Electric Metering Improvement Program		1457	05-Jul-21	30-Jun-25
383300: Masonry Replacement and Rehabilitation Program		2192	01-Jul-26	30-Jun-32



Construction | Study | Design | Work In Progress

CIP Number: 211001

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Nicolas Nicolas

Director: Philip Kora

Project Score
0

Problem Statement:
Rehabilitation for meeting NPDES Permit and NEC requirements

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

Other Important Info:
Challenges: N/A - Active

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$1,018	$799	$799	$219	$0	$0	$0	$0	$0	$0	$0
Construction Assistance # 1 (1802474, CS-1432A, CS-1484, CS-291)	$769	$769	$769	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (PC-757)	$51,478	$51,478	$51,478	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous	$1,701	$1,701	$1,701	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 211002

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Vinod Sharma

Director: Philip Kora

Project Score
0

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$296	$232	$232	$64	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-1444, CS-255)	$241	$241	$241	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (PC-795)	$2,924	$2,043	$2,043	$881	$0	$0	$0	$0	$0	$0	$0

CIP Number: 211004

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

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Partho Ghosh

Director: Philip Kora

Project Score
0

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

Scope of Work/Project Alternatives:
The scope of work includes modifications and improvements of the existing grit and screening handling system at Pump Station 1 and MPI Sampling Station 1.

Other Important Info:
Challenges: N/A - Active

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$2,074	$2,074	$2,074	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering (CS-189 / CS-1432A / CS-1433 / 1903449)	$4,805	$4,805	$4,805	$0	$0	$0	$0	$0	$0	$0	$0
Construction (PC-789, CON-250)	$21,580	$21,580	$21,580	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 211005

Project Title: WRRF PS No. 2 Improvements Phase II

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**


Main Raw Sewage Pumps at Pump Station 2

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
77.4

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

Scope of Work/Project Alternatives:
The preliminary scope of this project is to provide basis of design (study) report for rehabilitation/rebuilding plan for existing pump and its control and any associated equipment. The study will look into the addition of VFD to the three constant speed pumps. The study will not be limited to increasing the capacity of existing pumps to meet the long-term goal for wet weather capacity. The Scope also include: Provide engineering design for rehabilitation/rebuilding of the pumps, replacement...

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

Project History: Pump Station No. 2 was built in 1994. Seven out of eight pumps were running since 1994. These pumps never attained the design capacity due to an unidentified drifting problem. The eighth pump (Pump No. 10) was installed under PC-740 with a modified suction elbow that prov...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$350	$2	$2	$0	$0	$28	$28	$29	$0	$87	$141
Study # 1	$10,387	$0	$0	$0	$0	$2,304	$2,304	$2,304	$0	$6,912	$2,821
Construction (Build) # 1	$56,264	$0	$0	$0	$0	$0	$0	$0	$0	$0	$45,484

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Pump Station 1

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
78.6

Problem Statement:
Condition assessment and rehabilitation of all pumps at Pump Station No. 1 to increase efficiency and reliability. Rehabilitate the pump station to extend life.

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

Other Important Info:
Challenges: Maintaining the adequate pumping capacity during construction.

Project History: GLWA operate two raw sewage pumping stations: PS-1 and PS-2, at the Water Resources Recovery Facility. Raw wastewater (influent) from the collection system flows to the Influent Pumping Station through the Detroit River Interceptor (16 feet in diameter), Oakwood Interceptor (12.5 feet in diameter) and North Interceptor East Arm (NIEA). The main Influent Pumping Station No. 1 (PS-1) was constructed in...

CIP Number: 211006

Project Title: WRRF PS No. 1 Improvements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$442	$151	$151	$120	$25	$25	$25	$25	$25	$125	$45
Study & Design & Construction Assistance # 1 (CS-102)	$4,420	$3,340	$3,340	$379	$100	$100	$100	$100	$100	$500	$200
Construction (Build) # 1	$65,178	$0	$0	$100	$7,974	$10,011	$10,011	$10,011	$10,011	$48,020	$17,058

CIP Number: 211007

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

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Pump Station 2, Grit channels

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
75.7

Problem Statement:
Replacement of all bar racks and associated equipment and addition of fine screens (1/4 inch) for more reliable and efficient screenings removal. Addition of screenings washing and compaction to reduce truck traffic and cost of disposal. Improvement of grit collection system with more efficient, state-of-the-art, grit collection and pumping system, and grit washing and classification to reduce truck traffic and cost of disposal. Improvements to the grit screenings and grit removal and handling ...

Scope of Work/Project Alternatives:
The work consists of evaluation, design and construction of the replacement of the existing bar racks and ancillary equipment and gates, addition of new fine screens (1/4 inch) downstream of the bar racks, addition of screenings washing and compaction, inclusion of stacked tray grit removal or other technology within the aerated grit tank and grit washing and/or classification. Work also includes the upgrade and expansion as necessary of the existing building that houses the screens and the scr...

Other Important Info:
*Innovation note: Include new grit removal equipment rather than replacement in kind (cyclonic).
The CIP Project Proposal – CIP 1314 – “Replacement of Bar Racks at Pump Station No. 2” and CIP Project Proposal – CIP 1223 – “Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WWTP” are combined into one project under CIP 1314. That combined new budget for CIP 1314 (CIP 1223 and 1314) has a total amount of $11,617,000. The design of “Rehabilitation of Sampl...

CIP Number: 211007

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$403	$123	$123	$34	$34	$35	$34	$34	$34	$174	$70
Study & Design & Construction Assistance # 1 (1904337)	$14,020	$1,385	$1,385	$2,965	$2,226	$1,242	$1,238	$1,238	$1,238	$7,185	$2,484
Construction (Build) # 1	$74,346	$0	$0	$0	$200	$11,826	$11,830	$11,830	$11,830	$47,517	$26,828

CIP Number: 211008

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**

Ferric Chloride Storage and Containment Area

Project Engineer/Manager: Chris Breinling

Director: Dan Alford

Project Score
78.3

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

Scope of Work/Project Alternatives:
The scope of work will include study design and construction for the ferric chloride feed system at PS-1. Specifically it will include: a study to evaluate alternative locations for application of ferric chloride, a pilot study to test alternative application points, and inspection of the existing chemical feed systems, a study to provide recommendations for system modifications and improvements, design of recommended system improvements, and construction of chemical feed system improvements. ...

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

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

Project History: There are phosphorous effluent permit limits for both prim...

CIP Number: 211008

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$410	$290	$290	$65	$54	$0	$0	$0	$0	$54	$0
Study & Design & Construction Assistance # 1 (CS-166)	$33	$33	$33	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering (1802543)	$2,356	$1,543	$1,543	$443	$370	$0	$0	$0	$0	$370	$0
Design/Enginerring (MISC)	$3	$3	$3	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (2002190)	$9,839	$0	$0	$7,757	$2,081	$0	$0	$0	$0	$2,081	$0

CIP Number: 211009

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

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Primary Circular Scum House, Inside

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
76.6

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

Scope of Work/Project Alternatives:
This project will provide for the study, design, and construction of new scum equipment in the Scum Buildings for the circular clarifiers. The study will consist of an evaluation of the existing process and simplified alternative systems for scum removal including the scum removal from the buildings. Future alternatives for scum disposal, such as addition to an anaerobic digestion process, will be considered. All alternatives will be evaluated for energy efficiency (reduction of electrical u...

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

Project History: There are 12 rectangular PCs (1-12) and 6 circular PCs (13-18) clarifiers at the WRRF. PCs remove TSS, BOD, and phosphorous through a chemically enhanced settling process. The clarifiers also remove fats, oils, and grease (FOG or scum) by skimming the surface of the clarifiers and transporting the scum to a SB where it can be concentrated and pumped again to be hauled off site. The SBs fo...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$328	$39	$39	$41	$41	$41	$41	$41	$41	$206	$41
Study & Design & Construction Assistance # 1	$3,093	$0	$0	$208	$958	$458	$366	$366	$366	$2,516	$368
Construction (Build) # 1	$18,367	$0	$0	$0	$0	$0	$4,592	$4,592	$4,592	$13,777	$4,590

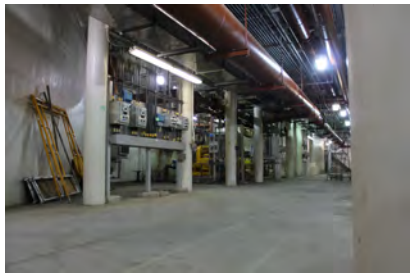
CIP Number: 211010

Project Title: Rehabilitation of Sludge Processing Complexes A and B

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**



Complex B, Basement

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
89.7

Problem Statement:

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

Scope of Work/Project Alternatives:

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

Other Important Info:

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$498	$94	$94	$0	$0	$0	$0	$67	$67	$134	$269
Study # 1	$3,316	$0	$0	$0	$0	$0	$0	$852	$852	$1,705	$1,610
Construction (Build) # 1	$16,079	$0	$0	$0	$0	$0	$0	$0	$0	$0	$16,079

CIP Number: 211011

Project Title: WRRF PS1 Screening and Grit Improvements

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Primary Treatment
Lookup Location: WRRF
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
77.5

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

Scope of Work/Project Alternatives:
The work consists of evaluation, design and construction of the addition of new fine screens (1/4 inch) downstream of the bar racks, addition of screenings washing and compaction, inclusion of stacked tray grit removal within the aerated grit tank and grit washing and/or classification. Work also includes the upgrade and expansion as necessary of the existing building that houses the screens and the screenings and grit handling and load out, including all lighting, HVAC, plumbing, electrical, a...

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$303	$0	$0	$0	$0	$0	$0	$168
Design & Construction Assistance # 1	$23,238	$0	$0	$0	$0	$0	$0	$16,568
Construction (Build) # 1	$69,458	$0	$0	$0	$0	$0	$0	$24,251

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Breinling

Director: Philip Kora

Project Score
94.5

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

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

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

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

CIP Number: 212004

Project Title: WRRF Chlorination and Dechlorination Process Equipment Improvements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$148	$148	$148	$0	$0	$0	$0	$0	$0	$0	$0
Construction Assistance # 1 (CS-1481, CS-301)	$331	$331	$331	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-238)	$5,163	$5,163	$5,163	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 212006

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

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: Rouge River Outfall

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Phillip Kora

Director: Philip Kora

Project Score
0

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

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

Other Important Info:
Challenges: N/A - Under Procurement.

Project History: The DR0-2 Outfall was originally designed in 1998 under CS-1150, and construction began in 1999 under PC-709. Some surface construction work and substantial underground work were performed, including construction of the entrance shaft, two access shafts, six diffuser riser shafts in the Detroit River, and about half of the length of the tunnel. On April 23, 2003, uncontrollable high rates of ground water mixed with Hydrogen Sulfide (H2S)...

CIP Number: 212006

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$597	$597	$597	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (PC-797)	$40,698	$40,698	$40,698	$0	$0	$0	$0	$0	$0	$0	$0
Construction Management # 1 (CS-1781, CS-1728)	$2,493	$2,493	$2,493	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 212007

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Project Status: Reclassified
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Secondary Clarifier

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
72

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

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$2	$2	$2	$0	$0	$0	$0	$0	$0	$0	$0
Study & Design & Construction Assistance # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Aeration Basin 1 and ILP's 1 and 2

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
76.3

Problem Statement:
The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen ...

Scope of Work/Project Alternatives:
The work consists of evaluation, design and construction of the replacement of ILPs 1 & 2, conversion of aeration decks 1 & 2 to incorporate biological phosphorus removal, including replacement of mixers in Bays 1, 2 and 3, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. Weir length will be increased to ...

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

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

Project History: ILP Station No. 1 houses ILP Nos. 1 and 2. The pumps are vertical turbine type each with a maximum capacity of 365 MGD and a motor size of 2,5...

CIP Number: 212008

Project Title: WRRF Aeration Improvements 1 and 2

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$1,719	$583	$583	$0	$0	$284	$73	$98	$98	$555	$581
Study & Design & Construction Assistance # 1	$8,715	$0	$0	$0	$0	$1,215	$2,571	$2,571	$2,357	$8,715	$0
Construction (Build) # 1	$63,448	$0	$0	$0	$0	$0	$10,638	$10,613	$10,613	$31,864	$31,584

CIP Number: 212009

Project Title: WRRF Aeration Improvements 3 and 4

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**

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

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
76.3

Problem Statement:

The ILPs convey primary effluent to the secondary bioreactors (aeration decks). These pumps have reached their useful life and are in need of replacement. The pump selection is integrally connected to improvements in the aeration decks related to the conversion to biological phosphorus removal, implementation of step feed and overall improved hydraulic control in the aeration decks and flow control through the secondary system. Implementation of biological phosphorus removal will reduce oxygen ...

Scope of Work/Project Alternatives:

The work consists of evaluation, design and construction of the replacement of ILPs 3, 4 & 7, conversion of aeration decks 3 & 4 to incorporate biological phosphorus removal, including replacement of mixers in Bays 1 and 2, relocation of the oxygen feed, and a new purge blower. Incorporation of step feed includes modification of the influent conditions to allow primary effluent to be directed to Bay 1, as well as two other locations down the length of the tank. An assessment of reconfiguring de...

Other Important Info:

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$355	$0	$0	$0	$0	$0	$0	$125
Design & Construction Assistance # 1	$14,701	$0	$0	$0	$0	$0	$0	$8,874
Construction (Build) # 1	$51,925	$0	$0	$0	$0	$0	$0	$0

CIP Number: 212010

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

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF

☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Chlorination Building, Inside

Project Engineer/Manager: TBD

Director: Dan Alford

Project Score
89.7

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

Scope of Work/Project Alternatives:
The work consists of evaluation of sodium hypochlorite and sodium bisulfite usage over the first three years of operation of the new system to assess actual dosage required to achieve permit compliance and storage available with the existing system. The assessment will include preliminary design of modifications required to enable sodium hypochlorite feed to the secondary treatment effluent and an assessment of the storage requirements at varying sodium hypochlorite concentrations. The assessme...

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$309	$0	$0	$0	$0	$0	$0	$145
Design & Construction Assistance # 1	$838	$0	$0	$0	$0	$0	$0	$838
Construction (Build) # 1	$4,308	$0	$0	$0	$0	$0	$0	$783

CIP Number: 213006

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

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Residuals Management
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Sludge Feed pump in Complex A

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
76.6

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

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

Other Important Info:
Challenges: Maintaining Plant Operational Capacity during construction.

Project History: Water Resource Recovery Facility (WRRF) has six (6) Sludge Storage Tanks (SST-1, 2, 3, 4, 5 &6), which feed sludge to the dewatering facilities (i.e. belt filter presses complexes and complex II centrifuges.) Typically, sludge from Storage Tanks 1 & 2 supplies the centrifuges on dewatering complex II upper level; sludge from Storage Tanks 3 & 4 supplies the centrifuges on the lower level of Dewatering...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$428	$194	$194	$36	$36	$20	$45	$95	$0	$198	$0
Study & Design & Construction Assistance # 1	$2,596	$0	$0	$363	$713	$750	$383	$384	$0	$2,232	$0
Construction (Build) # 1	$4,069	$0	$0	$0	$0	$1,645	$1,237	$1,186	$0	$4,069	$0

CIP Number: 213007

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Residuals Management
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Breinling

Director: Philip Kora

Project Score
96.2

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

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

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

Project History: The C-II Incineration complex is over 40 years old. Major rehabilitation had been deferred over the years in anticipation of an alternative Biosolids disposal solution to handle all the solids. The Complex-II have many major pieces of equipment that are nearing the end of their useful life a...

CIP Number: 213007

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$711	$556	$556	$155	$0	$0	$0	$0	$0	$0	$0
Study & Design & Construction Assistance # 1 (CS-060, CS-291, CS-1432A)	$2,302	$788	$788	$1,514	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-197)	$19,336	$17,316	$17,316	$2,019	$0	$0	$0	$0	$0	$0	$0
Miscellaneous	$1,458	$1,458	$1,458	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 213008

Project Title: WRRF Rehabilitation of the Ash Handling Systems

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Residuals Management
Lookup Location: WRRF
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Incineration Complex II, Ash System

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
59.5

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

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

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

Project History: The C-I and C-II Incinerators have been the primary source for processing Biosolids at the GLWA WRF since the plant was first built. The original ash handling system was a wet ash/sluicing process. The dry ash system was constructed in the 1960s and expanded with the construction of the C-II Incinerators in the 1970s. The wet ash system has not been in us...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$253	$26	$26	$0	$0	$0	$0	$37	$38	$75	$151
Study # 1 (1803499)	$1,049	$125	$125	$0	$0	$0	$0	$462	$461	$924	$0
Construction (Build) # 1	$5,048	$0	$0	$0	$0	$0	$0	$0	$0	$0	$5,048

CIP Number: 213009

Project Title: WRRF Biosolids Processing Improvements

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Residuals Management
Lookup Location: WRRF
☑ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Wilson

Director: Navid Mehram

Project Score
79.6

Problem Statement:
The COF includes three trains of live bottom sludge storage bins, lime silos, sludge/lime mixers and numerous belt and screw conveyors ultimately for truck loading. Lime can be added for odor reduction and the sludge landfilled or stabilized and land applied.

The Complex I incinerators were constructed in 1940 and include six, 11 hearth units with capacity of 10 wet tons/hr. These were decommissioned under CIP-1284 in early 2017.

Complex II Incineration were constructed in the 1970s and c...

Scope of Work/Project Alternatives:
The project will construct one/or a mix of the following scenarios:
1.MAD of Thickened Primary Sludge (TPS) and Thickened Fermented Sludge (TFS) with centrifuge dewatering and drying at a rehabilitated BDF.
2.Sludge screening, pre-dewatering, and THP of FS and MAD of hydrolyzed sludge and TPS. Centrifuge dewatering and drying of the digested sludge at a rehabilitated BDF.
3.Identical to Alt 3, but only for sludge that comes from PS2. PS1 sludge would be sent to digested sludge storage tan...

Other Important Info:
The COF includes three trains of live bottom sludge storage bins, lime silos, sludge/lime mixers and numerous belt and screw conveyors ultimately for truck loading. Lime can be added for odor reduction and the sludge landfilled or stabilized and land applied.

The Complex I incinerators were constructed in 1940 and include six, 11 hearth units with capacity of 10 wet tons/hr. These were decommissioned under CIP-1284 in early 2017.

Complex II Incineration were constructed in the 1970s and c...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$16,356	$0	$0	$0	$0	$2,700	$4,000	$6,700	$9,656
Construction	$163,643	$0	$0	$0	$0	$0	$0	$0	$30,294

CIP Number: 214001

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Industrial Waste Control
Lookup Location: System Wide
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Nicolas Nicolas

Director: Philip Kora

Project Score
88.5

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

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

Other Important Info:
Challenges: Maintaining the laboratory operations during relocation.

Project History: In accordance with the NPDES Permit, GLWA implements and enforces an Industrial Pretreatment Program (IPP), and regulates the discharge of wastewater from commercial and industrial sources throughout the service area. A key component of the IPP includes the performance of analytical testing on wastewater samples collected from industrial and commercial sources, in-system samples from the sewer system and...

CIP Number: 214001

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$205	$205	$205	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-262, CS-1481, 1901083)	$1,035	$985	$985	$50	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 2 (1803776, CON-280)	$13,040	$13,040	$13,040	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 216004

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Ihsan Wahab

Director: Philip Kora

Project Score
94.7

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

Scope of Work/Project Alternatives:
The scope of work includes:
Replacement of existing sampling equipment, installing new samplers, pumps, piping, housing and support equipment such as I&C, HVAC, etc. at the various sampling sites.
The scope also include:
Replacement of existing two steel Ferric Chloride tanks at PS#2 with four (4) smaller tanks.
Provide new piping layout, gravity feed, and self-cleaning strainer.
Rehabilitate Ferric Chloride Unloading station, associat...

Other Important Info:
*Innovation note: Rehab may include alternative online/real-time sampling & analysis, as well as improved mixing of the ferric with primary influent.
The original CIP Project Proposal CIP-1223, “Rehabilitation of Grit and Screening System at PS-2 and Rehabilitation of Sampling Sites at WWTP” included two major scope items; Rehabilitation of Grit & Bar Screening System and Sampling Stations. That construction budget for CIP-1223 amount $11 M was set aside in CIP. The design for Grit & Screenin...

CIP Number: 216004

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$255	$199	$199	$55	$0	$0	$0	$0	$0	$0	$0
Construction Assistance # 1 (CS-301, CS-292, CS-1481, CS-1499)	$996	$918	$918	$78	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1802410)	$4,029	$1,953	$1,953	$2,076	$0	$0	$0	$0	$0	$0	$0

CIP Number: 216006

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

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Secondary Area

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
79

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

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$447	$176	$176	$0	$90	$90	$90	$0	$0	$270	$0
Design & Construction Management # 1	$1,335	$491	$491	$61	$782	$0	$0	$0	$0	$782	$0
Construction (Build) # 1	$19,325	$370	$370	$145	$2,090	$9,341	$7,377	$0	$0	$18,809	$0

CIP Number: 216007

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

Project Status: Pending Closeout
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Phillip Kora

Director: Philip Kora

Project Score
0

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
GLWA Salaries	$586	$586	$586	$0
Design & Construction Assistance # 1 (CS-189, CS-1433)	$82	$82	$82	$0
Construction (Build) # 1	$3,243	$3,243	$3,243	$0

CIP Number: 216008

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

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☐ **Project New to CIP:**

- ☑ **Innovation**
- ☑ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


SFE Building, Basement

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
63.2

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

Scope of Work/Project Alternatives:
This project will include the study, design, and construction for the needed improvements to the SFE pump station. This includes required capacity, pumps, strainers, piping, controls, building improvements, and electrical supply. This will also include a study to evaluate the potential for replacing the secondary water utilization with SFE utilization where feasible and an alternative analysis to the existing carrier water at chlorination/dechlorination facility, seal water, recovery needs wh...

Other Important Info:
*Innovation note: optimize of a valuable resource recovered for facility needs. Project History: The SFE pump station has eight pumps with a total capacity of approximately 135 MGD. Pumps 1,2,4, and 6 were installed in 1973, pumps 3 and 5 in 1980, and pumps 7 and 8 in 1998. The older pumps were rebuilt in 1998. Strainers have been reconditioned as necessary over time. Due to the critical nature of the SFE pump station and the elapsed time since a major rehabilitation (over 15 years), a signifi...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$406	$34	$34	$121	$62	$62	$62	$62	$0	$250
Study # 1 (1802887)	$4,104	$29	$29	$1,378	$673	$675	$673	$675	$0	$2,697
Construction (Build) # 1	$35,714	$198	$198	$0	$1,773	$10,110	$10,112	$13,519	$0	$35,516

CIP Number: 216010

Project Title: WRRF Facility Optimization

Project Status: Reclassified
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☐ **Project New to CIP:**

- ☑ **Innovation**
- ☑ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☐ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
75.1

Problem Statement:
The existing WRRF is a product of countless construction projects over nearly 90 years and consists of numerous process and non-process buildings with varying levels of use and practicality. As WRRF across the nation come out of the shadows and into the light of the public and elected officials it is critical to convey an image that reflects the pride and importance of the work that is done every day at this facility. As such, this project will work on the softer side of the facility, create a...

Scope of Work/Project Alternatives:
The work consists of extending the evaluation performed as a part of Master Planning to design and construct site modifications including but limited to a new visitor center, demolition or repurposing of existing structures that are no longer used, consolidation and/or reconfiguration of administration, operations and maintenance staff and spaces, vehicle and equipment storage spaces, shops, etc. The project also includes site modifications to include improved site circulation, parking and...

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 216011

Project Title: WRRF Structural Improvements

Project Status: Active - Pre-Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Incineration Building

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
64.4

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

Scope of Work/Project Alternatives:
The program will include a complete field assessment and structural condition report, classification of recommended repairs into levels of urgency, estimating quantities and the costs of repairs, developing a three-year repair program to address high priority repairs, design and implementation of repairs, preparation of as-built's and final project report, in connection with the Work. The Work includes improvements to be designed, administered, and constructed by the D/B Contractor, inclusive o...

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$333	$0	$0	$0	$60	$60	$60	$60	$60	$302	$30
TBD / Future Allocation / General Holding	$11,066	$0	$0	$0	$339	$2,426	$2,427	$2,427	$2,427	$10,048	$1,018

CIP Number: 222001

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

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: Interceptor
Lookup Location: Oakwood District
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☑ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☑ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Overall Plan for NWI Diversion to Oakwood Facilities

Project Engineer/Manager: Biren Saparia

Director: Biren Saparia

Project Score
62.7

Problem Statement:

The Oakwood PS and CSO basin are currently under-utilized. In the meantime, surcharging in Northwest Interceptor has increased the CSOs and reduced the ability of customers to discharge into the NWI. The concept to isolate the downstream portion of the NWI from the WRRF and divert flow to the Oakwood PS was evaluated and refined under the Wastewater Master Plan Project. The purpose of this project is to implement the WWMP recommended relief connection from the NWI to the Oakwood PS.

Scope of Work/Project Alternatives:

The scope of this project involves Study, Design, and Construction Phase Activities. The study phase will consist of determining the feasibility of advancing the project to the Design and Construction stages. Based on the efforts under the Study, and following receipt of written authorization from GLWA, the Consultants will proceed with the Design and Construction Phase Activities.

Other Important Info:

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

Challenges: Maintaining the wet weather contract capacities and adequate CSO treatment during extreme storm events and mitigate basement and street flooding in the District and intercommunity...

CIP Number: 222001

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

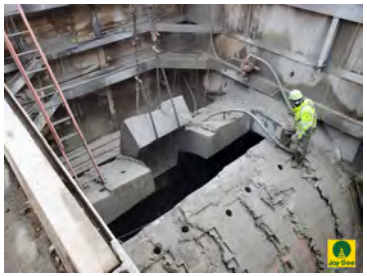
Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$394	$3	$3	$55	$55	$55	$55	$55	$55	$278	$56
Study & Design & Construction Assistance # 1 (2002655)	$5,782	$471	$471	$1,126	$1,126	$1,129	$274	$550	$550	$3,630	$553
Construction (Build) # 1	$47,289	$0	$0	$0	$0	$0	$10,488	$13,516	$12,396	$36,401	$10,887

CIP Number: 222002

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

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: Interceptor
Lookup Location: Detroit River Interceptor
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☑ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**


DRI Shaft Construction

Project Engineer/Manager: Mini Panicker

Director: Todd King

Project Score
66.4

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

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

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

Project History: The installation of some of the GLWA interceptors and sewers are dated back to 1912 under various contracts.
Detroit River Interceptor inspection was completed in 5 different phases and there were portions deteriorated with visible surface aggregates, attached encrustation and i...

CIP Number: 222002

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

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$430	$181	$181	$35	$35	$35	$35	$35	$35	$177	$35
Design-Build # 2 (CON-183, DB-226)	$55,724	$36,915	$36,915	$10,436	$8,372	$0	$0	$0	$0	$8,372	$0
TBD / Future Allocation / General Holding # 1	$21,028	$0	$0	$0	$1,007	$3,024	$3,010	$3,010	$3,010	$13,064	$7,964

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Stations
Lookup Location: Fairview Pumping Station
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Mike Graham

Director: Grant Gartrell

Project Score
0

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

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

Other Important Info:
Schedule delay due to Abnormally and excessively high dry weather flows exceed the planned design capacity of the temporary sewage by-pass pumping station. Delaying the installation of the new pumping units at Fairview Station while waiting for dry weather flows to subside to normal flows poses the risk of not being able to pump dry weather flows in the event that another sewage pump permanently fails at Fairview Station. Increasing the capacity of the temporary by-pass sewage pumping station, ...

CIP Number: 232001

Project Title: Fairview Pumping Station - Replace Four Sanitary Pumps

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$263	$248	$248	$15	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-1747, CON-297, CS-1488)	$7,340	$4,469	$4,469	$2,832	$38	$0	$0	$0	$0	$38	$0
Construction (Build) # 1 (CON-297)	$32,151	$25,653	$25,653	$6,498	$0	$0	$0	$0	$0	$0	$0

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Stations
Lookup Location: Conner Creek & Freud Pump Stations
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Both PSs pictures

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
94.1

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

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

Other Important Info:
Challenges: Meeting the collection system transport capacity during the construction.

Project History: The Connor Creek Pump Station (CCPS) was originally built in 1928 with four storm water pumps, each with a rated capacity of 500 cubic feet per second (cfs). The CCPS was expanded in 1940 adding four more pumps of the same capacity. The pump station currently has a total capacity of 4,000 cfs and a firm capacity of 3,500 cfs. The pumps are primed using a vacuum system that relies on the f...

CIP Number: 232002

Project Title: Freud & Conner Creek Pump Station Improvements

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$1,319	$924	$924	$39	$39	$39	$39	$39	$39	$197	$157
Design # 1 (CS-120)	$34,130	$4,335	$4,335	$2,977	$2,977	$2,985	$2,977	$2,977	$2,977	$14,893	$11,924
Construction (Build) # 1 (CON-109)	$5,299	$5,299	$5,299	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Phase 2) - Freud Pump Station	$56,791	$0	$0	$763	$7,736	$16,793	$29,636	$1,860	$0	$56,028	$0
Construction (Phase 3) - Connor Pump Station	$165,257	$0	$0	$0	$0	$0	$0	$27,815	$27,160	$54,975	$110,281

CIP Number: 232004

Project Title: CONDITION ASSESSMENT AT BLUE HILL PUMP STATION

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: Pump Stations
Lookup Location: Blue Hill Pump Station - Detroit
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☑ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Project Engineer/Manager: Todd King

Director: Todd King

Project Score
0

Problem Statement:
The condition of the Blue Hill PS has not been accurately established to the metrics being established for other GLWA pumping stations. A new condition assessment is required.

Scope of Work/Project Alternatives:
Perform station inspection by a multi-discipline team of specialists in pumps, valves, electrical, HVAC, structural, building envelope I&C, security, and building mechanical systems. Perform wire to water efficiency tests

Other Important Info:
Performance of this pumping station is related with flood control objectives for Conner and Freud Pumping Stations.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
GLWA Salaries	$57	$0	$0	$57
Study # 1	$200	$0	$0	$200

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: In System Devices (Dams, ISD's)
Lookup Location: Rouge Riiver

☐ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
88.2

Problem Statement:

The Rouge River receives untreated CSO discharges from GLWA CSO outfalls and outfalls from other Member combined sewer systems during wet weather. CSO control strategies that deal with first flush capture from small storms is typically a cost-effective implementation step in a CSO control program. Studies for the Wastewater Master Plan have shown the effectiveness of controlling first flush for small storms with receiving water modeling. 9 locations on DWSD trunk sewers east of the Rouge R...

Scope of Work/Project Alternatives:

Perform sewer inspections, utility survey, and flow metering to establish and prioritize the siting of 9 new In-System Storage Devices (ISD)

Perform preliminary and final design of the ISDs, including upstream and downstream access points, power supply and instrumentation.

Construct 9 new inflatable dam in-system storage devices (ISD). Modify existing manholes or construct new access points upstream and downstream of each ISD. Provide electrical power, above ground structures for pneum...

Other Important Info:

The new ISD devices would be installed in trunk sewers owned and operated by DWSD. These are not GLWA leased sewers. A legal agreement may need to be prepared for GLWA to construct, operate, and maintain.

CIP Number: 233003

Project Title: Rouge River In-system Storage Devices

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$378	$0	$0	$0	$0	$1	$8	$10	$10	$30	$348
Study & Design & Construction Assistance # 1	$8,839	$0	$0	$0	$0	$44	$190	$234	$234	$704	$8,134
Construction (Build) # 1	$37,099	$0	$0	$0	$0	$186	$800	$984	$984	$2,956	$34,143

CIP Number: 260200

Project Title: Sewer and Interceptor Rehabilitation Program

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Todd King

Project Score
0

Problem Statement:
Rehabilitation and replacement program of the existing sewers and interceptors is identified after the condition assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:
Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

Other Important Info:
Challegers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TBD / Future Allocation / General Holding	$65,845	$0	$0	$4,910	$6,603	$6,643	$5,793	$5,793	$1,100	$25,934	$35,000

CIP Number: 260201

Project Title: CON-149, Emergency Sewer Repair

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Todd King

Project Score
0

Problem Statement:
Rehabilitation and replacement program of the existing sewers and interceptors is identified after the conditiio assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:
Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

Other Important Info:
Challegers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$347	$318	$318	$21	$7	$0	$0	$0	$0	$7	$0
Design-Build # 1 (CON-149)	$37,904	$28,786	$28,786	$6,074	$3,043	$0	$0	$0	$0	$3,043	$0

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Woodward Sewer System

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
Rehabilitation and replacement program of the existing sewers and interceptors is identified after the conditiio assessment. This replacement, rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:
Provide CCTV and/or sonar inspection of the GLWA Collection System Interceptors and Trunk Sewers to reveal the existing conditions as per the National Association of Sewer Service Companies' (NASSCO) Pipeline Assessment Certification Program (PACP) standards, evaluate the existing conditions, and provide the necessary cleaning/rehabilitation/replace to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

Other Important Info:
Challegers: Large sewers and interceptors may have flow control challenges for both inspection and rehabilitation.

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

CIP Number: 260204

Project Title: Conveyance System Engineering Services-1802575

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$227	$17	$17	$52	$52	$52	$52	$0	$0	$157	$0
Study & Design & Construction Assistance # 1 (1802575)	$5,957	$925	$925	$1,223	$1,266	$1,270	$1,270	$0	$0	$3,807	$0
Construction (Build) # 1	$43,868	$0	$0	$0	$9,849	$17,034	$16,984	$0	$0	$43,868	$0

CIP Number: 260205

Project Title: NWI Rehabilitation

Project Status: Active - Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
60.3

Problem Statement:
The North West Interceptor (NWI) was constructed between 1928 and 1950 and is unique among the GLWA interceptors in that the NWI periodically reduces in size at certain locations to restrict downstream conveyance to the Water Resource Recovery Facility (WRRF). A task was initiated under the contract CS-168 to perform the condition assessment and design for the rehabilitation of NWI from Eight Mile to Tireman.

Scope of Work/Project Alternatives:
Scope of work is the rehabilitation of NWI from Eight Mile to Tireman mainly debris removal, deep concrete repairs, brick repairs, tuck pointing etc. to reduce infiltration and to increase the conveyance capacity.

Other Important Info:
Two flow control structures were constructed under CON-149 contract to facilitate condition assessment and
rehabilitation for portions of the NWI south of McNichols

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	$114	$0	$0	$10	$52	$52	$0	$104
TBD / Future Allocation / General Holding	$10,264	$267	$267	$27	$4,991	$4,977	$0	$9,969

CIP Number: 260206

Project Title: Conveyance System Repairs (Sewers)

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
Rehabilitation program of the existing sewers and interceptors is identified after the condition assessment. This rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy.

Scope of Work/Project Alternatives:
Evaluate the existing conditions of Brush, Joy Road, &Seven Mile Sewers. Provide the necessary cleaning/rehabilitation/replacement to optimize the design capacity of the collection system and to minimize the inflow and infiltration into the collection system.

Other Important Info:
This Engineering Services contract also includes the remaining CSO outfalls which is being funded by the Outfall Program, 260500

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$319	$2	$2	$39	$39	$39	$39	$39	$39	$198	$79
Design & Construction	$34,950	$20	$20	$5,109	$2,109	$2,960	$5,123	$5,109	$5,109	$20,412	$9,408

CIP Number: 260207

Project Title: Rehabilitation of Woodward Sewer Systems

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
76.8

Problem Statement:
During the initial condition assessment, Woodward Sewer was ranked high in the rehabilitation list since there were several grade 3, 4 and 5 defects, root intrusions, as well as several instances of missing bricks and infiltration throughout the pipe segments. This rehabilitation is essential to optimize the transportation capacity of the Woodward Sewer and the GLWA collection system and to increase its life expectancy

Scope of Work/Project Alternatives:
scope of work to be performed on this project includes rehabilitation of existing sewers generally along Woodward Avenue in Detroit, MI from McNichols Road at the north end to the location of the B-21 regulator south of Jefferson Avenue. In addition, two segments that connect to the sewer on Woodward Avenue will be rehabilitated: 1.Woodward Extension-just north of the Detroit-Highland Park city border on Highland Street west from Woodward Avenue to a parallel sewer line running south on Thir...

Other Important Info:
NA

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	$10	$4	$4	$1	$1	$1	$1	$4
Design/Engineering (1802575)	$1,224	$1,224	$1,224	$0	$0	$0	$0	$0
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$17,924	$0	$0	$3,369	$4,847	$4,860	$4,847	$14,554

CIP Number: 260208

Project Title: Rehabilitation of Conner Creek Sewer Systems

Project Status: Reclassified
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: General Purpose
Lookup Location:

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
Condition assessment of Connor Creek Sewer revealed infiltration drippers, runners, and gushers throughout the system. Inspections also revealed longitudinal cracking in the circular sewer, significant reinforcement visible in the Double Barrel sewer and grit/debris in several sections of the CCSS. To optimize the collection system capacity and to increase its life expectancy rehabilitation of Connor Creek Sewer is essential.

Scope of Work/Project Alternatives:
: Scope of work to be performed for the rehabilitation of the Connor Creek Sewer mainly includes heavy cleaning, slip lining, spot repairs, and manhole rehabilitation.

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs

CIP Number: 260209

Project Title: Sewer Rehabilitation and Repair

Project Status: Active - Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Systems Control Center
Class Lvl 3: General Purpose
Lookup Location: Sewers and Interceptors
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
61.3

Problem Statement:
GLWA collection system has a network of aging and deteriorated sewers. Due to the age and deterioration, immediate sewer repair/rehabilitation services are often necessary to avoid basement flooding and maintain the flows within the wastewater conveyance system. This contract is to continue the as needed sewer repairs, inspection, and rehabilitations to help GLWA optimize the collection system capacity.

Scope of Work/Project Alternatives:
Scope of work to be performed under this contract includes as needed repair, inspection, heavy cleaning, and rehabilitation to bring back the sewer system to its normal capacity and function and to avoid collapse.

Other Important Info:
This is a replacement contract for the current CON-149.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction	$12,200	$0	$0	$4,504	$5,862	$1,832	$0	$0	$12,200

CIP Number: 260500

Project Title: CSO Outfall Rehabilitation

Project Status: Active - Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: CSO Outfalls
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

Scope of Work/Project Alternatives:
Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

Other Important Info:
PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Challenges: Some outfalls are below the river elevation; rehabilitation may be challenging.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$3,500	$0	$0	$3,185	$315	$0	$0	$0	$0	$315	$0
TBD / Future Allocation / General Holding # 1	$7,753	$0	$0	$7,033	$720	$0	$0	$0	$0	$720	$0
TBD/Unallocated	$10,246	$0	$0	$1,423	$606	$1,646	$1,641	$1,641	$1,641	$7,177	$1,646

CIP Number: 260504

Project Title: Phase 2 Outfalls- 19000796

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: CSO Outfalls
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

Scope of Work/Project Alternatives:
Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

Other Important Info:
PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Challenges: Some outfalls are below the river elevation; rehabilitation may be challenging.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
GLWA Salaries	$23	$12	$12	$11
Construction (Build) # 1 (CS-168, 1900076)	$5,018	$4,888	$4,888	$130

CIP Number: 260505

Project Title: Phase 4 Outfalls

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: CSO Outfalls
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Phase IV construction at Outfall B-19

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT. Rehabilitation of the CSO outfalls is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer back up into the Conveyance System. Recent inspections of the outfalls revealed structural deficiencies like fractures, missing mortar from bricks etc. There are sediment and debris deposits in many of them.

Scope of Work/Project Alternatives:
Preliminary Scope of Work of the project is construction. Contract CS-168 will review the existing records, evaluate the existing conditions, and provide the necessary design to rehabilitate the outfalls. Another Engineering Services contract will be initiated after the CS-168 contract.

Other Important Info:
PROJECTS 222006 AND 233001 HAVE BEEN INCORPORATED INTO THIS PROJECT.

Project History: The construction of these outfalls are dated back to the early 1900s under various contracts.

Challenges: Some outfalls are below the river elevation; rehabilitation may be challenging.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
GLWA Salaries	$87	$15	$15	$71
Construction (Build) # 1 (CS-168, 1902658)	$5,620	$4,923	$4,923	$696

CIP Number: 260508

Project Title: B-39 Outfall Rehabilitation

Project Status: Active - Procurement - Negotiation Phase - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: CSO Outfalls
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:

: B-39 outfall was constructed in 1928. Findings from the recent investigations indicate that the outfall barrel is structurally compromised, with significant cracking, springline crushing, and general deterioration of the concrete liner. Rehabilitation of this CSO outfall is essential to properly discharge the uncontrollable combined sewer overflows to the receiving waters and to prevent sewer
back up into the Conveyance System.

Scope of Work/Project Alternatives:

Scope of work to be performed for the rehabilitation of this outfall mainly includes isolation and dewatering of the outfall, repairing to seal the cracks/leaks, and heavy cleaning

Other Important Info:

NA

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
GLWA Salaries	$180	$0	$0	$90	$90	$0	$90
Design/Engineering	$388	$150	$150	$238	$0	$0	$0
Construction	$8,186	$0	$0	$2,885	$5,301	$0	$5,301

CIP Number: 260509

Project Title: B-40 Outfall Rehabilitation

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: CSO Outfalls

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
The outlet for Outfall B-40 was originally constructed in 1887. In November, 2019, a shoreline collapse occurred immediately downstream of the outlet of Outfall B-40, causing a loss of ground into the Detroit River and displacing the outlet structure of Outfall B-40.

Scope of Work/Project Alternatives:
Scope of work was river bank restoration and seawall construction. As part of the seawall construction the collapsed B-40 outfall was reconstructed and integrated with the seawall. All functions of the outfall was restored.

Other Important Info:
Design/Construction of this project was completed by the property owner. GLWA Consultants provided the Construction supervision only.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
GLWA Salaries	$6	$0	$0	$6
TBD / Future Allocation / General Holding	$77	$77	$77	$0

CIP Number: 260510

Project Title: Conveyance System Repairs (Outfalls)

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: CSO Outfalls
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
0

Problem Statement:
Rehabilitation program of the existing CSO outfalls, sewers and interceptors is identified after the condition assessment. This rehabilitation and cleaning program is essential to optimize the transportation capacity of the GLWA collection system and to increase its life expectancy

Scope of Work/Project Alternatives:
Evaluate the existing conditions of the remaining CSO outfalls, provide the necessary cleaning/rehabilitation to optimize the design capacity of the collection system and to minimize the uncontrolled CSO discharges to the rivers

Other Important Info:
This Engineering Services contract also includes Joy Rd, Seven Mile, and Bates sewers which is being funded by the Sewer and Interceptor Rehabilitation Program, 260200

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$331	$2	$2	$41	$41	$41	$41	$41	$41	$205	$82
TBD / Future Allocation / General Holding TBD	$35,494	$32	$32	$814	$1,299	$1,729	$4,958	$6,711	$6,711	$21,410	$13,236

CIP Number: 260600

Project Title: CSO FACILITIES IMPROVEMENT PROGRAM

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Conner Creek, Seven Mile, Puritan-Fenkell, Hubble-Southfield, Belle Isle, Oakwood CSO Basins, Baby Creek, Leib and St. Aubin Screening and Disinfection Facilities

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Conner Creek CSO Facility

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
0

Problem Statement:
This program is being established to facilitate the study, design, construction administration, and construction of improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

Scope of Work/Project Alternatives:
This program is established to fund projects which may pop up in the near term of each fiscal year that were not budgeted for previously. Scope of work will vary from roof replacement, to equipment replacement, to various other facility improvements.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TBD / Future Allocation / General Holding # 1	$1,045,500	$0	$0	$1,000	$1,500	$1,500	$1,500	$1,500	$1,500	$7,500	$47,000

CIP Number: 260601

Project Title: Oakwood CSO Control Facility Drain Valve Improvements

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Oakwood
Lookup Location: Oakwood CSO

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Leaking Conduit in Drain Vault

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
20

Problem Statement:
Water infiltration through electrical conduits has caused cascading failures of vault valves, electrical and controls equipment. This has resulted in manual operation which creates difficulties operating and safety issues for continual access to this space (it's a deep vault).

Scope of Work/Project Alternatives:
This project will replace all electrical conduits that are compromised, valves, actuators, controls, sump pumps, and other items damaged from the vault flooding.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$117	$117	$117	$0	$0	$0	$0	$0	$0	$0	$0
Design # 1	$28	$28	$28	$0	$0	$0	$0	$0	$0	$0	$0
Construction Assistance # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-254)	$659	$659	$659	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Conner Creek
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Effluent Relief Gate Repair

Project Engineer/Manager: Ihsan Wahab

Director: Chris Nastally

Project Score
20

Problem Statement:
Effluent gates were leaking with river water in the basin. Based on CS-116 study, seals and seats of some of Effluent Relief gates found to be damaged. A data network style connection was used (versus hardwired) between the gates and the SCADA system. This network has been unreliable and difficult to maintain. Electrical and control cables were compromised due to their installation on the top of the concrete slab of RTB roof.

Scope of Work/Project Alternatives:
Scope work includes but not limited to replacement of existing seals and seats of effluent relief gates (ERGs) and effluent launder gates (ELGs), replacement and alignment of stems for ELGs, assessment and replacement of ERGs stems (based on assessment), existing pull boxes and cover replacement on top of RTB roof, existing fiber optic cable and conduit replacement, hard-wiring ELGs and ERGs actuators for reliable operation, secondary power feed for effluent gates, replacement of RIO5 and RIO6,...

Other Important Info:
CS-172 has been closed out as of 09/23/19. Influent flowmeters replacement work is added as part of CCD-A and CO No. 2 of this contract.

CIP Number: 260603

Project Title: Conner Creek CSO RTB Automation Improvements

Current Expenses (All figures are in $1,000's)

"Total Costs" include costs outside of the 10 year planning window

***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$358	$280	$280	$77	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1 (CS-172, CS-116, CS-166, CON-234)	$486	$363	$363	$123	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CON-234)	$7,264	$6,808	$6,808	$456	$0	$0	$0	$0	$0	$0	$0
Miscellaneous	$65	$65	$65	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260609

Project Title: Seven Mile RTB - Parking Lot Replacement & Misc. Site Work

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: 7 Mile CSO
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


New Parking Lot and Hatch Work

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
20

Problem Statement:
The 7 Mile Parking Lot is failing in many locations, traps water in many locations, and slopes towards the building directing water towards the building during rain. See scope of work for additional problems addressed by this project.

Scope of Work/Project Alternatives:
In addition to the problem statement, the grading in the front and side of the site slopes towards the building with no catch basins also creating water infiltration issues inside of the building. The sidewalk has completely failed and the hatch at the front entrance has damage to it leaving a hole to trip or injure someone. This project will fix the parking lot, grading issues, sidewalk, and hatch, This project will also address landscaping (because of regrading) and provide landscaping which...

Other Important Info:
Rain Water is pooling near the back up generator and presents a safety hazard.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$31	$31	$31	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1804112, 1802878)	$398	$398	$398	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260610

Project Title: Baby Creek SDF - HV Units Replacement

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Baby Creek
Lookup Location: Dearborn

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

New Air Handling Unit

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
20

Problem Statement:
Replace Make Up Air Units at Baby Creek as they are past their life and non-efficient due to their installation orientation.

Scope of Work/Project Alternatives:
Replacing existing make up air units with a newly designed unit to increase air flow to the space as well as increase temperature control in the screening area.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$11	$11	$11	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1803113)	$263	$263	$263	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260611

Project Title: Leib SDF- HVAC System Improvements

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Detroit
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Leib HVAC - Frozen Dampers

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
0

Problem Statement:
Many components of the Leib HVAC system have failed. These are causing ventilation issues, air quality issues, and likely are also a source of increased/accelerated corrosion of equipment in the facility. Two relief dampers on each end of the facility have been frozen and not in operation.

Scope of Work/Project Alternatives:
The scope of work includes but not limited to replacement of 60" damper with access door in thee basin, replacement of relief air dampers and actuators on existing louvers at both end of the facility, provide new HVAC DDC system, etc.

Other Important Info:
CO No.1 was issued in 03/2020 due to GLWA's denial of Decima as their subcontractor. Additional amount of $100,962 and time extension was added to this project as part of CO No. 1.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$80	$80	$80	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering # 1 (CS-255)	$10	$10	$10	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (1803718)	$321	$321	$321	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260613

Project Title: Baby Creek HVAC Improvements

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Dearborn
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Existing Dampers

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
20

Problem Statement:
This project expands on the MAU replacement project by addressing other HVAC issues through out the facility, such as control building, screening building, etc.

Scope of Work/Project Alternatives:
The scope of work includes but not limited to modifications to ventilation system in the Electrical room, replacement of dampers and actuators in the screening building, replacement of actuators for dampers in chem room, installation of temp sensors throughout control buildings, installation of new DDC system.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22
GLWA Salaries	$52	$40	$40	$11
Design/Engineering (1803675)	$1	$1	$1	$0
Construction (Build) # 1 (1901609)	$550	$487	$487	$62

CIP Number: 260614

Project Title: Structural Inspection & Structural Improvements

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Wayne

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Existing Structural Condition

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
20

Problem Statement:

A partial structural condition assessment has been performed and structural improvement (types) identified and prioritized. This project will provide Design-Build service to completely inspect all CSO Facilities (above and below ground) and prioritize to be carried out over a 3-5 year period.

Scope of Work/Project Alternatives:

The scope of work includes at each of nine CSO facilities such as a complete field assessment and structural condition report, classification of recommended repairs into levels of urgency, estimating quantities and the costs of repairs, developing a three-year repair program to address high priority repairs, design and implementation of agreed upon repairs, preparation of as-built drawings and final project report, etc. The Work includes improvements to be designed, administered, and constructe...

Other Important Info:

Consideration of Shared Service Agreement with DWSD regarding the costing for Belle Isle facility.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$119	$25	$25	$26	$26	$26	$15	$0	$0	$68	$0
Construction Assistance (CS-166)	$1,325	$359	$359	$268	$268	$269	$158	$0	$0	$696	$0
Design-Build # 1 (1902224)	$12,145	$2,152	$2,152	$2,805	$2,805	$2,813	$1,567	$0	$0	$7,187	$0

CIP Number: 260615

Project Title: Puritan Fenkell & Leib Site Improvements

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Wayne

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Poor Drainage at Leib

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
0

Problem Statement:
There is an existing site drainage at both of these facilities creating standing water on top of basin. There is no lighting at the outfall at PF, which is needed for operation at nighttime during an event. The existing sidewalks at both of these facilities are damaged and need replacement. The perimeter fencing at PF is damaged at various spots and there is no fence at the outfall area to secure the facility from outsiders. At Leib, the existing ornamental fence at the entrance is damaged ...

Scope of Work/Project Alternatives:
The scope of work includes but not limited to creating positive drainage, installation of trench drains as well as replacement of existing side walks at both facilities. Additionally, at PF, the scope includes installation of pathway and lighting at outfall, perimeter fence replacement, etc. At Leib, the scope also includes the replacement of ornamental fence, and brick pavers, etc.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$76	$27	$27	$48	$0	$0	$0	$0	$0	$0	$0
Design/Engineering (1803809)	$47	$39	$39	$7	$0	$0	$0	$0	$0	$0	$0
Construction (1902040)	$634	$314	$314	$320	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260616

Project Title: Baby Creek Towards Treatment Sewer Improvements

Project Status: Closed
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Baby Creek
Lookup Location: Baby Creek
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Installed Bracket

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
20

Problem Statement:
The West End Sewer inside the Baby Creek CSO Effluent Channel is supported by concrete anchors and support wedges.

Scope of Work/Project Alternatives:
These supports have become dislodged or eroded and need repair and replacement with improved anchoring devices. Without repair the sewer pipe will have inadequate support and may fail. The improved anchor devices are expected to extend the life of the sewer beyond 20 years. The project seeks to refurbish pipe support anchors and wedges.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$29	$29	$29	$0	$0	$0	$0	$0	$0	$0	$0
Design-Build # 1 (1803809, 1901836)	$740	$740	$740	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260617

Project Title: St. Aubin Chemical Disinfection Improvements

Project Status: Active - Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Detroit

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Existing Screens

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
20

Problem Statement:
The St. Aubin CSO facility is nearly 20 years old. A study was conducted on the disinfection system and the screens were assessed by the manufacturer through a separate contract, and recommendations resulted in needed upgrade of these systems to restore operational control, flexibility, and reliability. The current pumping system for NaOCl is oversize (dose of 38 mg/L) when only 10 mg/l is required based on sampling study. The over-sized system makes it difficult to dial the pumps down on the...

Scope of Work/Project Alternatives:
The scope of work includes but not limited to replacement of existing chem feed pumps with better pump technology to meet the need for this facility, modification on chem feed piping system and control, installation of overhead trolley for maintenance, relining the chem storage tanks to extend the life of existing tanks, replacing evaluating different screening technologies if applicable, if not, replacing control system and hydraulic power-pack of existing screens, installing new screen flush...

Other Important Info:
Previous study was performed by Hazen and Sawyer. AECOM/DLZ is working to provide a study BOD and 20% Design documents.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$736	$367	$367	$73	$73	$74	$73	$74	$295
Study & Design & Construction Assistance # 1	$941	$49	$49	$190	$200	$113	$192	$193	$700
Construction (Build) # 1	$4,778	$0	$0	$0	$0	$1,737	$1,658	$1,382	$4,778

CIP Number: 260618

Project Title: Oakwood HVAC Project

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Oakwood CSO Facility
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Coroded building crane from failed HVAC system

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
20

Problem Statement:
Heavy corrosion and the gas detection system in the sanitary pump room is constantly going off causing operators to leave the overhead door open to keep the space ventilated and safe to enter. As a result of this, the door is left open nearly year round. HVAC system pulls gases from the sewer as currently operated. The wet-well supply fans have failed functionally and this is also resulting in heavy corrosion in the sanitary pump room.

Scope of Work/Project Alternatives:
The Odor Control unit intake will be reconfigured, various supply and exhaust fans will be replaced, access for the odor control units will be made for all three units to facilitate proper maintenance. The crane and building structural steel will be assessed and re-coated to ensure proper life.

Other Important Info:
This project design is under way by Hazen.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
GLWA Salaries	$383	$141	$141	$134	$107	$107
Study & Design & Construction Assistance # 1	$457	$229	$229	$222	$6	$6
Construction (Build) # 1	$5,249	$0	$0	$4,865	$384	$384

CIP Number: 260619

Project Title: Control System Upgrade - St Aubin, Lieb & Mile

Project Status: Active - Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: Seven Mile, Leib and St. Aubin Screening and Disinfection Facilities
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Lieb CSO, PLC Panel

Project Engineer/Manager: Chris Wilson

Director: Chris Nastally

Project Score
0

Problem Statement:
This project is being established to facilitate the design build improvements necessary to maintain the facilities which contribute to the CSO Control Program and compliance herewith.

Scope of Work/Project Alternatives:
The project will replace the Obsolete/End of Life Allen Bradley PLC5 control systems at 3 CSO Facilities (Leib, St. Aubin, 7-Mile) and upgrade critical Instrumentation. New Controllers, HMI, network components and controls system integration. Implementation of high-performance graphics and advance alarm management and advanced process control.

Other Important Info:
The intent of this project is to perform field investigation, replace, design, demo, furnish, install and start-up a complete Control system, networks, replacement of all field devices at the above facilities that are outlined within the project contract documents.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$81	$62	$62	$5	$5	$5	$3	$0	$14
Study & Design & Construction Assistance	$7,553	$0	$0	$2,111	$2,111	$2,116	$1,213	$0	$5,441

CIP Number: 260620

Project Title: Baby Creek Roof Replacement

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Baby Creek
Lookup Location: Baby Creek
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Improper shingle installation.

Project Engineer/Manager: Matthew Krieger

Director: Navid Mehram

Project Score
78.8

Problem Statement:
The Baby Creek roof leaks on electrical equipment when it rains. The laps in the shingles are sometimes as little as 2". The leaking roof over time has caused the substrate to rot and require replacement. Approximately 1/3 of the roof was previously replaced in 2017. The new portion of roof is sufficient. The remaining 2/3's of the roof is exhibiting failure per a roof inspection conducted by GLWA roofing contractor.

Scope of Work/Project Alternatives:
Replace the 2/3's of Baby Creek roof with matching asphalt shingles.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
GLWA Salaries	$1	$1	$1	$0	$0	$0
TBD / Future Allocation / General Holding	$1,045	$24	$24	$1,021	$0	$0

CIP Number: 260621

Project Title: Conner Creek Dike Improvements

Project Status: Project Execution - Construction
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Conner Creek
Lookup Location: Conner Creek
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Photo of the berm leaking into Clairpointe

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
95.2

Problem Statement:
The Conner Creek berm was constructed as a part of the facilities construction in the early 2000's and was to serve as a landscaping element between Clairpointe Street and the Conner Creek Canal. When the facility was constructed the Great Lakes were at historic low levels and therefore it was never envisioned that this berm would be required to hold back the Detroit River (acting as a dike). Due to historically high Great Lakes levels, the now dike is exhibiting signs of seepage/failure and ...

Scope of Work/Project Alternatives:
The work consists of removal of existing trees/vegetation from the berm, installing a sheet pile cutoff wall with a concrete cap, fencing, landscape restoration, and minor security improvements.

Other Important Info:
This project is funded through the GLWA TOES Contract with Wade Trim under Task 7T.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
GLWA Salaries	$8	$6	$6	$1	$0	$0
Design/Engineering (1900318 TOES)	$664	$277	$277	$386	$0	$0
Construction	$1,869	$0	$0	$1,869	$0	$0

CIP Number: 260622

Project Title: CSO Emergency Generator Improvements

Project Status: Active - Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
77.5

Problem Statement:
The reliability of the CSO standby generators and automatic transfer switches is beginning to decline. During utility power outages when the standby generators are necessary, either the generators may not start automatically, or the automatic transfer switches may not transfer. Neither the generator control panels, nor automatic transfer switches report any status or alarm signals to the operators through the SCADA Ovation Control system. In many cases, CSO Facilities have ATS equipment which ...

Scope of Work/Project Alternatives:
Under this project, the CSO facilities with standby generator systems will be upgraded to have a standardized, dedicated automatic transfer control system. This will include upgrades to the automatic transfer switches, upgrades to select generator control panels, and the addition of several alarm and status signals from both the generator control panels and the automatic transfer switch controllers, which will be monitored by the Ovation Control system.
General Project Objectives are:
1. Re...

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	5 Year Total
GLWA Salaries	$1	$0	$0	$0	$0	$0	$0
Design/Engineering	$59	$0	$0	$39	$20	$0	$20
Construction	$1,999	$0	$0	$0	$1,199	$799	$1,999

CIP Number: 260623

Project Title: CSO Baby Creek Screen Rehabilitation

Project Status: Active - Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Baby Creek
Lookup Location: Dearborn
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brooke Ballard

Director: Chris Nastally

Project Score
93.2

Problem Statement:
Based on the condition assessment conducted as a part of CS-299, the screens require rehabilitation to ensure long term viability.

Scope of Work/Project Alternatives:
The rehabilitation of Baby Creek Screens includes replacing/ repairing necessary parts to ensure system reliability and maintainability.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

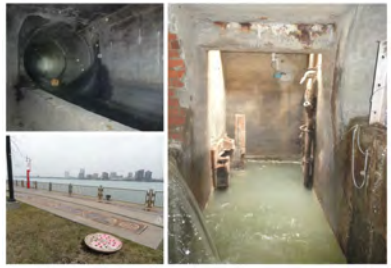
Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$19	$0	$0	$19	$0	$0	$0	$0
Construction	$2,155	$0	$0	$0	$1,077	$1,077	$0	$2,155

CIP Number: 260700

Project Title: Sewer System Infrastructure Improvements and Pumping Stations

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: Interceptor
Lookup Location: CSO Outfalls
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Infrastructure

Project Engineer/Manager: Mini Panicker

Director: Todd King

Project Score
0

Problem Statement:
VR-Gates, ISDs, and backwater gates are operational elements in the collection system that help in minimizing the untreated overflows and maximizing the flows to the WRRF and CSO control facilities. They have reached their life expectancy and need rehabilitation. Need to evaluate and install Backwater gates at the DRI Outfalls that currently do not have backwater gates to prevent river inflow into the collection system.

Scope of Work/Project Alternatives:
Evaluate the existing conditions of the VR-Gates, ISDs, Backwater Gates and Access Hatches, provide the necessary design, construction, and the Construction Assistance for their installation/replacement/rehabilitation.

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

Project History: GLWA interceptors and sewers were constructed in the early 1900s. The hatches and access covers secure operations and maintenance access points throughout the system for items such as the backwater gates, ISD, and VR. The backwater gates, ISD, and VR are all critical elements that control and divert flows throughout the system. Most of them have reached their life expectancy an...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

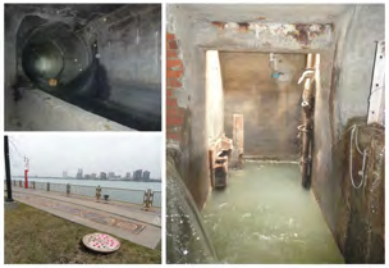
Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
Capital Delivery Salary (was 222004)	$526	$0	$0	$75	$75	$75	$75	$75	$75	$375	$75
(1803709) (was 222004)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TBD/Unallocated	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 260701

Project Title: Conveyance System Infrastructure Improvements

Project Status: Active - Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: Interceptor
Lookup Location: City of Detroit, Southfield, and others
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Infrastructure

Project Engineer/Manager: Mini Panicker

Director: Todd King

Project Score
60.1

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

Scope of Work/Project Alternatives:
Assess the structure and functionality of the VR-Gates, ISDs, Regulators, Backwater Gates, and Access Hatches and provide the necessary Design, Construction, and Construction Assistance for their replacement/rehabilitation.

Other Important Info:
Rehabilitation will be in 3 different phases. Phase 1 will be the rehabilitation of the mechanical, structural and electrical equipment at 59 combined sewage outfall (CSO) sites. Majority of the work involves the replacement of timber backwater gates, modifications to the regulator opening and replacement of the regulator gates, and replacement of all instrumentation equipment.
Phase 2 will be the rehabilitation of 14 ISDs and 2 DR facilities. These facilities are intended to store and rele...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
Capital Delivery Salary (was 222004)	$21	$16	$16	$1	$1	$1	$1	$0	$3
(1803709) (was 222004)	$7,140	$1,367	$1,367	$5,772	$0	$0	$0	$0	$0
Construction	$7,000	$0	$0	$0	$15,637	$17,039	$11,792	$3,999	$48,469

CIP Number: 260702

Project Title: Pump Station Assets Updates

Project Status: Active - Pre-Procurement - Construction
Class Lvl 1: Wastewater
Class Lvl 2: Field Services
Class Lvl 3: General Purpose
Lookup Location:
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☑ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
59.6

Problem Statement:
Evaluation and upgrade of the Pumping Station elements are needed to improve the transportation of the wastewater to the WRRF.

Scope of Work/Project Alternatives:
On an as needed basis evaluate/upgrade/replace the Sewer Pump Station elements to keep up the collection system transport capacity.

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0
Construction (was 222004)	$2,000	$0	$0	$665	$667	$667	$0	$2,000

CIP Number: 260800

Project Title: WRRF ROOF REPLACEMENT FOR MULTIPLE FACILITIES PROGRAM

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Complex I

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
0

Problem Statement:
Some of the roofs at GLWA WRRF facilities are near their end of useful life. The roofs help to protect the expensive equipment by preventing rainwater entering through roofs into the facilities.

Scope of Work/Project Alternatives:
Inspect the roofing system conditions and assess drainage conditions on all the GLWA wastewater related facility buildings. Document the roofing systems inspections by taking and submitting high-quality photographs, scaled drawings, sketches, and inspection notes to adequately describe the conditions and deficiencies of the roofing systems and their drainage facilities. Recommend the extent of the roofing repairs and replacements required. Document the roof for each building inspected on the pr...

Other Important Info:
Challenges: Roof material testing for asbestos before demolition and flashing will be challenging to manage as low levels of asbestos are very common in the GLWA's old roof type systems.

Project History: Majority of GLWA WRRF facilities have Built-Up-Roof (BUR) membranes systems commonly referred to as "tar and gravel" roofs. The old Administration building, and the Newer Administration building have tar and gravel type of roof systems. The CSO RTB's and SDF's have metal and shingle type roo...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$600	$0	$0	$0	$199	$200	$200	$0	$600
Construction	$4,400	$0	$0	$0	$1,691	$1,690	$1,017	$0	$4,400

CIP Number: 260900

Project Title: WRRF Facility Optimization Program

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Administration Building

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
0

Problem Statement:
The existing WRRF is a product of countless construction projects over nearly 90 years and consists of numerous process and other buildings with varying levels of use and practicality. As WRRF across the nation come out of the shadows and into the light of the public and elected officials it is critical to convey an image that reflects the pride and importance of the work that is done every day at this facility. As such, this project will work on the softer side of the facility, create a visito...

Scope of Work/Project Alternatives:
The work consists of extending the evaluation performed as a part of Master Planning to design and construct site modifications including but not limited to a new visitor center, demolition or repurposing of existing structures that are no longer used, consolidation and or reconfiguration of administration, operations and maintenance staff and spaces, vehicle and equipment storage spaces, shops, etc. The project also includes site modifications to include improved site circulation, parking and ...

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0
Design/Engineering	$0	$0	$0	$0	$0
Construction	$428	$0	$0	$428	$428

CIP Number: 260901

Project Title: Rehabilitation of HAZMAT Facility at WRRF

Project Status: Active - Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
52.1

Problem Statement:

The HAZMAT Security Specialists at the Water Resource Recovery Facility (WRRF) provide rapid response for the GLWA operations, including site security and any emergency response relating to actual or potential leaks or spills of hazardous substances. There are approximately 3-4 specialists occupying the existing HAZMAT building daily, with a maximum of 5-6 specialists at certain times. The HAZMAT facility, which is located on the opposite side of Jefferson Road from the WRRF, is a single story,...

Scope of Work/Project Alternatives:

Rehabilitation of the HAZMAT facilities at the WRRF. The scope of work will renovate the existing HAZMAT building to right size the facility to provide the following:
•accommodate the GLWA HAZMAT team.
•accommodate the parking of one (1) pick-up truck type vehicle, two (2) response vehicles and a response trailer with the bay doors facing the access road.
•demolish and construct new officer booth to accommodate one officer/guard

Other Important Info:

N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	5 Year Total
GLWA Salaries	$5	$5	$5	$0	$0	$0	$0	$0	$0
Design/Engineering	$204	$125	$125	$0	$78	$0	$0	$0	$78
Construction	$1,195	$0	$0	$0	$1,195	$0	$0	$0	$1,195

CIP Number: 260902

Project Title: WRRF 4th Floor Renovation

Project Status: Active - Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


New Administration Building

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
59.5

Problem Statement:
: GLWA has recently renovated the WRRF 2nd floor Design Engineering area, 4th floor CIP/Asset Management area, and 2nd floor IWC area. Currently GLWA is renovating the 2nd floor Lab area so that Analytical lab team can relocate to WRRF. The Wastewater Master Plan 'non-process space programming task' for WRRF provided an overview of space needs, both current and future, to provide GLWA with the knowledge of space needs and a "roadmap" for building improvements utilizing holistic planning princi...

Scope of Work/Project Alternatives:
GLWA plans to renovate a significant portion of the existing fourth floor of the New Administration Building, in order to house Engineering Design & CSO, Construction Engineering, and Local Asset Management groups in the space. The area of renovation is approximately 15,980 gross square feet and will be a combination of enclosed perimeter offices and conference rooms, coupled with furniture cubicles, collaboration space, and a break area.

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
Design/Engineering	$61	$49	$49	$0	$12	$12
Construction	$2,658	$0	$0	$0	$2,658	$2,658

CIP Number: 260903

Project Title: WRRF Front Entrance Rehabilitation

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: General Purpose
Lookup Location: WRRF
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


WRRF Front Entrance

Project Engineer/Manager: Chris Wilson

Director: Dan Alford

Project Score
52.4

Problem Statement:
The Great Lakes Water Authority's (GLWA) Water Resource Recovery Facility (WRRF) is the largest single?site wastewater treatment facility in the United States with nearly five hundred individuals that report to the facility including team members, visitors, and contractors. The main entry point to the facility is the entrance from Jefferson closes to the Rouge River bridge. This entrance handles majority of the traffic entering the plant. Team members and Contractors with badge access can go t...

Scope of Work/Project Alternatives:
The project will re-design the Front Entrance at WRRF to accommodate the traffic flow at the entrance, provide visitor parking prior to the automated barrier gate arm, improvement to the turnstiles and the Guard House. The re-design of the entrance may require relocation of existing infrastructure to provide the best workflow for the entrance to the WRRF. The scope of work will include the following:
•Re-design the parking and traffic flow at the front entrance
?Minimize the pedestrian-ve...

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	5 Year Total
GLWA Salaries	$0	$0	$0	$0	$0	$0
Design/Engineering	$0	$0	$0	$0	$0	$0
Construction	$1,004	$0	$0	$0	$1,004	$1,004

CIP Number: 261000

Project Title: WRRF Rehabilitation of the Secondary Clarifiers

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Wilson

Director: Chris Nastally

Project Score
0

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

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY28-32
GLWA Salaries	$337	$0	$0	$73
Design/Engineering	$1,666	$0	$0	$362
Construction	$44,823	$0	$0	$9,845

CIP Number: 261001

Project Title: WRRF Rehabilitation of the Secondary Clarifiers Phase 1

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: WRRF
Class Lvl 3: Secondary Treatment and Disinfection
Lookup Location: WRRF

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Chris Wilson

Director: Chris Nastally

Project Score
72

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

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

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

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

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

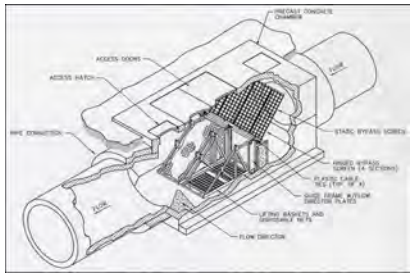
Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total
GLWA Salaries	$58	$0	$0	$14	$14	$14	$14	$58
Design/Engineering	$2,002	$0	$0	$774	$774	$380	$72	$2,002
Construction	$1,969	$0	$0	$0	$0	$0	$1,969	$1,969

CIP Number: 270001

Project Title: Pilot CSO Netting Facility

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Detroit River - East Side Downtown east of Ralph C. Wilson Park.
☐ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**



Netting Facility

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
89.6

Problem Statement:
The First Street CSO Outfall (B-023) has been identified in the NPDES Permit for the Priority Non-Core Compliance schedule. It is also the nearest and most frequently discharging outfall upstream of the proposed Ralph C Wilson waterfront park on the Detroit River. A pilot facility to demonstrate the application of CSO outfall nets is proposed at this location to keep the sanitary trash from discharging close to this beach, and also to help minimize impacts from fecal coliform bacteria contai...

Scope of Work/Project Alternatives:
Inspect the two 10-ft by 10-foot box culverts that comprise this outfall and establish a location for installing the CSO nets, considering outfall structural condition, ease of access for net removal and replacement, and maintenance vehicle parking. Construct in-line netting facility under Convention Center Drive to the west of Cobo Convention Center. Construct access point for future Total Chlorine Residual monitoring to be installed in a second phase of this project. Provide electrical and ...

Other Important Info:
GLWA staff conducted a field inspection in 2019 of CSO outfall netting facilities constructed in Cleveland in 2004. There are different types of CSO net installations, and GLWA believes that in-line nets provide for the most efficient operation and maintenance.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$323	$0	$0	$0	$0	$49	$49	$49	$49	$198	$124
Study & Design & Construction Assistance # 1	$1,651	$0	$0	$0	$0	$295	$295	$298	$61	$951	$700
Construction (Build) # 1	$4,224	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,224

CIP Number: 270002

Project Title: Meldrum Sewer Diversion and VR-15 Improvements

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Sewers and Interceptors
☐ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Mini Panicker

Director: Biren Saparia

Project Score
88.7

Problem Statement:
The Meldrum Sewer is an uncontrolled CSO that discharges through outfall B-07. Currently, this is an untreated CSO discharge. Untreated CSO discahrges let debris from the sewer and bacteria make their way into fresh water bodies and are not good for public health or the environment. The NPDES permit requires control of this outfall to Michigan water quality standards. The Leib Screening and Disinfection Facility was designed with capacity to screen and disinfect the Meldrum Sewer CSO flow...

Scope of Work/Project Alternatives:
The scope of work involves connecting the Meldrum sewer to the Conant-Mt. Elliot Sewer with a diversion pipe that is 5 feet in diameter. New gates would be installed in the Meldrum sewer which direct flow through this diversion and into the Conant-Mt. Elliot sewer, which would then be processed through the Leib Screening and Disinfection Facility. These gates would allow dry weather flow to take it's normal route through the Meldrum sewer to the DRI, and would divert wet-weather to Leib SDF. ...

Other Important Info:
Recommended in DWSD LTCSO Plan of 2008.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$339	$0	$0	$0	$0	$0	$56	$56	$56	$169	$170
Design & Construction Assistance # 1	$1,046	$0	$0	$0	$0	$0	$167	$379	$71	$618	$428
Construction (Build) # 1	$4,453	$0	$0	$0	$0	$0	$0	$0	$1,290	$1,290	$3,162

CIP Number: 270003

Project Title: Long Term CSO Control Plan

Project Status: Project Execution - Design
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: City of Detroit

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Sherri Gee

Director: Suzanne Coffey

Project Score
88

Problem Statement:

The NPDES permit which governs CSO Discharges for GLWA requires GLWA to provide for prohibition, elimination, or adequate treatment of combined sewer discharges containing raw sewage. The current plans of 2008 and 2010 were approved by the EGLE (formerly MDEQ) and are the current plans of record. The new NPDES permit issued in July of 2019 opened the door for GLWA to refresh the Long Term Plan and submit to EGLE for review and approval by 11/15/2022. There are 56 total untreated outfalls ope...

Scope of Work/Project Alternatives:

This project will be a predecessor project to executing a long term CSO control plan, as required by the NPDES permit. This project will include evaluation of the requirements and work done under the 2008 and 2010 current plans of record, evaluation of elements within the Wastewater Masterplan aimed at CSO Control, evaluation of affordability, evaluation and siting of specific projects to be executed, and evaluation and programming of recommended projects to address affordability. The RFP for...

Other Important Info:

The wastewater masterplan, currently in draft format, has identified in it elements that are a part of the Long Term Plan, including a new storage conduit on the west-side for first flush capture, in-system storage dams, system diversions, and some netting facilities locations strategically selected. These will need to be evaluated and further fleshed out under this project and also evaluated against current system requirements, and former Long Term requirements and plans set forth in 2008 and...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	$7,700	$2,129	$2,129	$3,105	$2,462	$1	$1	$2,465
Design & Construction Assistance	$548	$0	$0	$56	$56	$283	$151	$491

CIP Number: 270004

Project Title: Oakwood and Leib CSO Facilities Improvement Project

Project Status: Active - Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Oakwood/Leib

☐ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**


Oakwood / Leib Cover photo

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
79.4

Problem Statement:
The Leib CSO Facility has been under utilized for the last 20 years. The WWMP is recommending a diversion to the facility which will increase utilization and close an untreated CSO outfall. To be prepared for this increased utilization, improvements to the facility are required. The chemical system is functionally failed and the screening system presents operational and maintenance difficulties (pilot facility with different types of screens requiring different maintenance and having differe...

Scope of Work/Project Alternatives:
To be ready for the Meldrum Diversion project, the following will be improved. Replacement of fine screens, replacement of the chemical feed system, improved automation for chemical dosing, improved access and maintenance of equipment, miscelaneous electrical/hvac and I&C improvements, a new site access drive to improve safety, as well as various safety improvements to facility hatches. The scope of work is currently being refined under CS-299 (CSO Facilities Assessment Project). At this time...

Other Important Info:
This is a predecessor project to the Meldrum diversion project and ideally should be constructed prior to completion of the Meldrum Diversion to allow use of that and testing of equipment installed as a part of that project. This project is intended to be completed plus/minus 12 months from the completion of the NWI diversion project. Given anticipated difficulties of that project, it is likely that this project will be completed much earlier than the NWI diversion. Ideally this project is to...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$4	$3	$3	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$4,999	$0	$0	$0	$1,249	$1,299	$1,249	$330	$350	$4,479	$520
Construction	$11,999	$0	$0	$0	$0	$0	$0	$3,299	$3,499	$6,799	$5,199

CIP Number: 270005

Project Title: CSO Facility Safety Improvements and Building Rehabilitation

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brooke Ballard

Director: Navid Mehram

Project Score
69

Problem Statement:
A safety inspection of GLWA's nine CSO facilities was conducted under CS-299. A list of safety-related issues observed and suggested corrective actions was generated. Most of the issues that require capital improvements are related to the lack of proper fall protection around the numerous hatch openings at each facility. An assessment of building-related issues was also conducted under CS-299. Building-related issues include damaged sealant around doors, windows, other wall penetrations, contro...

Scope of Work/Project Alternatives:
This project provides proper fall protection and address fall/trip hazards for all the nine CSO facilities with the addition of fall protection features such as temporary railings, nets, chains, portable davit, ladders with retractable safety posts, etc. This project also addresses the various building/architectural issues with doors, windows, room finishes, floors and ceiling coating systems, stairways, and corrosion of visible steel members for all nine CSO facilities. The goal of this rehab...

Other Important Info:
The building rehabilitation work is bring combined with the safety issues because of the similarity of the design discipline and the similar type of contractor necessary for this job.

Primary Driver: Public Health and Safety

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$1,296	$0	$0	$122	$355	$300	$130	$220	$1,127	$168
Construction	$5,185	$0	$0	$0	$0	$0	$1,300	$2,200	$3,500	$1,685

CIP Number: 270006

Project Title: Control System Upgrades at Baby Creek and Belle Isle CSO Facilities

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
61

Problem Statement:
There is a need to update the Ovation control system to the latest version and increase monitoring capabilities at Baby Creek and Belle Isle CSO Facilities. The lighting at these facilities is poor and non-existent in some locations, which makes for unsafe working conditions for the staff. At Baby Creek, there is a need for additional flow meters, level sensors, process cameras, and local control for the screens. At Belle Isle, there is a need to have the ability to control this facility from t...

Scope of Work/Project Alternatives:
This project addresses O&M and safety issues at Baby Creek and Belle Isle to make them more reliable. This project updates the Ovation control system to the latest version which will enhance the overall performance of these facilities. Additional lighting will be provided at selected locations at both the facilities to improve worker safety. At Baby Creek, redundant level sensors will be removed and additional flow meters, level sensors, process cameras and local control for the screens will be...

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$502	$0	$0	$93	$134	$134	$45	$45	$451	$51
Construction	$1,413	$0	$0	$0	$0	$0	$450	$450	$900	$513

CIP Number: 270007

Project Title: Disinfection System Improvements at Baby Creek, Belle Isle, Conner Creek, and Puritan Fenkell CSO Facilities

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Wayne
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
57

Problem Statement:
The chemical feed pumps and systems at these facilities are expensive to maintain and there is a lack of automation of the feed system. Furthermore, each facility has a different type of chemical pump, making O&M more difficult and site specific.
At Baby Creek, the floor in the Chemical Room is flat and the coating has been consumed by sodium hypochlorite spills.

Scope of Work/Project Alternatives:
This project replaces the chemical feed systems at each facility with standardized and automated feed systems. Other improvements include providing a sloped floor with corrosion resistant coating in the Baby Creek Chemical Room and installation of a ladder and railing system to access the top of the carbon vessel of the Belle Isle odor control system for carbon replacement.

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$4,323	$0	$0	$335	$1,507	$1,507	$3,350	$973
Construction	$3,893	$0	$0	$0	$0	$0	$0	$3,893

CIP Number: 270008

Project Title: Flushing System Improvements at Conner Creek and St. Aubin CSO Facilities

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
74.4

Problem Statement:
At Conner Creek, a significant amount of solids accumulate in the influent area just upstream of the bar screens. The original flushing system was ineffective and is non-functional. Currently, GLWA staff use a bobcat to fill a small dumpster to remove some of the solids and need to rely on fire hoses to remove the rest - both of which are labor intensive, costly, and have safety-related concerns.

Also at Conner Creek, the flushing reservoirs in the basin require the use of potable water (...

Scope of Work/Project Alternatives:
This project provides improvements in the influent area of Conner Creek to allow for more efficient removal of accumulated solids and to make the entire influent area more accessible for bobcat maneuverability throughout the entire influent area.

This project also provides for river water as a source of flushing water in the basin, which will provide water savings and will significantly reduce the time to fill the reservoirs.

At St. Aubin, the project includes a new effluent conduit f...

Other Important Info:
The Conner Creek flushing work is being combined with St. Aubin because of the similarity of the design and type of contractor necessary for this job.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$1,401	$0	$0	$0	$150	$268	$284	$703	$697
Construction	$5,605	$0	$0	$0	$0	$0	$0	$0	$5,605

CIP Number: 270009

Project Title: Site Improvements at St. Aubin, Belle Isle, and Baby Creek CSO Facilities

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Wayne
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
54.6

Problem Statement:
A number of site-related improvements were identified at St. Aubin, Belle Isle and Baby Creek CSO Facilities under CS-299. At the St. Aubin outfall site issues include: 1) poor drainage in the access drive area between Atwater St. and the fenced area; 2) fencing in disrepair; 3) difficulty in removing hatch plates; and 4) limited access to the backwater gates. The poor drainage of the access drive has damaged the road surface and has created issues with accessibility to the secured area. In add...

Scope of Work/Project Alternatives:
This project includes site improvements at the three CSO facilities. At St. Aubin, various site improvements will be made to address the problems noted above. At Belle Isle, the concrete pavement will be extended to provide an adequate turning radius for the chemical delivery trucks, and other site improvements will be made to address drainage issues. At Baby Creek, a new stop log storage shelter will be constructed to provide protection from UV light for the stop log seals.

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0
Design/Engineering	$275	$0	$0	$36	$36	$235
Construction	$1,102	$0	$0	$0	$0	$1,072

CIP Number: 270010

Project Title: HVAC Improvements at Puritan Fenkell and Seven Mile CSO Facilities

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brooke Ballard

Director: Chris Nastally

Project Score
57.8

Problem Statement:
A number of HVAC-related improvements were identified at Puritan-Fenkell and Seven Mile CSO Facilities under CS-299. The improvements at both facilities require replacement of a large number of HVAC equipment, due to age of the equipment or improving access for maintenance, and the additional need to provide monitoring for code compliance in the Odor Control and Headworks area.

Scope of Work/Project Alternatives:
This project includes replacement of HVAC equipment including PACU-1, HVU-1, HVU-2, HVU -3, SF-1, SF-2, and exhaust fans at both Puritan-Fenkell and Seven Mile CSO Facilities. Also, the project includes improvements to enhance safety in Odor Control and Headworks areas at both the facilities to comply with NFPA 820. This project also includes removal of HVAC equipment from the shunt channel and effluent channel since they are not used and are inoperable.

Other Important Info:
NA

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$301	$0	$0	$40	$70	$70	$26	$207	$93
Construction	$1,206	$0	$0	$0	$0	$0	$268	$268	$938

CIP Number: 270011

Project Title: HVAC Improvements at Conner Creek and Belle Isle CSO Facilities

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Detroit
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
70.5

Problem Statement:
A number of HVAC-related improvements were identified at Conner Creek and Belle Isle CSO Facilities under CS-299 Facilities Assessment. Most of the improvements are related to ventilation improvements, access to HVAC equipment improvements, and heating/cooling improvements.

Scope of Work/Project Alternatives:
The project includes improvements to enhance safety in the Odor Control area at Belle Isle to comply with NFPA 820, as well as improvements to access HVAC equipment in the Chemical Room and Odor Control Area. Other improvements at Belle Isle include the replacement of the unit heaters and improvements to the cooling for the Control Room and Sample Room. At Conner Creek, the project includes improvements to the heating for Maintenance Shop, Electrical Room, and Control Room; improvements to acce...

Other Important Info:
None

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY28-32
GLWA Salaries	$0	$0	$0	$0
Design/Engineering	$76	$0	$0	$46
Construction	$306	$0	$0	$0

CIP Number: 270012

Project Title: Control System Upgrades at Conner Creek, Oakwood, and Puritan Fenkell CSO Facilities

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
59

Problem Statement:
At the time of this proposed project, there will be a need to update the existing control system to the latest version of Ovation in order to standardize equipment and increase monitoring capabilities at Conner Creek, Oakwood, and Puritan-Fenkell CSO Facilities. In addition, lighting at these facilities is poor and non-existent in some locations, which makes for unsafe working conditions for the staff. There is a need for additional flow meters, level sensors, and process cameras at these facil...

Scope of Work/Project Alternatives:
This project addresses control system and I&C issues at Conner Creek, Oakwood, and Puritan-Fenkell to make them more reliable. This project updates the Ovation control system to the latest version, which will enhance the overall performance of these facilities. Additional lighting will be provided at selected locations at these facilities to improve worker safety. At Conner Creek, redundant level sensors will be removed, new flow meter for dewatering flow downstream of the junction chamber will...

Other Important Info:

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$1,184	$0	$0	$0	$147	$147	$1,012
Construction	$4,736	$0	$0	$0	$0	$0	$4,489

CIP Number: 270013

Project Title: Facility Improvements at Puritan Fenkell and Seven Mile CSO Facilities

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
56.8

Problem Statement:
At Puritan Fenkell and Seven Mile, there are various issues that need to be addressed based on the CS-299 Facilities Assessment. There is poor accessibility to the bearing assemblies of the basin's tipping buckets and to the dewatering forcemain for inspection and cleaning. In addition, there are drainage issues at both facilities, which become a safety concern for personnel accessing the buildings during the winter months when the water freezes. At Puritan Fenkell, there is no way to isolate t...

Scope of Work/Project Alternatives:
This project provides surface access to the tipping buckets and dewatering forcemains to ease O&M at both the facilities. Similarly, the project will improve the drainage of water at the two facilities. At Puritan Fenkell, isolation of the wet weather and dry weather wet wells will be provided. Also at Puritan Fenkell, a stop log removal system will be provided. At Seven Mile, the hatch cover plates will be replaced with lighter-weight hatches. The effluent stop log and effluent hatch replaceme...

Other Important Info:
The effluent stop log and effluent hatch replacement would not be needed if these two basins are converted to complete capture basins.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0
Design/Engineering	$178	$0	$0	$0	$0	$174
Construction	$715	$0	$0	$0	$0	$670

CIP Number: 270014

Project Title: Conversion to Complete Capture Basin at Puritan Fenkell and Seven Mile CSO Facilities

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Multiple CSO Facilities
Lookup Location: Various CSO Facilities
☑ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brooke Ballard

Director: Chris Nastally

Project Score
72

Problem Statement:
The Wastewater Master Plan identified that Puritan Fenkell and Seven Mile can be operated in complete capture mode for flows up to the 10-year 1-hour design storm. These facilities have not experienced the originally anticipated level of flows and, in fact, the facilities had no discharge for 3 years from 2016 to 2018 and only a few discharges from Puritan Fenkell in 2019 and 2020.

Scope of Work/Project Alternatives:
This project includes modifying Puritan-Fenkell and Seven Mile Facilities to a capture-only facilities.

Other Important Info:
NA

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$888	$0	$0	$0	$0	$0	$650
Construction	$3,553	$0	$0	$0	$0	$0	$1,172

CIP Number: 273001

Project Title: Hubbell Southfield CSO Facility Improvements

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Hubbell Southfield
Lookup Location: Dearborn
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Kashmira Patel

Director: Chris Nastally

Project Score
75.7

Problem Statement:
The Hubbell Southfield CSO Basin was constructed in the late 1990s and has a number of major capital improvement needs. The Hubbell Southfield spray-flushing system is ineffective for removing solids and debris from the floor of the basin and shunt channel after a storm event. Currently, operators must manually use fire hoses and lower a bobcat into the basin after storm events, which is a safety concern due to the confined space, sloped and slippery floors, and poorly lit conditions. The dewat...

Scope of Work/Project Alternatives:
A new basin flushing system is recommended in the CS-299 Facilities Assessment consisting of flushing gates and reservoirs (similar to those installed at Conner Creek, Oakwood and Belle Isle CSO Facilities). The project includes new dewatering pumps to replace existing pumps and new basin sump pumps with a solids fluidization system to fluidize accumulated grit to replace non-functional pumps. The project also includes chemical feed system improvements, including pump replacement to standardize...

Other Important Info:
None.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design/Engineering	$8,554	$0	$0	$532	$1,600	$1,600	$1,800	$321	$5,854	$2,700
Construction	$30,021	$0	$0	$0	$0	$0	$0	$3,021	$3,021	$27,000

CIP Number: 273002

Project Title: CSO Hubbell Southfield VR-8 Gate Improvements

Project Status: Future Planned - Within 5 Year Plan
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Hubbell Southfield
Lookup Location: Dearborn
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brooke Ballard

Director: Chris Nastally

Project Score
50.2

Problem Statement:
The VR-8 Regulator is located upstream of the Hubbell-Southfield CSO Facility in the center median of Michigan Avenue east of the Southfield Freeway. The regulator consists of two stainless steel slide gates that are adjusted by SCADA control to regulate flow from the Hubbell-Southfield sewer to the NWI. A rehabilitation project was designed in 2013 by Metco, but not implemented. Rehabilitation of the VR-8 Regulator is still needed.

Scope of Work/Project Alternatives:
The rehabilitation of the VR-8 Regulator includes replacement of the slide gates and actuator, and access improvements in the median near the gates and the control panel. The improvements will help maintain system reliability and functionality.

Other Important Info:
n/a

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0
Design/Engineering	$353	$0	$0	$50	$50	$293
Construction	$1,415	$0	$0	$0	$0	$1,315

CIP Number: 274001

Project Title: Leib Improvements for Meldrum Diversion

Project Status: Reclassified
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Leib
Lookup Location: Leib CSO Facility
☐ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**


Leib Screen

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
79.4

Problem Statement:
The Leib CSO Facility has been under utilized for the last 20 years. The WWMP is recommending a diversion to the facility which will increase utilization and close an untreated CSO outfall. To be prepared for this increased utilization, improvements to the facility are required. The chemical system is functionally failed and the screening system presents operational and maintenance difficulties (pilot facility with different types of screens requiring different maintenance and having differe...

Scope of Work/Project Alternatives:
To be ready for the Meldrum Diversion project, the following will be improved. Replacement of the screens, replacement of the chemical feed system, improved automation for chemical dosing, improved access and maintenance of equipment, miscelaneous electrical hvac and I&C improvements, a new site access drive to improve safety, as well as various safety improvements to facility hatches.

Other Important Info:
This is a predecessor project to the Meldrum diversion project and ideally should be constructed prior to completion of the Meldrum Diversion to allow use of that and testing of equipment installed as a part of that project.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

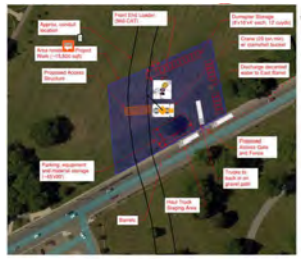
Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 277001

Project Title: Baby Creek Outfall Improvements Project

Project Status: Active - Procurement - Design
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Baby Creek
Lookup Location: Baby Creek CSO Facility
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**



Example of Proposed Facility

Project Engineer/Manager: Matthew Krieger

Director: Chris Nastally

Project Score
80.1

Problem Statement:
A facility is required to be constructed in order to ensure continued access to the Baby Creek Outfall. In addition to facility construction, system improvements which address sediment accumulation are needed to ensure the CSO can meet NPDES requirements. This system improvement will likely be a flushing system installed inside the outfall, but the best solution is not known at this time. The triple barrel Baby Creek Outfall consists of (3) 14'-6" wide by 17'-6" tall concrete box culverts which...

Scope of Work/Project Alternatives:
This project consists of a study and design. Construction is anticipated from the design, but since the flushing system solution cannot be known at this time this phase is not included in the project due to the variability in alternatives and their associated costs. The study and design will assess the proper ways to clean the pipes, facilitate future maintenace, flushing of the pipes after rain events, and perform assessments of the backwater gates and ensure proper instrumentation is instal...

Other Important Info:
The current outfall is not capable of being flushed and the solids level will build up after each rain event. Furthermore, the rising river level continues to impact this facility and the outfalls capacity. Having a build up of sludge does not favor Baby Creek in passing the necessary flows because the headloss through the pipes is small and the capacity of the pipes are reduced to to the reduction in cross-sectional area.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$2,629	$1,069	$1,069	$217	$213	$265	$265	$265	$265	$1,275	$67
Design-Build # 1	$10,657	$0	$0	$0	$1,036	$2,334	$2,334	$2,334	$2,134	$10,174	$482

CIP Number: 277002

Project Title: Baby Creek CSO Facility Influent Flushing System

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Baby Creek
Lookup Location: Baby Creek
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☑ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Brooke Ballard

Director: Chris Nastally

Project Score
72.3

Problem Statement:
A significant amount of solids can accumulate in the Baby Creek influent channel area, immediately upstream of the weir wall at the Headworks. Significant solids buildup can cause hydraulic restrictions and impede inspection of influent flow meters. There is no flushing system at this location and solids removal must be performed periodically by a contractor which is a high-risk activity, as well as costly. In addition, the S-2-1 sluice gate opening does not extend to the bottom of the influent...

Scope of Work/Project Alternatives:
This project includes evaluation and construction, if feasible, of a new flushing system in the influent area. The project will also include modifying the opening of the sluice gate S-2-1 to make the bottom of the gate opening at a lower elevation which would allow the flushed solids to enter the dewatering well.

Other Important Info:
NA

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs
GLWA Salaries	$0	$0	$0
Design/Engineering	$147	$0	$0
Construction	$590	$0	$0

CIP Number: 278001

Project Title: Oakwood Improvements for NWI Diversion

Project Status: Reclassified
Class Lvl 1: Wastewater
Class Lvl 2: CSO Facilities
Class Lvl 3: Oakwood
Lookup Location: Oakwood CSO Facility
☐ **Project New to CIP:**

☐ **Innovation**
☑ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☑ **Predecessor Project(s)**


Oakwood Aerial

Project Engineer/Manager: Chris Nastally

Director: Chris Nastally

Project Score
78.4

Problem Statement:
The Oakwood Facility Construction was completed in 2012. Over the last 8 years, the facility has been under utilized. Proposed plans for the Oakwood-Northwest diversion to Oakwood coupled with a facility assessment require improvements to ensure the facility is prepared to handle flows over those historically observed over the last 8+ years.

Scope of Work/Project Alternatives:
The scope of work is currently being refined under CS-299 (CSO Facilities Assessment Project). At this time, the following improvements will be planned for: The manual screening in the pump station will be replaced with a mechanically raked bar screen to reduce pump failures (currently the manual screens blind and build up head in the storm well until they are manually cleaned, causing issues with bearing submersion of the storm pumps when they are not in operation). The disinfection system w...

Other Important Info:
This project is intended to be completed plus/minus 12 months from the completion of the NWI diversion project. Given anticipated difficulties of that project, it is likely that this project will be completed much earlier than the NWI diversion. Ideally this project is to be completed before the NWI diversion to allow for proper testing/etc. needed when the NWI diversion is completed.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Design & Construction Assistance # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction # 1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

7 CENTRALIZED SERVICES

7 ONE- PAGERS

2 ACTIVE PROJECTS
1 FUTURE PLANNED
2 PENDING CLOSEOUT
1 RECLASSIFIED
1 CANCELLED

CENTRALIZED SERVICES

PROJECTS ARE FUNDED BY THE WATER OR THE WASTEWATER SPEND PLANS, OR IN THE PAST COULD BE SPLIT BETWEEN THE TWO.

FOR MORE: APPENDIX C

FIND THE FULL BUSINESS CASE EVALUATIONS FOR CENTRALIZED SERVICES PROJECTS IN APPENDIX C.

CIP Number: 331003

Project Title: Masonry Replacement and Rehabilitation

Project Status: Reclassified
Class Lvl 1: Centralized Services
Class Lvl 2: General Purpose
Class Lvl 3: General Purpose
Lookup Location: Multiple Counties
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Northeast Facility

Project Engineer/Manager: Douglas Atkinson

Director: Paula Anderson

Project Score
0

Problem Statement:
Cracks and deterioration in masonry walls,exterior concrete, retaining walls, concrete decks and floors needing repair or replacement causing concern for safety due to poor conditions.

Scope of Work/Project Alternatives
For NE WTP: Assess, solve the movement and moisture penetration problem, rebuild portions of masonry and concrete walls, floors, roof parapets and deck elements.
For SW WTP: Assess the panels and support structure, replace panels, repair/restore rusted steel members.
For Imlay City: Remove or rebuild retaining walls to withstand soils pressure.

Other Important Info:
3 sites have been identified for this project all have some failing concrete.
1)Northeast WTP
2)Southwest WTP
3) Imlay City Pumping Station

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
TBD / Future Allocation / General Holding	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 341001

Project Title: Security Infrastructure Improvements on Water Facilities

Project Status: Pending Closeout
Class Lvl 1: Centralized Services
Class Lvl 2: Security
Class Lvl 3: General Purpose
Lookup Location: System Wide

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Project Photo

Project Engineer/Manager: Charnele Sanders

Director: W. Barnett Jones

Project Score
0

Problem Statement:
GLWA facilities have been designated as "Critical Infrastructure" by the United States Department of Homeland Security (OHS). Critical Infrastructure is under constant threat by malicious people intent on disruption and destruction. GLWA staff is engag.ed in a continual process of threat and vulnerability assessment to our facilities, operations, and staff. Using several assessment tools including, OHS Site Assessments, incorporating AWWA security recommendations, and utilizing GLWA's historic...

Scope of Work/Project Alternatives:
Water Works Park: Additional coverage where boats dock and by the screening house. Video assessment wherever there are alarm points. Primary Building needs to be secured. Need video coverage. Switchgear room needs to be secured. Exterior video coverage of oxygen tanks and entrance lo chlorine room. Secure transformer enclosures -Raw water Booster Station. Interior intrusion detection devices need to be installed at high lift building- glass break, motion sensors, etc. Install Card reade...

Other Important Info:
GLWA has a responsibility in the layered approach to critical infrastructure security; partnering with Federal, State, and Local law enforcement entities to minimize and respond to threats. This partnership required GLWA to maintain a minimum security posture equating to the Critical Infrastructure designation. Implementation of the security protocols were none existent, and improving the GLWA security foot print can reduce our vulnerabilities and enhance our response to known threats.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$774	$714	$714	$60	$0	$0	$0	$0	$0	$0	$0
Design-Build # 1 (SOQ-135A)	$9,545	$9,545	$9,545	$0	$0	$0	$0	$0	$0	$0	$0
Miscellaneous	($6,080)	($6,080)	($6,080)	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 341002

Project Title: Security Infrastructure Improvements for Wastewater Facilities

Project Status: Pending Closeout
Class Lvl 1: Centralized Services
Class Lvl 2: Security
Class Lvl 3: General Purpose
Lookup Location: System Wide

☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


Project Photo

Project Engineer/Manager: Charnele Sanders

Director: W. Barnett Jones

Project Score
0

Problem Statement:
GLWA facilities have been designated as "Critical Infrastructure" by the United States Department of Homeland Security (OHS). Critical Infrastructure is under constant threat by malicious people intent on disruption and destruction. GLWA staff is engag.ed in a continual process of threat and vulnerability assessment to our facilities, operations, and staff. Using several assessment tools including, OHS Site Assessments, incorporating AWWA security recommendations, and utilizing GLWA's historic...

Scope of Work/Project Alternatives:
Water Works Park: Additional coverage where boats dock and by the screening house. Video assessment wherever there are alarm points. Primary Building needs to be secured. Need video coverage. Switchgear room needs to be secured. Exterior video coverage of oxygen tanks and entrance lo chlorine room. Secure transformer enclosures -Raw water Booster Station. Interior intrusion detection devices need to be installed at high lift building- glass break, motion sensors, etc. Install Card reade...

Other Important Info:
GLWA has a responsibility in the layered approach to critical infrastructure security; partnering with Federal, State, and Local law enforcement entities to minimize and respond to threats. This partnership required GLWA to maintain a minimum security posture equating to the Critical Infrastructure designation. Implementation of the security protocols were none existent, and improving the GLWA security foot print can reduce our vulnerabilities and enhance our response to known threats.

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$31	$31	$31	$0	$0	$0	$0	$0	$0	$0	$0
Design-Build # 1 (SOQ-135A)	$1,869	$1,869	$1,869	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 351001

Project Title: LED Lighting and Lighting Control Improvements

Project Status: Cancelled
Class Lvl 1: Centralized Services
Class Lvl 2: Energy Management
Class Lvl 3: General Purpose
Lookup Location: System Wide
☐ **Project New to CIP:**

☑ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**


LED Light

Project Engineer/Manager: Eric Griffin

Director: John Norton

Project Score
60.2

Problem Statement:
Energy savings, demand reduction improved visibility, safety, operational efficiency and worker productivity. Budget was cut to $500,000.00 we plan on reducing scope to 4 Booster stations only under this CIP.MFG 7/25/2019

Scope of Work/Project Alternatives:
Remove identified old fixtures and replace with new LED lamps and advanced control systems.

Other Important Info:
Challenges: Some outfalls are below the river elevation; installation may be challenging.

Project History: An audit was completed in 2010/2011 but little action was taken. Advancement in lighting technology since this audit has rendered it obsolete as to recent innovations, technology and cost. Across the system, equipment is in poor condition and exceeds its end of life. Some existing fixtures are antiques and compared to today's lighting, cannot meet minimum lighting standards.

A well...

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	5 Year Total
GLWA Salaries	$6	$6	$6	$0	$0	$0	$0	$0
Design/Engineering	$0	$0	$0	$0	$0	$0	$0	$0

CIP Number: 380700

Project Title: As-Needed Geotechnical and Related Engineering Services

Project Status: Project Execution - Design
Class Lvl 1: Centralized Services
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: System-wide
☐ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Peter Fromm

Director: Grant Gartrell

Project Score
0

Problem Statement:
GLWA engineering and operations need a contract mechanism to obtain professional engineering services in a timely manner to investigate environmental, geotechnical and specialized engineering problems that occur on a regular basis throughout the system.

Scope of Work/Project Alternatives:
This engineering/technical services contract involves as-needed engineering and technical services related to geotechnical investigations and related geotechnical engineering, construction materials sampling and testing, environmental media sampling and testing, soils sampling and testing, land surveying, corrosion testing and inspection, computer-aided design, and construction inspection. This contract includes design, construction services, and resident project representation for the follow...

Other Important Info:
N/A

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Construction (Build) # 1 (CS-259)	$601	$0	$0	$601	$0	$0	$0	$0	$0	$0	$0

CIP Number: 381000

Project Title: Power Quality: Electric Metering Improvement Program

Project Status: Active - Pre-Procurement - Design
Class Lvl 1: Centralized Services
Class Lvl 2: Programs
Class Lvl 3: Programs
Lookup Location: System-wide
☐ **Project New to CIP:**

- ☐ **Innovation**
- ☐ **WW Master Plan**
- ☐ **Water Master Plan Right Sizing**
- ☑ **Redundancy**
- ☐ **NE WTP Repurposing**
- ☐ **Linear Assets Outside of Facilities**
- ☐ **Predecessor Project(s)**

Power Quality Meters

Project Engineer/Manager: Eric Griffin

Director: John Norton

Project Score
0

Problem Statement:
Advanced meters for measuring power usage in real-time to reduce the electrical demands and further optimize load management practices, GLWA is experiencing a lot of power outages at our facilities. The installation of the New Power Monitors will give us real wave form data to determine why we are having outages and the time period of sagging or swelling voltage which effects the integrity of our equipment. MFG 7/25/2019

Scope of Work/Project Alternatives:
This program will increase the number of electric meters at pumping stations and treatment facilities to allow for active demand management to reduce electricity rates. The meters can be tied to the existing data management system for data archiving and use.
The installation of the New Power Monitors will give us real wave form data to determine why we are having outages and the time period of sagging or swelling voltage which effects the integrity of our equipment.MFG 07/25/2019

Other Important Info:
Project History: Project is in the works targeting high demand (kW) sites - all the water treatment plants (Phase 1)
We would like to change the project to design build and move up on the CIP. The outages we are having are affecting our preassuers that are causing water main breaks and boil water advisories, We need this to better communicate DTE problems that we are faced with and come up with solutions to improve the process or equipment.MFG 7/25/2019

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY22	FY23	FY24	FY25	FY26	FY27	5 Year Total	FY28-32
GLWA Salaries	$125	$0	$0	$0	$41	$41	$41	$0	$0	$125	$0
Design/Engineering	$2,498	$0	$0	$0	$525	$1,256	$717	$0	$0	$2,498	$0

CIP Number: 383300

Project Title: Masonry Replacement and Rehabilitation Program

Project Status: Future Planned - Ten-Year CIP
Class Lvl 1: Centralized Services
Class Lvl 2: General Purpose
Class Lvl 3: General Purpose
Lookup Location: Multiple Counties
☑ **Project New to CIP:**

☐ **Innovation**
☐ **WW Master Plan**
☐ **Water Master Plan Right Sizing**
☐ **Redundancy**
☐ **NE WTP Repurposing**
☐ **Linear Assets Outside of Facilities**
☐ **Predecessor Project(s)**

Project Engineer/Manager: Douglas Atkinson

Director: Paula Anderson

Project Score
0

Problem Statement:
Cracks and deterioration in masonry walls, exterior concrete, retaining walls, concrete decks and floors needing repair or replacement causing concern for safety due to poor conditions.

Scope of Work/Project Alternatives:
For NE WTP: Assess, solve the movement and moisture penetration problem, rebuild portions of masonry and concrete walls, floors, roof parapets and deck elements.
For SW WTP: Assess the panels and support structure, replace panels, repair/restore rusted steel members.
For Imlay City: Remove or rebuild retaining walls to withstand soils pressure.

Other Important Info:
3 sites have been identified for this project all have some failing concrete.
1)Northeast WTP
2)Southwest WTP
3) Imlay City Pumping Station

Current Expenses (All figures are in $1,000's)
"Total Costs" include costs outside of the 10 year planning window
***Design & Construction costs are inclusive of salaries where salaries are not defined**

Activity Name	Total Costs	Actual Costs	Prior FYs	FY28-32
GLWA Salaries	$229	$0	$0	$229
TBD/Unallocated	$24,770	$0	$0	$24,770