

CAPITAL IMPROVEMENT PLAN

FY 25–29 DISCUSSION DRAFT 1



CIP Delivery Team

Capital Planning Committee Meeting

October 17, 2023

Jody Caldwell, PE, Chief Planning Officer

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



AGENDA



CIP Delivery Team

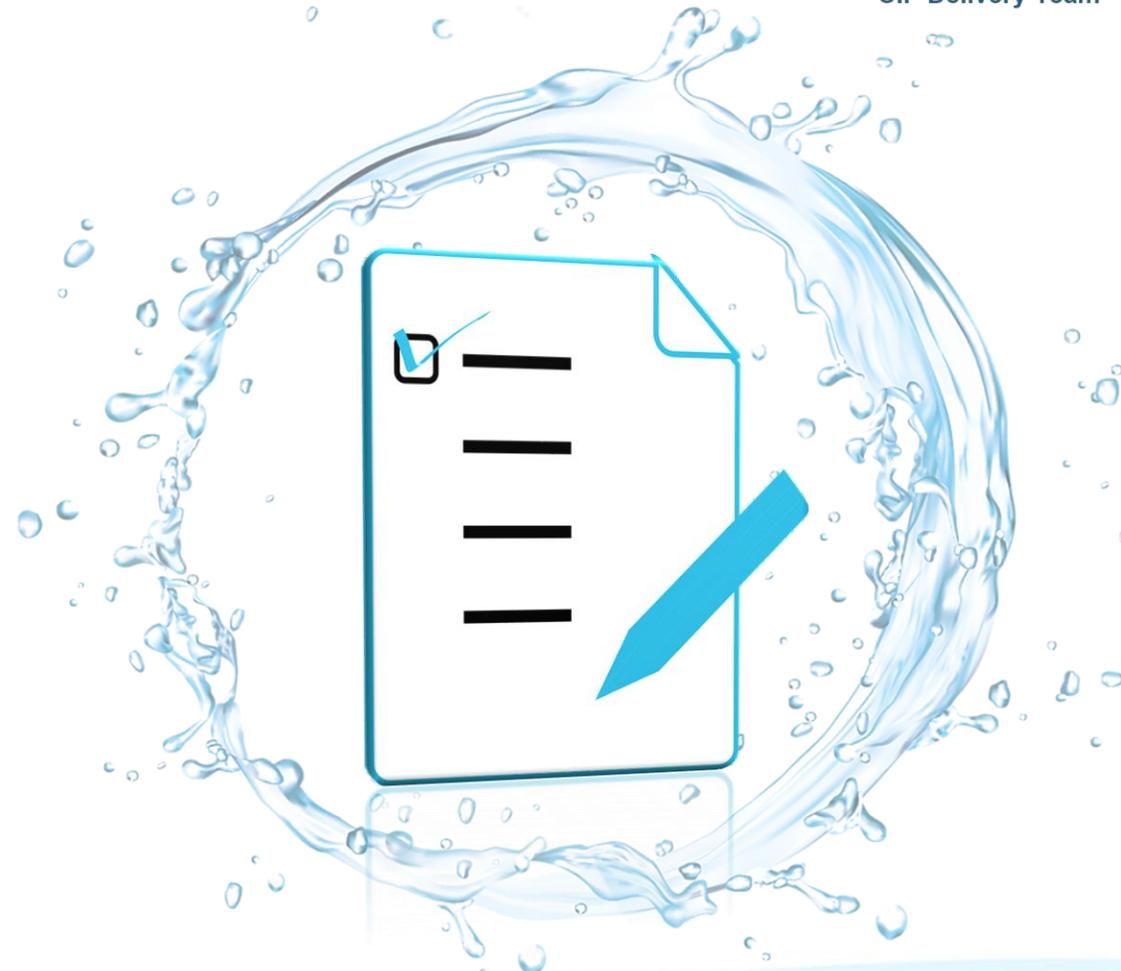
◆ INTRODUCTION

- ◆ Key Takeaways
- ◆ Goals and Objectives

◆ FY 25-29 DISCUSSION DRAFT 1

- ◆ How We Got Here
- ◆ FY 25-29 CIP At A Glance
- ◆ Improvements
- ◆ Opportunities and Challenges
- ◆ Water and Wastewater Details

◆ RECAP AND NEXT STEPS



INTRODUCTION



CIP Delivery Team



KEY TAKEAWAYS



CIP Delivery Team

- ◆ FY25-29 CIP Discussion Draft #1 (Discussion Draft #1) is complete
- ◆ Our approach to developing Discussion Draft #1 remains consistent with established methodologies.
- ◆ Discussion Draft #1 is closely aligned with GLWA's 10-year Financial Plan, ensuring fiscal responsibility and strategic consistency.
- ◆ Decisions related to project scope and schedules for Discussion Draft #1 were influenced by the availability of funding and market conditions.
- ◆ GLWA welcomes comments and questions related to Discussion Draft #1 by November 15, 2023.
- ◆ Board members interested in one-on-one discussions and further clarification, please feel free to contact Director El-Gamal at Dima.El-Gamal@glwater.org to schedule individual meetings.

FY 25-29 CIP PLAN GOALS AND OBJECTIVES



CIP Delivery Team

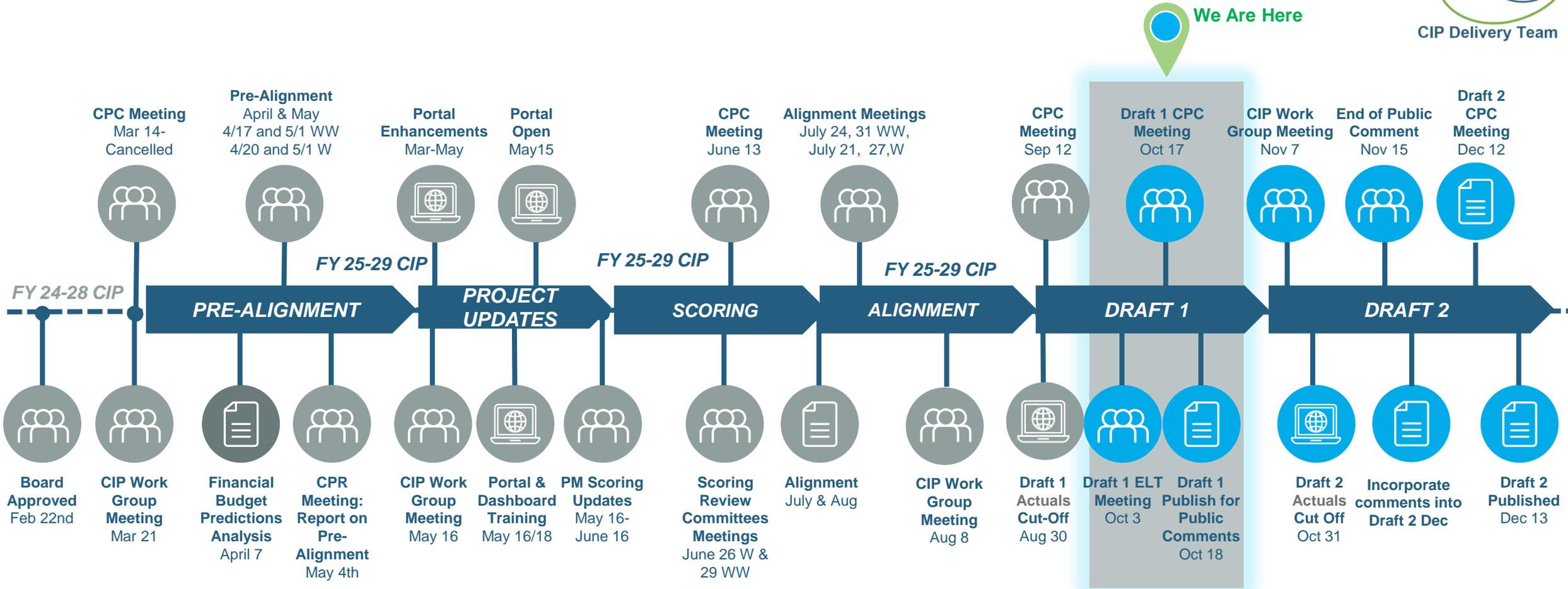
- 💧 Prioritize projects that target :
 - 💧 Enhancing redundancy and resiliency of GLWA's systems.
 - 💧 Prepare for unforeseen challenges.
 - 💧 Address health and safety, safeguarding both our teams and partner communities.
- 💧 Support a coherent and forward-looking approach.
- 💧 Align with the recommendations and objectives outlined in our long-term Master Plans.
- 💧 Actively share information and solicit stakeholder's input.
- 💧 Align with GLWA's financial plan.
- 💧 Meet regulatory requirements and address operational needs.

FY 25-29 DISCUSSION DRAFT 1 OVERVIEW



CIP Delivery Team

FY 25-29 ROADMAP- HOW WE GOT HERE

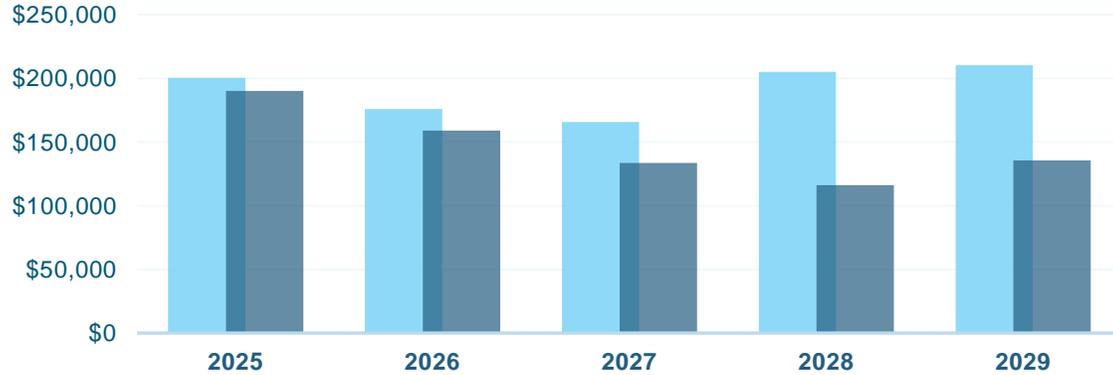


CPC – Capital Improvement Planning | CIP – Capital Improvement Plan
 CPR – Capital Program Review | PM – Project Manager | ELT – Executive Leadership Team

CIP AT A GLANCE



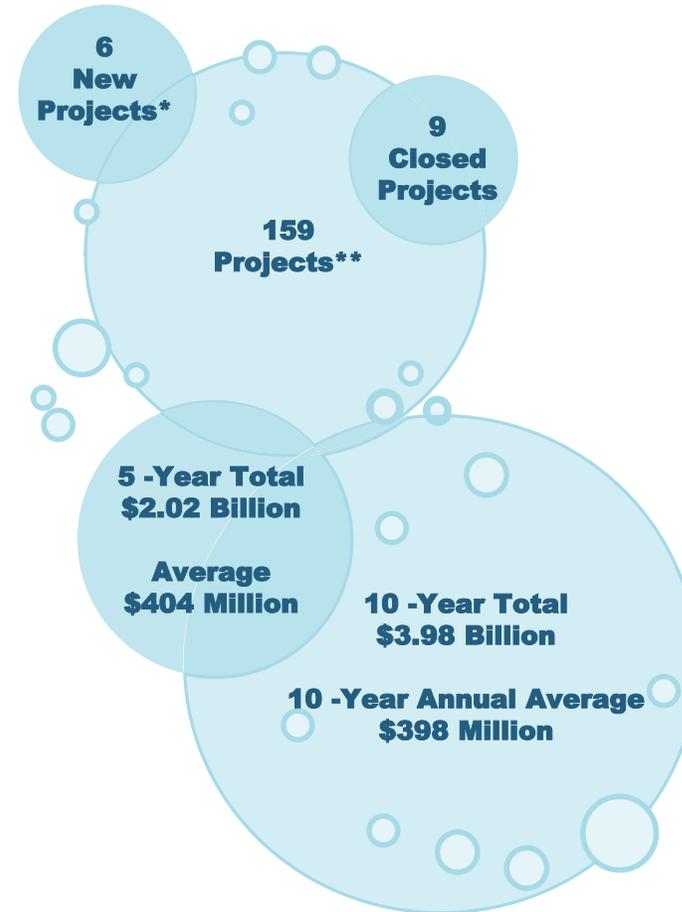
5-Year Outlook



Note : Figures are shown in \$1,000's. ■ Water ■ Wastewater

WATER	
5-Year Total	\$1,061,498
5-Year Average	\$212,300
10-Year Total	\$2,169,213
10-Year Average	\$216,921

WASTEWATER	
5-Year Total	\$959,901
5-Year Average	\$191,980
10-Year Total	\$1,812,289
10-Year Average	\$181,229



*3 NEW PROJECTS FROM PROGRAMS

** IN ADDITION TO THE 159 PROJECTS, THERE ARE:
 +2 RECLASSIFIED PROJECTS
 +3 CANCELLED PROJECTS



Financial figures in \$1,000s and rounded

IMPROVEMENTS/KEY CHANGES



Continuous Improvement

- Scoring
- Financial alignment
- BCE layout and details

Dynamic reporting, Discussion Draft (1) reflects

- Actuals as of August 31, 2023
- PMs updates as of September 22, 2023

Northeast Water Treatment Plant (WTP)

- “Right sizing” per the 2015 Masterplan
- Continue to operate the Northeast WTP to maintain system resiliency

Activity Name	Total Costs	Actual Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
GLWA Salaries	\$504	\$126	\$123	\$129	\$151	\$101	\$0	\$0	\$0	\$252	\$0
Professional Services	\$9	\$9	\$9	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Design/Engineering (CS-055)	\$5,598	\$3,337	\$3,258	\$831	\$903	\$606	\$0	\$0	\$0	\$1,509	\$0
Design/Engineering - (RECLASSIFICATION 115001/115003/1150 04)	\$44	\$44	\$44	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Construction (Build) # J (2000610)	\$49,468	\$26,925	\$25,337	\$9,086	\$9,002	\$6,043	\$0	\$0	\$0	\$15,045	\$0
Miscellaneous	\$450	\$450	\$450	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Totals	\$56,073	\$30,890	\$29,221	\$10,046	\$10,056	\$6,750	\$0	\$0	\$0	\$16,807	\$0

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

CIP	5 Year Total	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	Total
2018	\$53,900	\$0	\$5,500	\$27,900	\$20,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,900
2019	\$70,630	\$9	\$412	\$968	\$20,771	\$34,466	\$14,397	\$28	\$0	\$0	\$0	\$0	\$0	\$0	\$71,051
2020	\$51,999	\$0	\$682	\$899	\$17,333	\$17,333	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$53,580
2021	\$70,008	\$0	\$0	\$1,760	\$251	\$5,462	\$13,349	\$21,478	\$20,883	\$8,836	\$0	\$0	\$0	\$0	\$72,019
2022	\$31,449	\$0	\$430	\$1,077	\$882	\$4,372	\$6,322	\$6,322	\$6,321	\$6,322	\$6,163	\$6,500	\$10,105	\$0	\$54,815
2023	\$37,502	\$9	\$672	\$1,077	\$631	\$2,911	\$11,790	\$11,823	\$11,790	\$11,790	\$2,100	\$0	\$0	\$0	\$55,042
2024	\$28,420	\$9	\$672	\$1,077	\$631	\$2,911	\$6,267	\$15,616	\$10,657	\$10,628	\$7,134	\$0	\$0	\$0	\$56,073

Reporting Period 59: Ending FY24 M02 Aug

Total Costs	Prior FYs	FY24	FY25	FY26	FY27	FY28	FY29	5 Year Total	FY30-34
\$56,073,060	\$29,220,785	\$10,045,632	\$10,056,434	\$6,750,209	\$0	\$0	\$0	\$16,806,642	\$0

Description of CIP Changes:

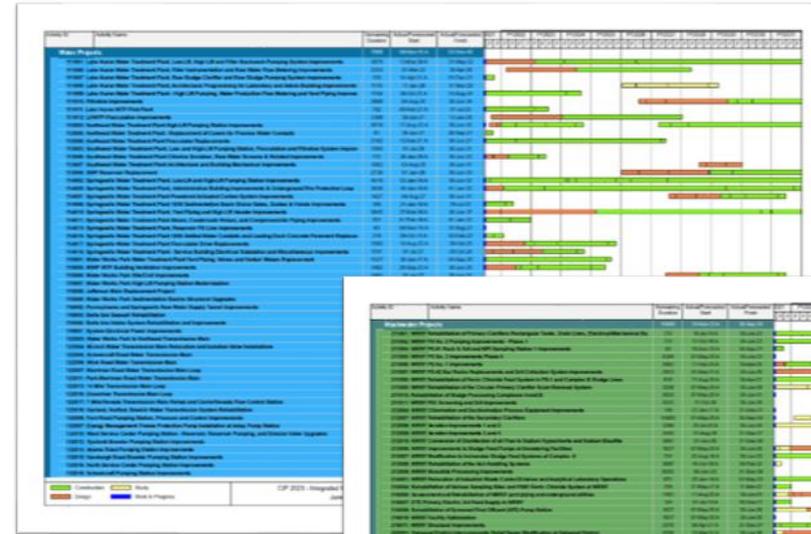
Project costs updated based on actual bid costs.



FY 25-29 CIP DOCUMENT



- 💧 CIP at a glance
- 💧 One page project summaries
- 💧 Water and Wastewater BCE
- 💧 Summary tables per various categories
- 💧 GIS Maps
- 💧 Integrated master schedule



Page 1
CIP Number: 115009

Project Title: Water Works Park Sedimentation Basins Structural Upgrades

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

Project New to CIP
 Useful Life > 20 Yrs
 Multiple Phases

Innovation
 WW Master Plan
 Water Master Plan Right Sizing
 Flood Mitigation
 Redundancy
 NE WTP Repurposing
 Predecessor Project(s)
 Linear Assets Outside of Facilities
 CSO
 Pumps
 Storage
 Treatment

Project Score: 75.3

Project Manager: Jacob Mangum
Director: Peter Fromm
Managing Dept.: Water Eng

Date Original Business Case Prepared: 7/30/2021
Year Project Added to CIP: 2021
CIP Budget: Water

Project Jurisdiction: City of Detroit
Lookup Location: City of Detroit
Funds and Cost Center: Water - 5519-882411 (Field Engineering)

From Program?
Program Number:
Delivery Method: DBB (Design-Bid-Build)
Delivery Method Details:

Is a Predecessor Project?
Successor Projects:
Predecessor Projects:

Collaboration Opportunities: TBD
Partners:
Collaboration Entity:

Photo of Water Works Park Plant

Run Date: 11/13/2021
Date Date: 11/13/21
Page: 1 of 2



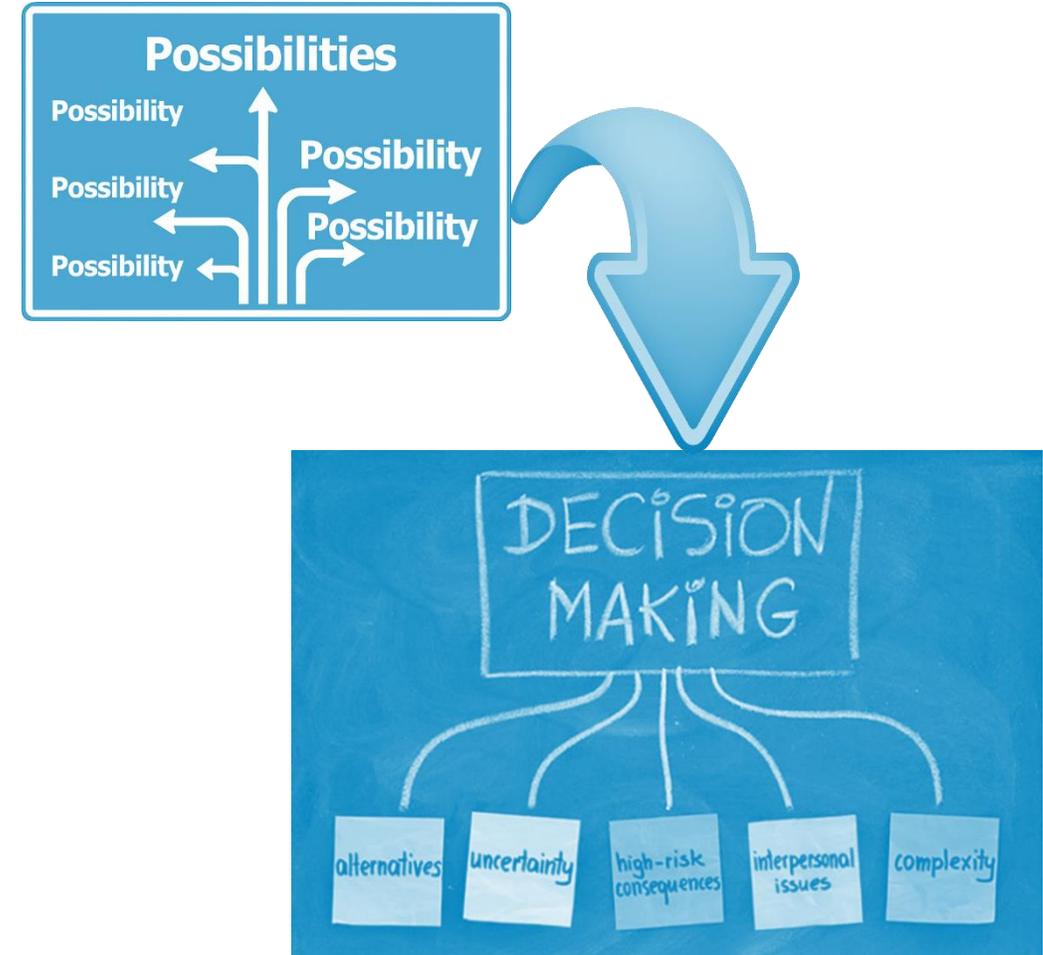
FY 25-29 OPPORTUNITIES AND CHALLENGES

♦ OPPORTUNITIES

- ♦ Leveraged cross functional collaboration
- ♦ Proactive planning
- ♦ Active portfolio monitoring
- ♦ Funding availability

♦ CHALLENGES

- ♦ Market conditions
- ♦ Prioritizing systems needs
- ♦ Balancing needs with financial plan



FY 25-34 WATER SUMMARY



CIP Delivery Team

HIGH LEVEL SUMMARY OF SPENDING PLAN

PROJECTS WITH SIGNIFICANT SCHEDULE ADJUSTMENTS

WATER SYSTEM STATISTICS

NEW PROJECTS

FY 25-29 WATER SUMMARY



CIP Document	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
Approved Water CIP FY 2024-2028	\$239,260	\$200,422	\$176,034	\$165,813	\$205,087	\$210,312	\$986,616
Water CIP FY 2025-2029		\$200,445	\$216,667	\$232,717	\$227,364	\$184,305	\$1,061,498
Difference		\$23	\$40,633	\$66,903	\$22,277	-\$26,007	\$74,882
Difference %		0.01%	23.08%	40.35%	10.86%	-12.37%	7.59%
(Figures are shown in \$1,000's)							

- 5-year total for FY 25-29 is ~7.6 % more than FY 24-28 CIP
- Total 5-Year projected expenditures (FY 25-29 is \$1,061,498)
- 5-year annual average \$212,300 FY 25-29 vs \$197,323 from FY 24-28

WATER PROJECTS W/ SCHEDULE SHIFT => 2 YRS.



Five water projects with a schedule start change of 2 years or more

CIP	TITLE	COST IMPACT	VARIANCE (IN YEARS)
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements	\$148M	4
115007	Water Works Park High Lift Pumping Station Modernization	\$114M	2
132020	Franklin Pumping Station Improvements	\$50.7M	2
381000	Power Quality: Electric Metering Improvement Program	\$5M	2
132015	Newburgh Road Booster Pumping Station Improvements	\$44M	(3)*

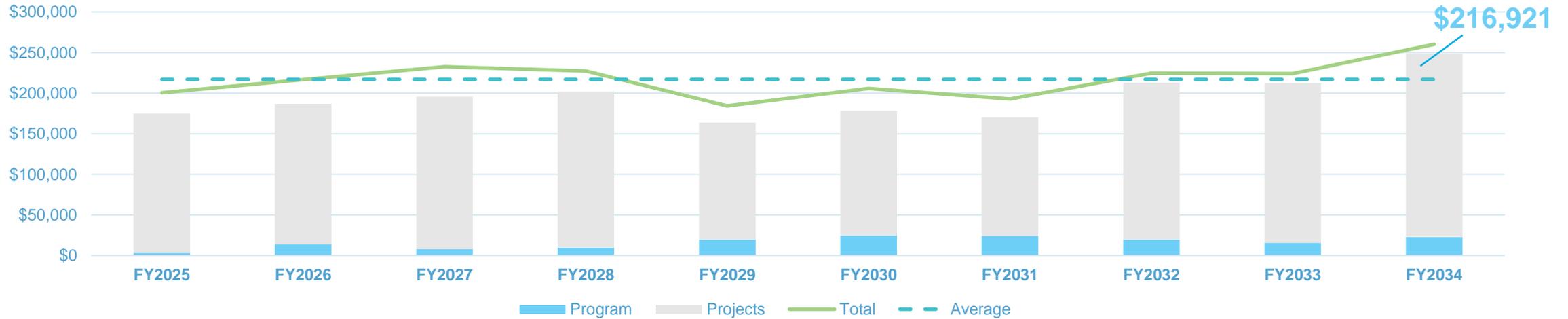
* Construction start date pulled forward

FY 25-34 10-YEAR WATER CIP OUTLOOK



	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034
Program	\$49	\$3,198	\$13,741	\$7,860	\$9,569	\$19,543	\$24,592	\$24,112	\$19,516	\$15,566	\$22,903
Projects	\$189,778	\$171,669	\$172,981	\$187,664	\$192,267	\$144,098	\$153,808	\$145,917	\$193,278	\$196,701	\$225,450
Total	\$216,612	\$200,445	\$216,667	\$232,717	\$227,364	\$184,305	\$205,828	\$192,719	\$224,734	\$224,174	\$260,260

10-Year Water CIP Outlook



11% increase in 10-year average from FY 24-28 CIP (\$195,761)

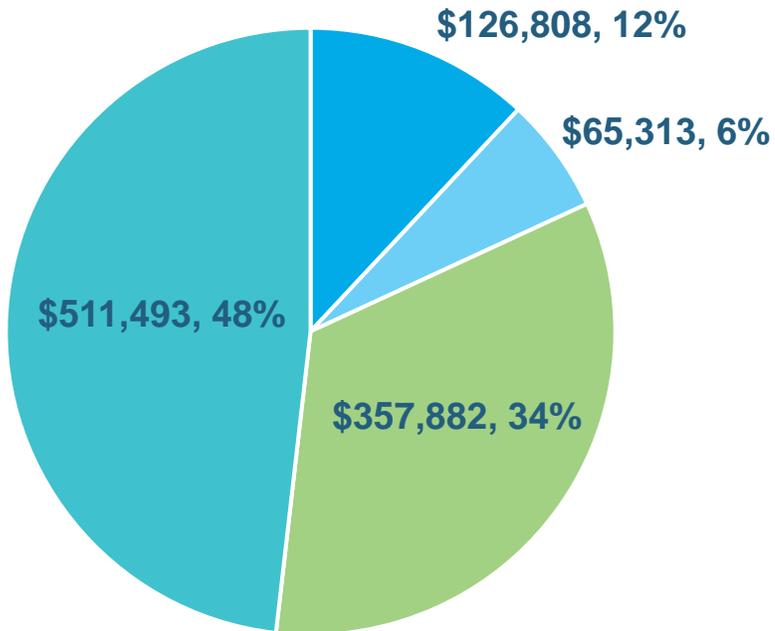


Financial figures in \$1,000s and rounded

WATER SYSTEM STATISTICS PROJECTS BY TYPE

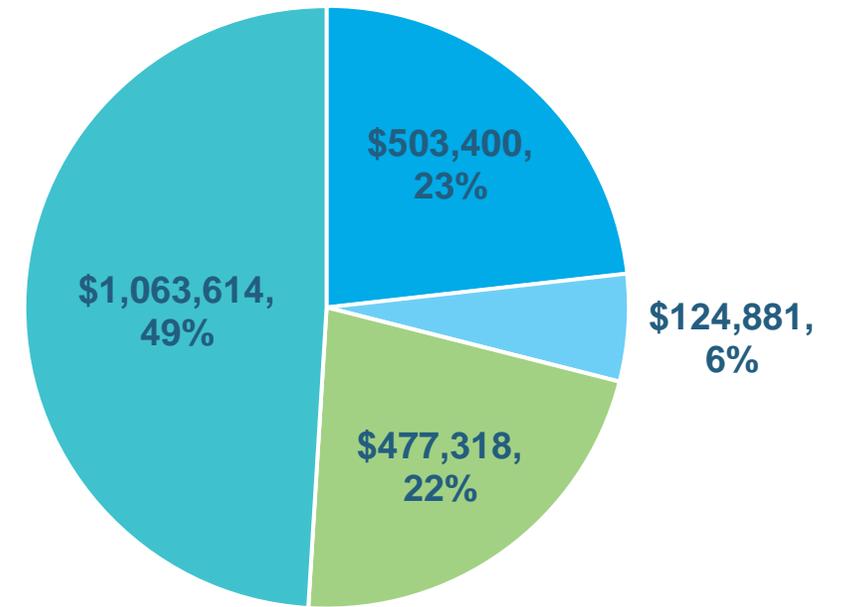


WATER PROJECT 25-29



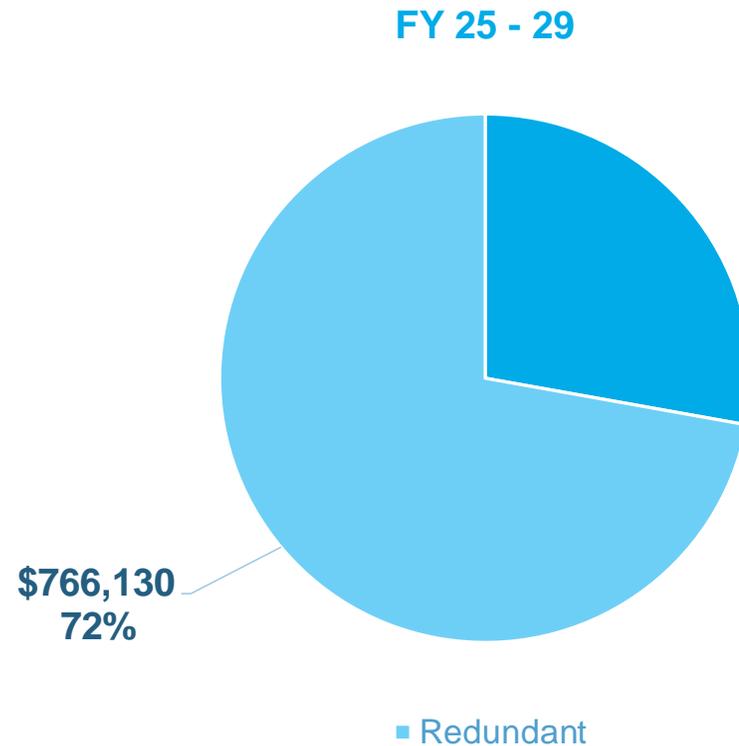
- Water Pumps
- Water Storage
- Water Transmission
- Water Treatment

WATER PROJECT 25-34



- Water Pumps
- Water Storage
- Water Transmission
- Water Treatment

WATER SYSTEM STATISTICS REDUNDANCY PROJECTS



WATER SYSTEM STATISTICS MASTER PLAN PROJECTS



CIP #	Title	2025-2029 CIP Total
111001	Lake Huron Water Treatment Plant, Low-Lift, High Lift and Filter Backwash Pumping System Improvements	\$100,331
111010	Filtration Improvements	\$2,434
113010	Southwest Water Treatment Plant Flocculation Improvements	\$10,579
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	\$157,379
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	\$16,807
122007	Merriman Road Water Transmission Main Loop	\$2,014

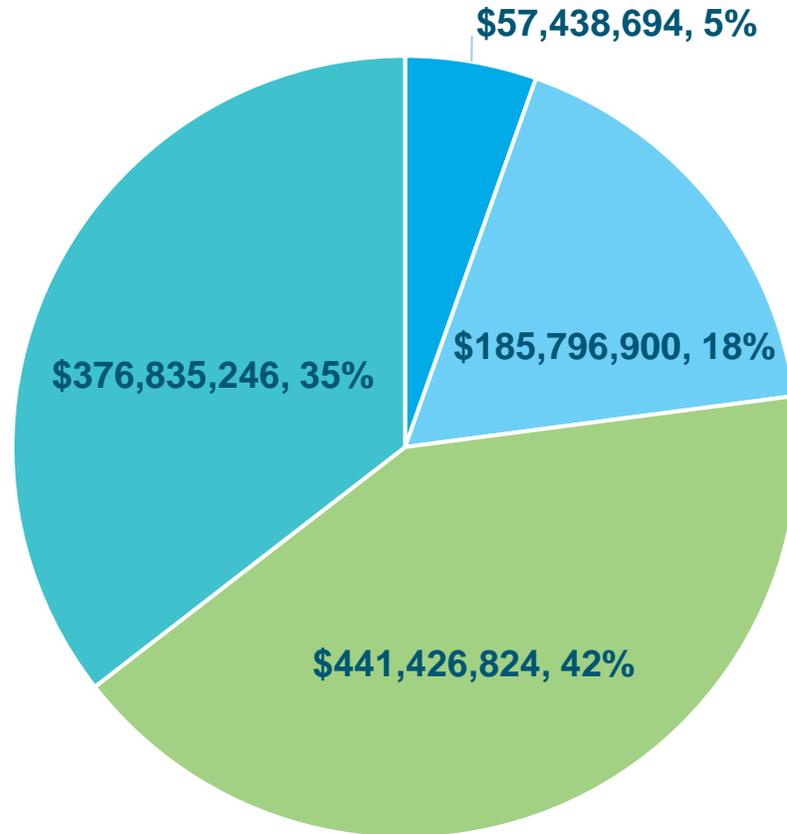
	FY 25-29
Water	\$771,955
Water Master Plan	\$289,543: 27%

WATER SYSTEM STATISTICS PROJECTS STATUS



CIP Delivery Team

FY 25-29



- Active (Pre-Procurement & Procurement)
- Future Planned - Within Five Year Plan
- Project Execution - Construction
- Project Execution - Design

NEW WATER PROJECTS WITHIN 5 YEARS



5 new water projects were added to the FY 25-29 CIP

CIP #	Title	Total Project \$	DesignStart	Const. Start	Const. End
111013	Lake Huron Water Treatment Plant Fireloop and Plant Water Improvements	\$10,055,000	FY30	FY30	FY33
112008	Northeast Water Treatment Plant Filter Replacement	\$85,550,000	FY25	FY27	FY32
113010	Southwest Water Treatment Plant Flocculation Improvements	\$22,225,247	FY26	FY31	FY33
170506	Water Transmission, Valve, Emergency and Other Urgent Repairs	\$15,000,000	N.A.	FY25	FY30
170602	36-inch 24 Mile Road Transmission Main Condition Assessment	\$6,144,000	FY24	FY24	FY31

- From Programs (170506 and 170602)
- Construction only (170506)

WATER SUMMARY



CIP Delivery Team

The Regional Water System CIP projects are driven by:

- The Water System Master Plans "right sizing" approach for optimal water treatment capacity
- Condition assessments to focus investment on "surgical renewal and replacement of treatment, pumping and transmission assets"
- Decided to continue treatment at our Northeast Water Treatment Plant
- Results in more resilient water system operations
- Higher costs of piping capital projects tipped the scales financially

FY 2025-2029 CIP projects address:

- Water treatment - approximately 48% of Water CIP capital projections
- Transmission system - approximately 52% of Water CIP capital projections

FY 25-34 WASTEWATER SUMMARY



CIP Delivery Team

HIGH LEVEL SUMMARY OF SPENDING PLAN

PROJECTS WITH SIGNIFICANT SCHEDULE ADJUSTMENTS

WASTEWATER STATISTICS

NEW PROJECTS

FY 25-29 WASTEWATER SUMMARY



CIP Delivery Team

CIP Document	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	5-Year Total
Approved Wastewater CIP FY 2024-2028	\$199,061	\$190,159	\$159,044	\$133,732	\$116,180	\$135,663	\$798,176
Wastewater CIP FY 2025-2029		\$180,801	\$188,271	\$214,106	\$198,382	\$178,341	\$959,901
Difference		(\$9,358)	\$29,227	\$80,375	\$82,202	\$42,678	\$161,725
Difference %		-4.92%	18.38%	60.10%	70.75%	31.46%	20.26%

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

- ~ 20 % Increase 5-year total between FY 24-28 & Proposed FY 25-29 CIP
- Total 5-Year projected expenditures (FY25-29 is \$959,901)
- 5-year annual average \$191,980 (compared to \$159,635 from FY 24-28)

Without Oakwood Relief Sewer

5-year average ~ \$176,000

~10 % increase in 10-year average from FY 24-28 CIP



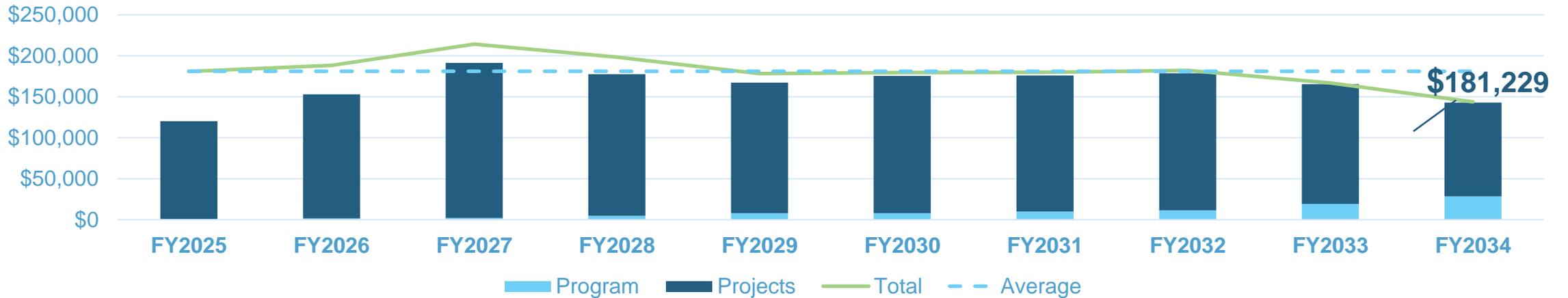
Financial figures in table are in \$1,000s and rounded

FY 25-34 10-YEAR WASTEWATER CIP OUTLOOK



	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034
Program	\$647	\$777	\$1,787	\$2,306	\$4,766	\$8,094	\$8,094	\$10,130	\$11,326	\$19,273	\$28,702
Projects	\$84,691	\$119,272	\$151,080	\$188,956	\$172,769	\$159,145	\$167,267	\$165,962	\$167,246	\$146,017	\$114,257
Total	\$161,195	\$180,801	\$188,271	\$214,106	\$198,382	\$178,341	\$179,546	\$179,811	\$182,302	\$166,764	\$143,965

10-Year Wastewater CIP Outlook



- ~16% increase in 10-year average from FY24-28 CIP (\$156,066)
 - Without Oakwood Relief Sewer:
 - 10-year average ~ \$173,000
 - ~11% increase in 10-year average from FY24-28 CIP

WASTEWATER PROJECTS W/ SCHEDULE SHIFT => 2 YRS.



One wastewater projects with a schedule start change of 2 years or more

CIP	TITLE	COST IMPACT	VARIANCE IN YEARS
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	\$78.3M	(5)*

**Construction start date pulled forward*

WASTEWATER SYSTEM STATISTICS

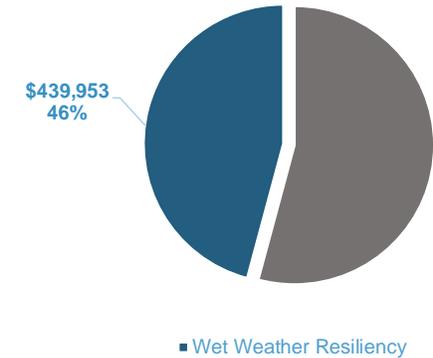


CIP Delivery Team

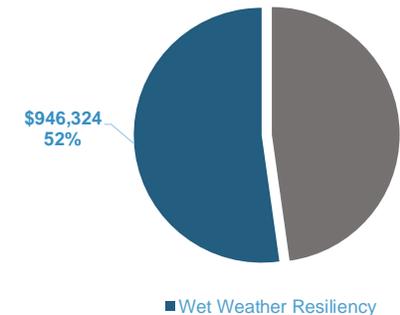
WET WEATHER RESILIENCY PROJECTS

CIP #	Title
211002	WRRF PS No. 2 Pumping Improvements - Phase 1
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
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
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
216011	WRRF Structural Improvements
260800	WRRF Roof Replacement for Multiple Facilities Program
260802	2022 WRRF Roof Improvements Project
260900	WRRF Facility Optimization Program
260901	Rehabilitation of HAZMAT Facility at WRRF
260902	WRRF 4th Floor Renovation
260903	WRRF Front Entrance Rehabilitation
260904	WRRF 3rd Floor Renovation
260905	WRRF Plumbing Shop Renovation - 260905
261000	WRRF Rehabilitation of the Secondary Clarifiers
261001	WRRF Rehabilitation of the Secondary Clarifiers Phase 1

Projects FY 25-29 (5 Year)



Projects FY 25-34 (10 Year)

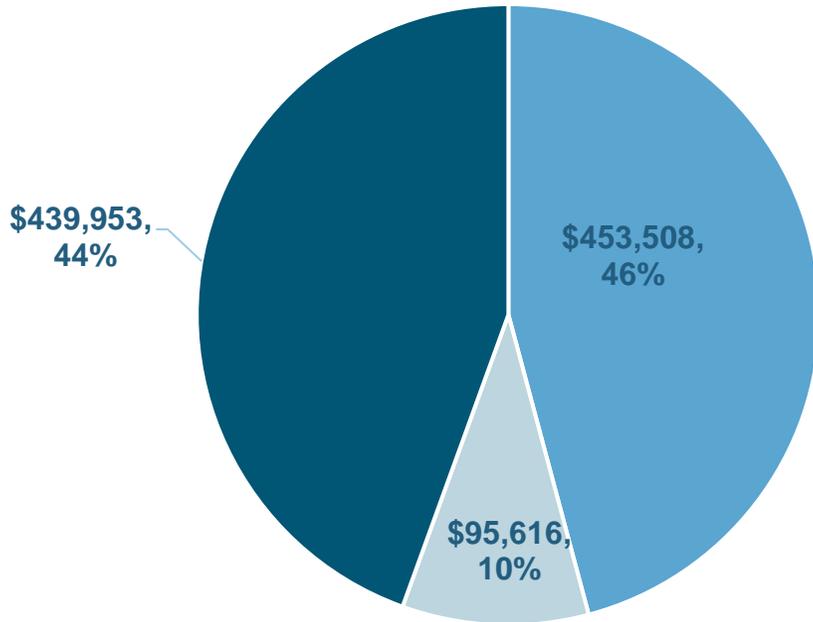


Financial figures in \$1,000s and rounded

WASTEWATER SYSTEM STATISTICS PROJECTS BY TYPE

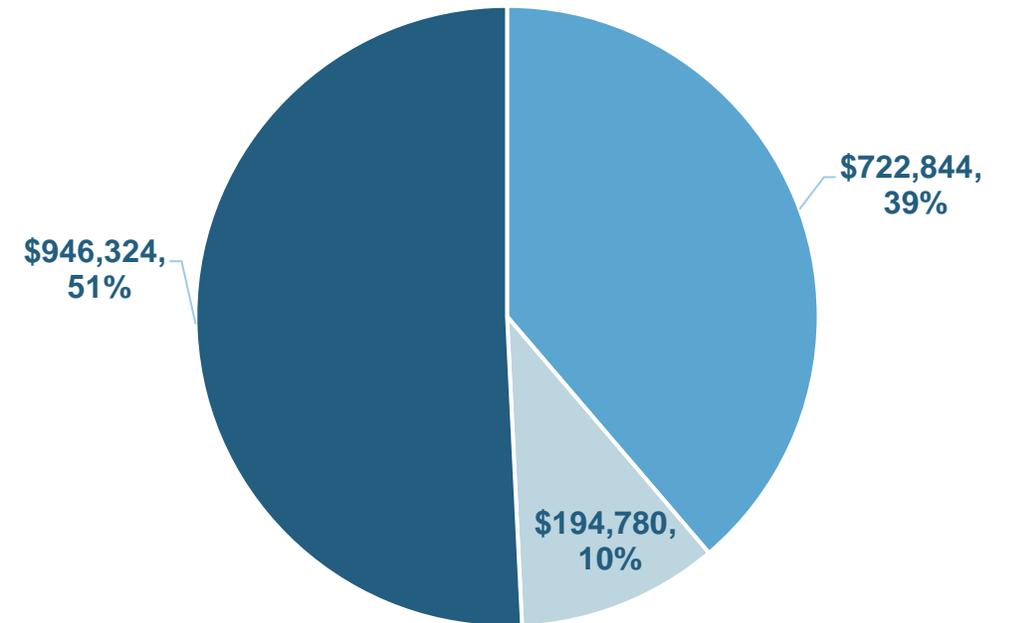


WASTEWATER PROJECT FY 25-29



- Wastewater Conveyance/Pumps
- Wastewater CSO
- Wastewater Treatment

WASTEWATER PROJECT FY 25-34

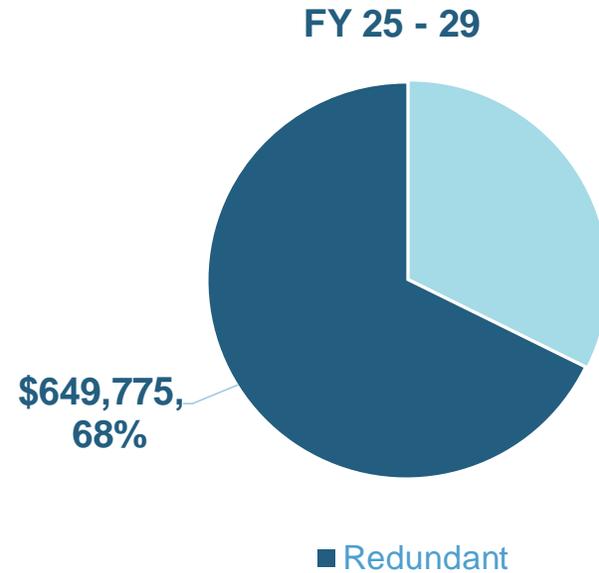


- Wastewater Conveyance/Pumps
- Wastewater CSO
- Wastewater Treatment



Financial figures in \$1,000s and rounded

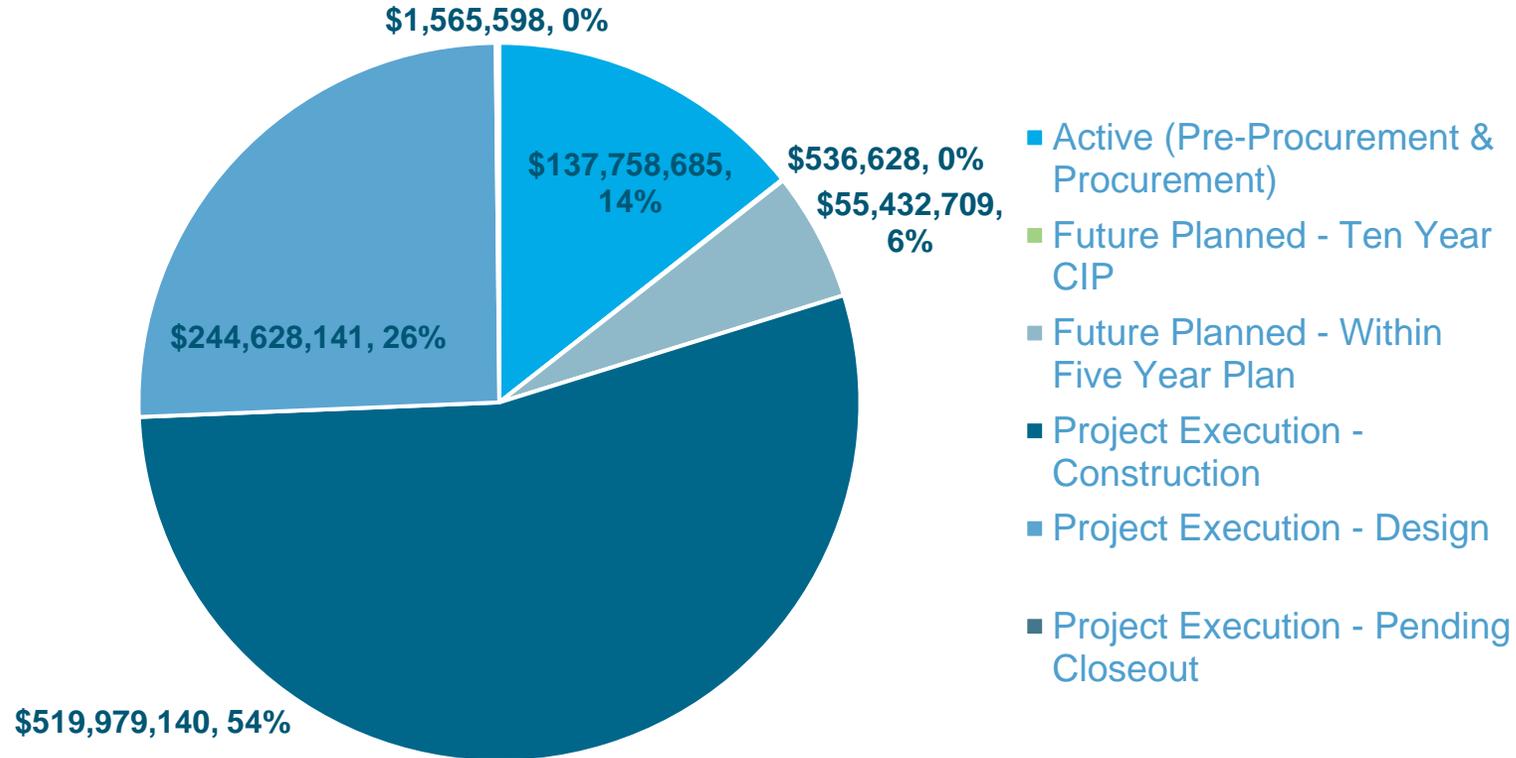
WASTEWATER SYSTEM STATISTICS REDUNDANCY PROJECTS



WASTEWATER SYSTEM STATISTICS PROJECTS STATUS



FY 25-29



WASTEWATER NEW PROJECTS WITHIN 5 & 10 YEARS



1 new wastewater project were added to the FY 25-34 CIP

CIP #	Title	Total Project \$	DesignStart	Const. Start	Const. End
260211	Emergency and Urgent Sewer Repair II	\$6,000,000	N/A	FY24	FY28

- Project from program (260211)
- Construction only (260211)

WASTEWATER



CIP Delivery Team

💧 The Regional Sewer System CIP projects are driven by:

- 💧 Investment into our existing infrastructure to ensure reliable conveyance of wastewater while right sizing our assets.
- 💧 Wastewater Master plan projects that ensure the system readiness for today and into the future.
- 💧 Renewable resources that can be harvested from wastewater and repurposed for treatment.
- 💧 Wet Weather mitigation to reduce untreated discharges.

💧 The FY 24-29 CIP projects address:

- 💧 Water Resource Recovery Facility – approximately 41% of capital expenditures
- 💧 Collection – approximately 47% of capital expenditures
- 💧 CSO Facilities and programs – approximately 10% of Sewer CIP capital expenditures

WATER AND WASETWATER PROJECTS WITH STATUS CHANGE



CIP Delivery Team

CLOSED

PENDING CLOSEOUT

RECLASSIFIED

CANCELED

PROJECT STATUS CHANGES



CIP Delivery Team

CLOSED

CIP Area	CIP #	Title
Water	114016	Springwells Water Treatment Plant 1958 Settled Water Conduits and Loading Dock Concrete Pavement Replacement
	122003	Water Works Park to Northeast Transmission Main
	122005	Schoolcraft Road Water Transmission Main
	122011	Park-Merriman Road Water Transmission Main
	170109	GLWA-CS-187: FK Eng: Raw Water Intake
	170303	Power Monitoring Installation for Water Treatment Plants
	170304	WWP Scada Infrastructure Upgrade
	170502	Transmission System Valve Rehabilitation and Replacement Phase I
Wastewater	260603	Conner Creek CSO RTB Automation Improvements

PENDING CLOSEOUT

CIP Area	CIP #	Title
Water	111011	Lake Huron WTP Pilot Plant
	113006	Scrubber, Raw Water Screens & Related Improvements
	216004	Rehabilitation of Various Sampling Sites and PS#2 Ferric Chloride System at WRRF
	260618	Oakwood HVAC Project
Wastewater	260620	Baby Creek Roof Replacement

RECLASSIFIED & CANCELLED

CIP Area	CIP #	Title	Project Status	New CIP #
Water	114007	Springwells Water Treatment Plant Powdered Activated Carbon System Improvements	Cancelled	N/A
Water	122018	Garland, Hurlbut, Bewick Water Transmission System Rehabilitation	Cancelled	N/A
Wastewater	232004	Condition Assessment at Blue Hill Pump Station	Cancelled	N/A
Water	170307	NE SCADA Network Upgrade	Reclassified	170306
Water	170902	Brownstown Meter Pit	Reclassified	122016

RECAP & NEXT STEPS

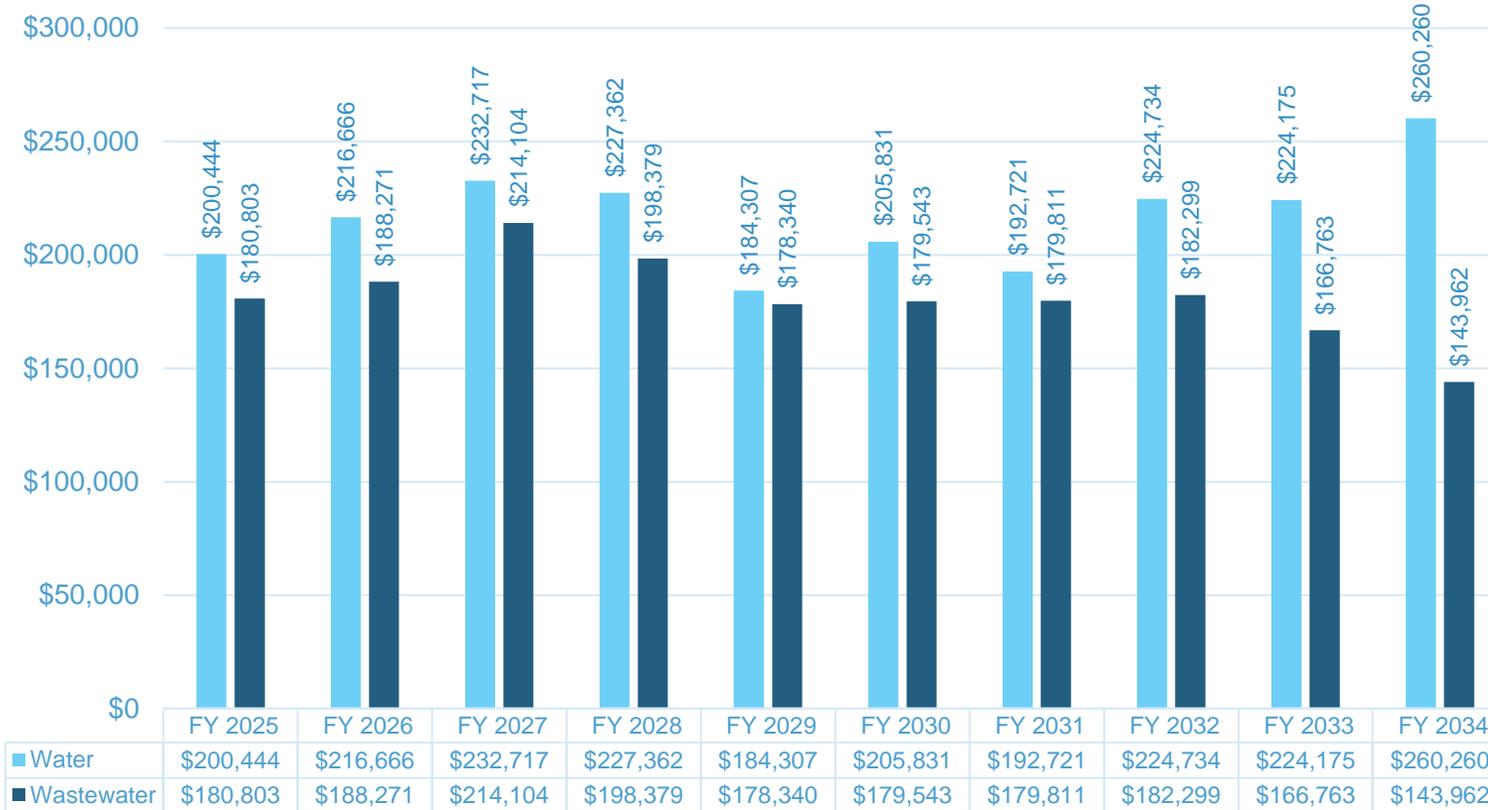


CIP Delivery Team

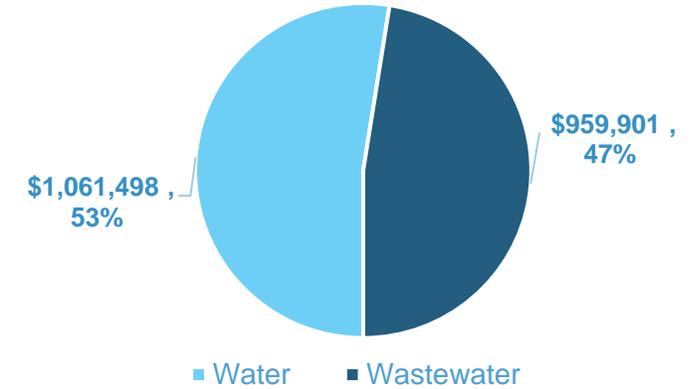
WATER & WASTEWATER CIP FY 25-34 (10YR PROJECTIONS)



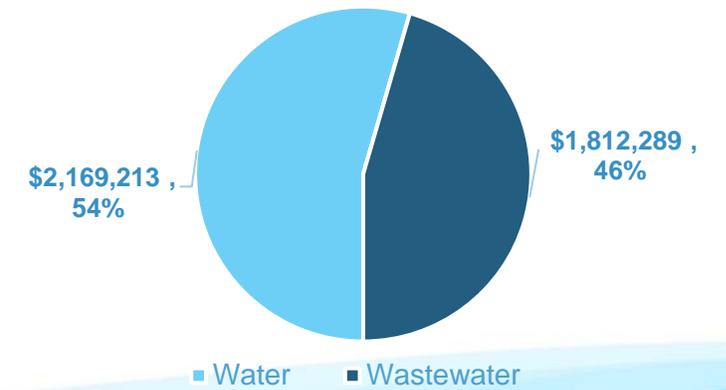
10 Year CIP



CIP 25-29 (5 Year) Business Unit



CIP 25-34 (10 Year) Business Unit

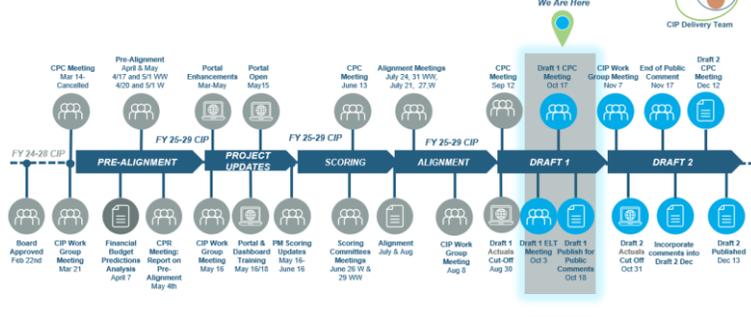


Financial figures in \$1,000s

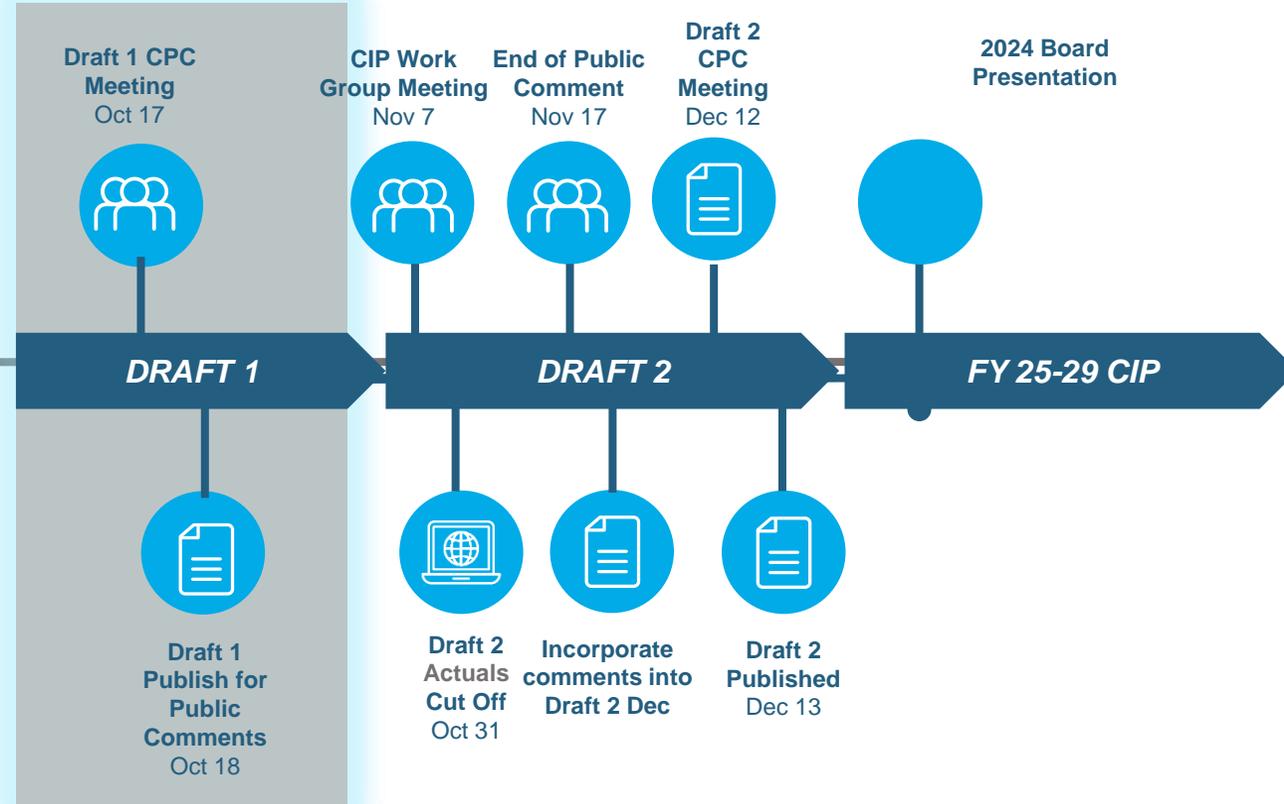
FY 25-29 ROADMAP- WHAT'S NEXT



FY 25-29 ROADMAP- HOW WE GOT HERE



We Are Here



Board Approved
Feb 22nd



CPC – Capital Improvement Planning | CIP – Capital Improvement Plan
CPR – Capital Program Review | PM – Project Manager | ELT – Executive Leadership Team

KEY TAKEAWAYS



CIP Delivery Team

- ◆ FY 25-29 CIP Discussion Draft #1 (Discussion Draft #1) is complete
- ◆ Our approach to developing Discussion Draft #1 remains consistent with established methodologies.
- ◆ Discussion Draft #1 is closely aligned with GLWA's 10-year Financial Plan, ensuring fiscal responsibility and strategic consistency.
- ◆ Decisions related to project scope and schedules for Discussion Draft #1 were influenced by the availability of funding and market conditions.
- ◆ GLWA welcomes comments and questions related to Discussion Draft #1 by November 15, 2023
- ◆ Board members interested in one-on-one discussions and further clarification, please feel free to contact Director El-Gamal at Dima.El-Gamal@glwater.org to schedule individual meetings.

THANK YOU



CIP Delivery Team

