

CIP Delivery Team

CAPITAL IMPROVEMENT PLAN FY 24–28 DISCUSSION DRAFT 1

Capital Planning Committee Meeting

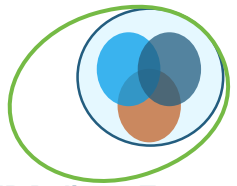
October 18, 2022

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

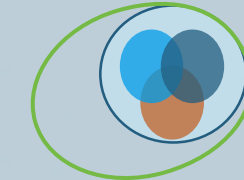
◆ FY 2024-2028 DISCUSSION DRAFT 1 OVERVIEW

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

◆ ESCALATION

◆ RECAP AND NEXT STEPS





CIP Delivery Team

INTRODUCTION



KEY TAKEAWAYS



CIP Delivery Team

- 💧 **FY24-28 CIP Discussion Draft #1 Complete**
- 💧 **CIP development methodology and prioritization are consistent with past practices**
- 💧 **CIP is in alignment with the GLWA Financial Plan**
- 💧 **Inflationary increases and supply chain delays have required GLWA to significantly modify the scope & schedule of many past, FY23-27 CIP projects**
- 💧 **GLWA is requesting comments and questions to the FY24-28 CIP by November 18, 2022**
- 💧 **Board members wanting individual 1 on1 meetings for further discussion, please contact: Dima.El-Gamal@glwater.org**

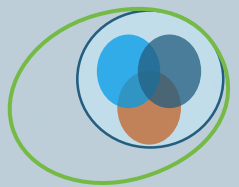
FY24-28 CIP PLAN GOALS AND OBJECTIVES



CIP Delivery Team

- ◆ **Address projects that promote improved redundancy, system resiliency, and health & safety**
- ◆ **Conformance with recommendations of long-term master plans**
- ◆ **Share information and solicit stakeholders input**
- ◆ **CIP alignment with the financial plan**
- ◆ **Meet regulatory and operational needs**

FY 2024-2028 DISCUSSION DRAFT 1 OVERVIEW



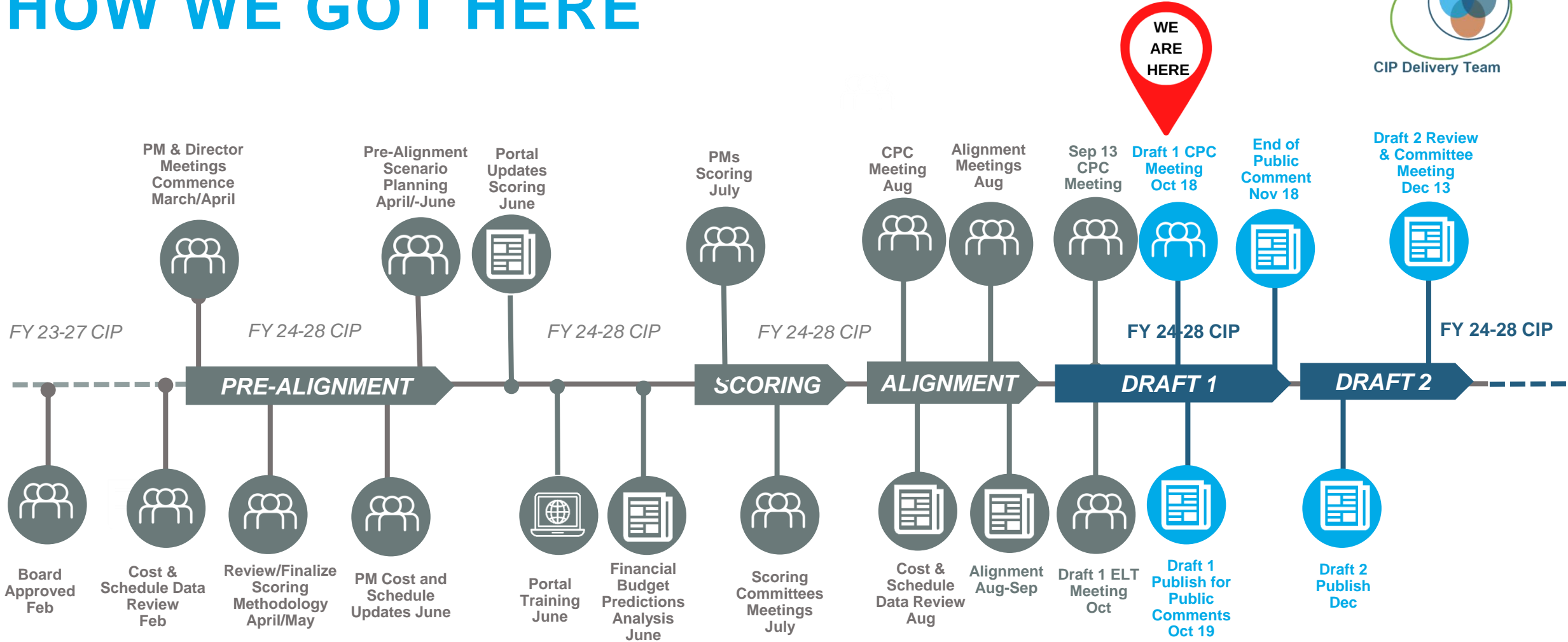
CIP Delivery Team



HOW WE GOT HERE



CIP Delivery Team

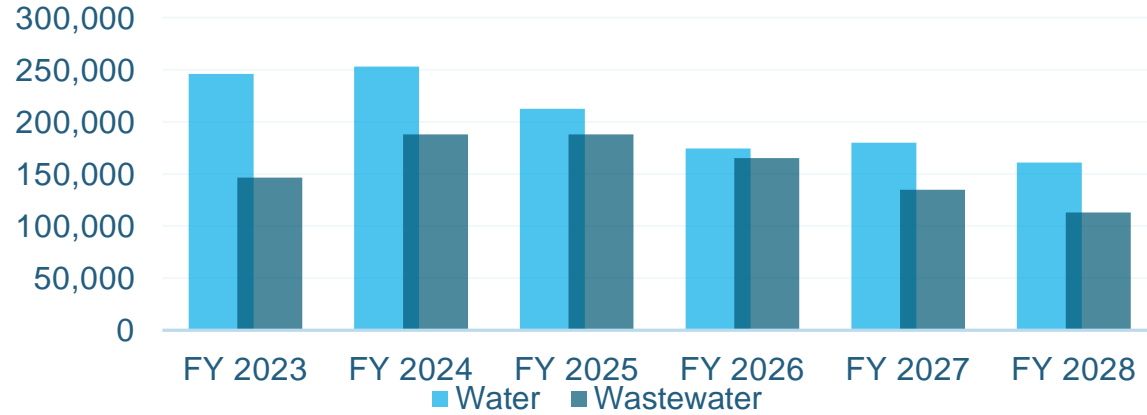


CIP AT A GLANCE



CIP Delivery Team

5-Year Outlook



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

WATER	
5-Year Total	\$980,659
5-Year Average	\$196,132
10-Year Total	\$1,911,061
10-Year Average	\$191,106

WASTEWATER	
5-Year Total	\$788,604
5-Year Average	\$157,721
10-Year Total	\$1,556,113
10-Year Average	\$155,611



**5 NEW PROJECTS FROM PROGRAMS*

*** IN ADDITION TO THE 168 PROJECTS, THERE ARE:
+2 RECLASSIFIED PROJECTS
+1 CANCELLED PROJECT*



Financial figures in \$1,000s and rounded

FY 2024-2028 CIP IMPROVEMENTS



CIP Delivery Team

Streamlined the financial alignment process

Optimized the reporting on scoring

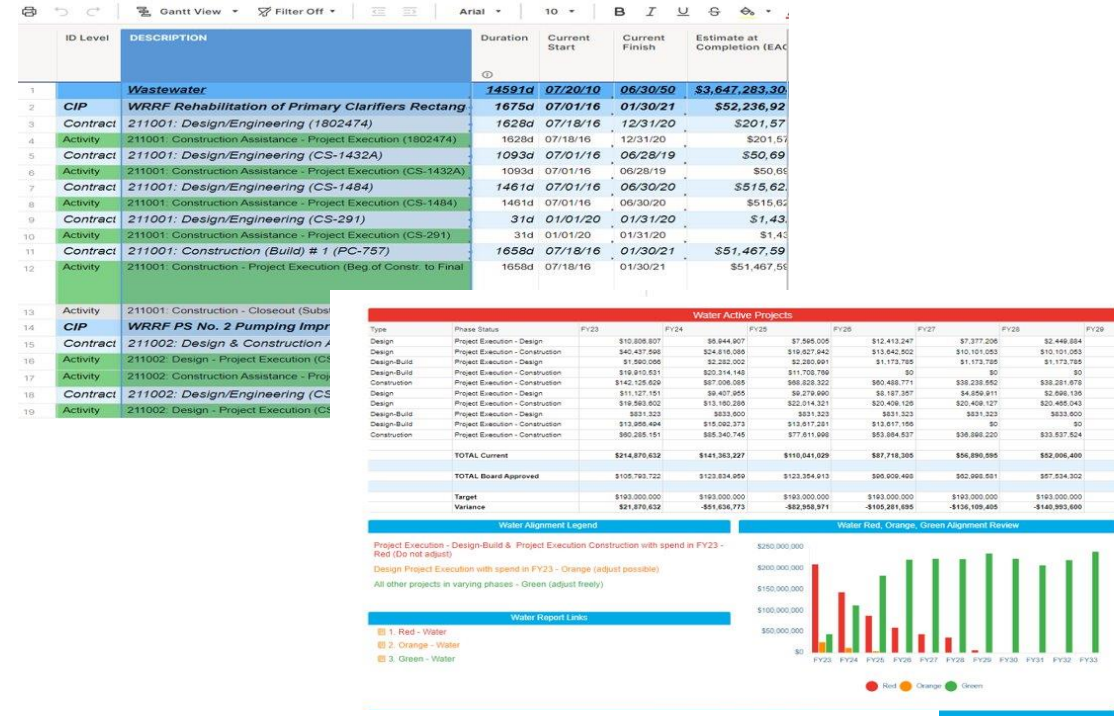
GIS viewer added to GLWA website

Improved Business Case Evaluation (BCE) layout and details

Added final FY22 Key Performance Indicators (KPI's)

Dynamic reporting, Discussion Drafts (1 and 2) will reflect actuals

InDesign used to produce the CIP document



Page 3
CIP Number: 111011

Project Title: Lake Huron WTP Pilot Plant

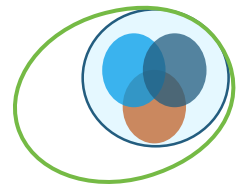
Scoring
Project Manager Weighted Score: 76.1

Criteria Name	Score	Score Criteria	Comment
Condition	5	D. Immediate replacement or rehabilitation required	Previous pilot plant demolished; construction is 35-40% complete on new pilot plant.
Performance (Service Level/Reliability)	2	C. Project moderate to low positive impact on service levels and/or system reliability	pilot plant is completely separate from full scale plant but informs decision making process (ie chem feed; filter profile; backwash details, etc.)
Regulatory (Environmental/Legal)	4	B. Project not part of mandated or enforceable program, but directly related to know expected future requirements: will increase compliance	Pending meeting with EGLE to discuss flocculation improvements at LH may include piloting new flocculation strategies.
Operations and Maintenance	3	C. Project moderate positive impact on O&M; alleviate any ongoing O&M issues	Pilot plant does not alleviate O&M directly however using the pilot plant to validate alternative flocculation strategies may.
Health and Safety	3	C. Likely to address minor hazard issues or concerns	improved lighting in chemical basement and added emergency shower.
Public Benefit	2	C. Additional revenue/savings for GLWA (<=\$100k/yr)	improving process controls (chem feed, filter profiles etc) may result in future savings.
Financial	3	D. Canceling project moderate financial consequences (revenue loss, repair/restoration, downtime, fines, litigation)	Contract with DB contractor in place; equipment ordered.
Efficiency and Innovation	5	D. efficiency: Water use, effluent reuse/recycling or other GLWA strategic initiatives*; Business process optimization and institutional knowledge; Process efficiency for a more robust system and less O&M; knowledge capture; or time & cost savings.	Will allow for testing for LH process optimization.

Review Committee Weighted Score: 50.7

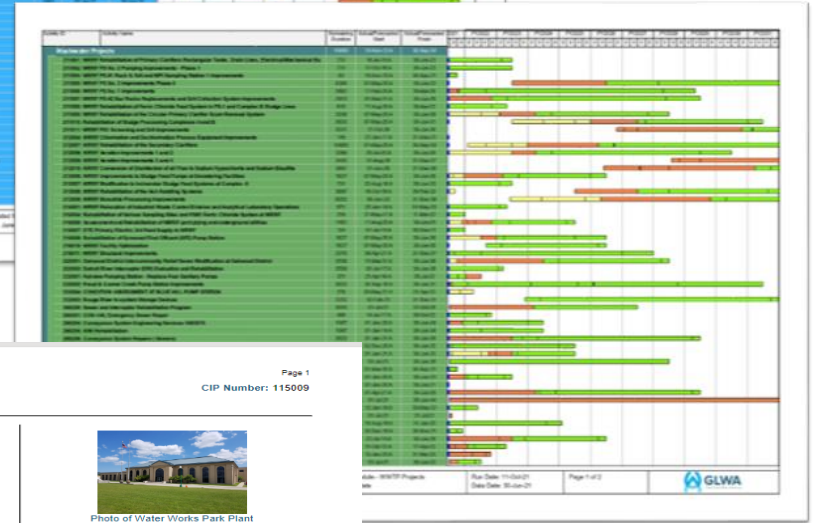
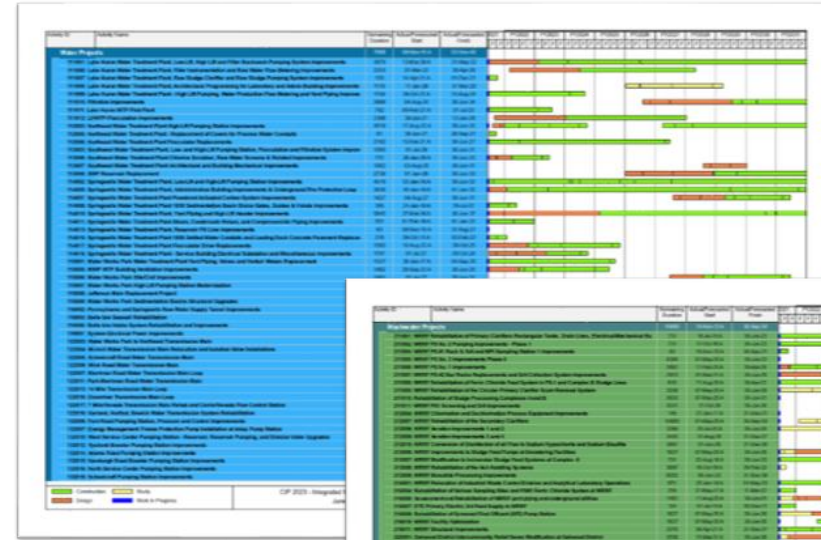


FY 2024-2028 CIP DOCUMENT



CIP Delivery Team

- 💧 CIP at a Glance
- 💧 One page project summaries
- 💧 Business Case Evaluation (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

Project Score
75.3

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

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

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

Photo of Water Works Park Plant

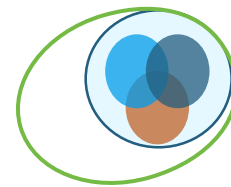
Date Original Business Case Prepared: 7/30/2021
Year Project Added to CIP: 2021
CIP Budget: Water

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

Collaboration Opportunities: TBD
Partners:
Collaboration Entity:



FY 2024-2028 OPPORTUNITIES AND CHALLENGES



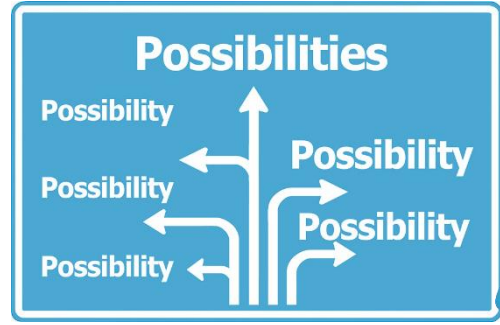
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OPPORTUNITIES

- Leveraged cross functional collaboration
- Early detection of market conditions
- Proactive planning on monitoring escalation

CHALLENGES

- Cost pressures and escalation
- Extended lead times and limited resources
- Prioritizing system needs
- Balancing system needs with financial plan



FY 2024-2033 WATER SUMMARY



CIP Delivery Team

HIGH LEVEL SUMMARY OF SPENDING PLAN

PROJECTS WITH SIGNIFICANT ADJUSTMENTS*

WATER SYSTEM STATISTICS

NEW PROJECTS

FY2024-2028 WATER SUMMARY

CIP Document	FY2023	FY2024	FY2025	FY2026	FY 2027	FY 2028	5-Year Total
Approved Water CIP FY 2023-2027	\$194,376	\$225,436	\$221,616	\$174,681	\$149,539	\$218,354	\$965,648
Draft Water CIP FY 2024-2028		\$252,973	\$212,568	\$174,484	\$179,831	\$160,802	\$980,659
Difference (\$)		\$28	(\$9)	(\$0.2)	\$30	(\$58)	(\$15)
Difference (%)		12%	-4%	0%	20%	-26%	2%

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

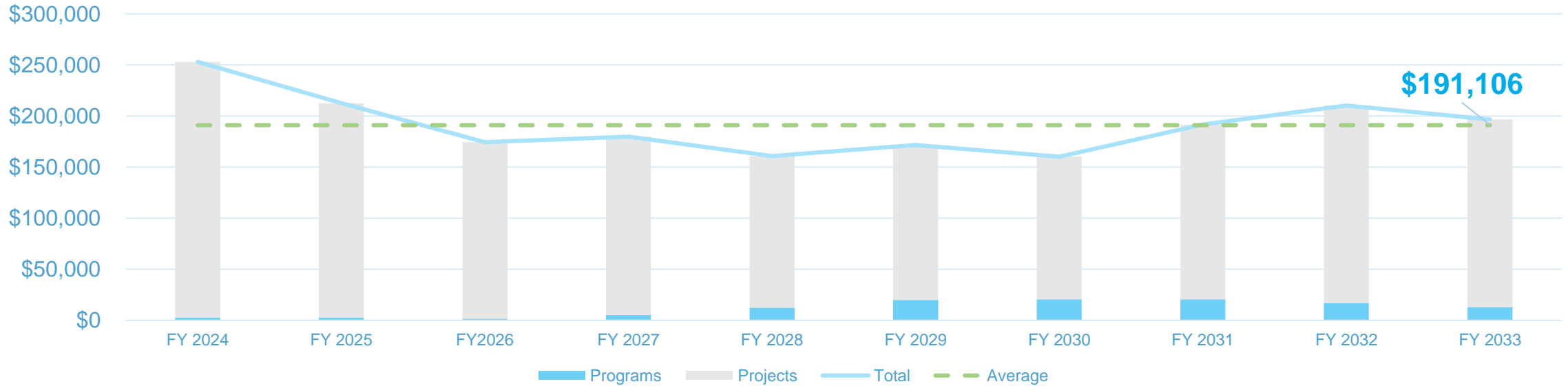
- 5-year total for FY 2024-2028 is ~1.6 % less than FY23-27 CIP
- Total 5-Year projected expenditures (24-28 is \$980,659)
- 5-year annual average \$196,132 FY24-28 vs \$193,130 from FY23-27

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

FY2024-2033 10-YEAR WATER CIP OUTLOOK

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Projects	\$246,887	\$250,243	\$209,845	\$172,827	\$174,498	\$148,372	\$151,671	\$139,580	\$171,106	\$193,288	\$183,661
Programs	\$504	\$2,731	\$2,723	\$1,657	\$5,333	\$12,431	\$19,899	\$20,604	\$20,579	\$16,981	\$13,034
Total	\$247,391	\$252,973	\$212,568	\$174,484	\$179,831	\$160,802	\$171,570	\$160,185	\$191,684	\$210,269	\$196,694

10-Year Water CIP Outlook



- 1.6% increase in 10-year total from FY2023-2027CIP (\$188,168)



Financial figures in \$1,000s and rounded

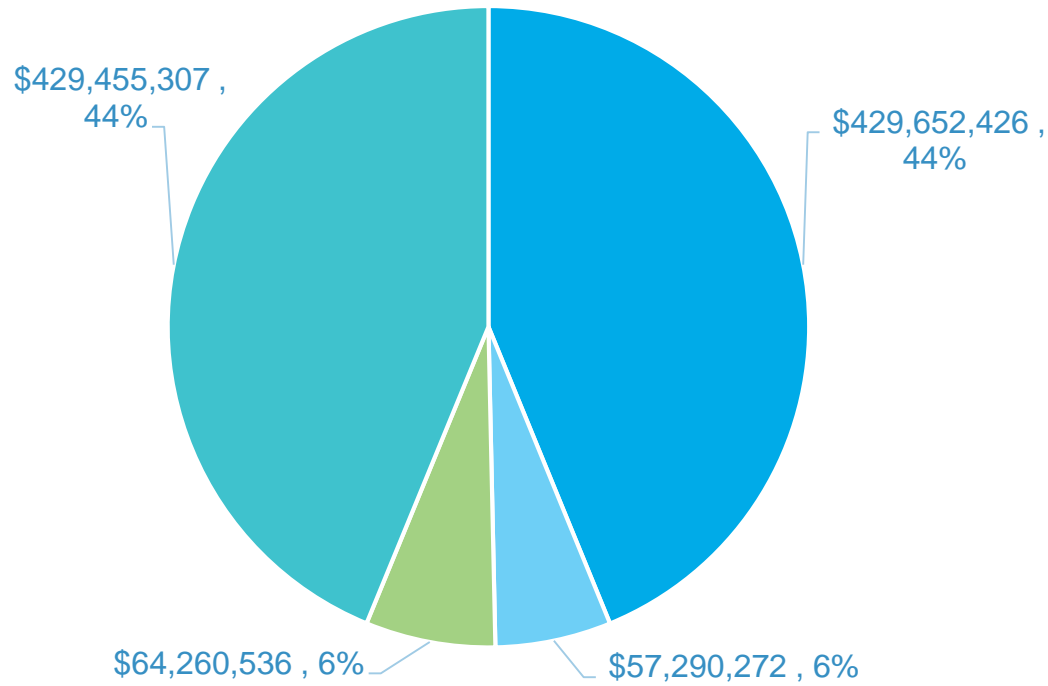
WATER PROJECTS W/ SCHEDULE SHIFT => 2 YRS.

- Ten total water projects with a schedule start change of 2 years or more

CIP #	CIP & Title	Variance in Years
122003	Water Works Park to Northeast Transmission Main	10
122017	7 Mile/Nevada Transmission Main Rehab and Carrie/Nevada Flow Control Station	10
132012	Ypsilanti Booster Pumping Station Improvements	8
112003	Northeast Water Treatment Plant High-Lift Pumping Station Improvements	7
113003	Southwest Water Treatment Plant, Low- and High-Lift Pumping Station, Flocculation and Filtration System Improvements	7
111008	Lake Huron Water Treatment Plant, Architectural Programming for Laboratory and Admin Building Improvements	6
114011	Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements	5
114018	Springwells Water Treatment Plant - Service Building Electrical Substation and Miscellaneous Improvements	5
113007	Southwest Water Treatment Plant Architectural and Building Mechanical Improvements	4
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements (Contracts B and D)	2

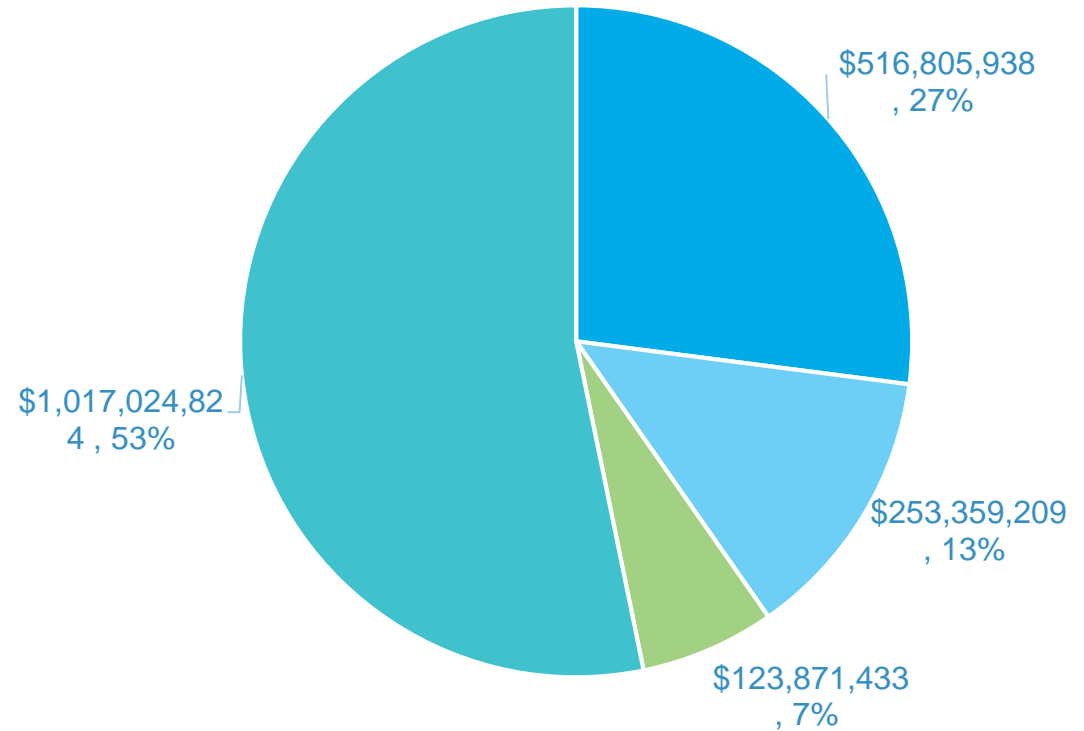
WATER SYSTEM STATISTICS PROJECTS BY TYPE

Water Project 2024 - 2028



■ Transmission ■ Pumps ■ Storage ■ Treatment

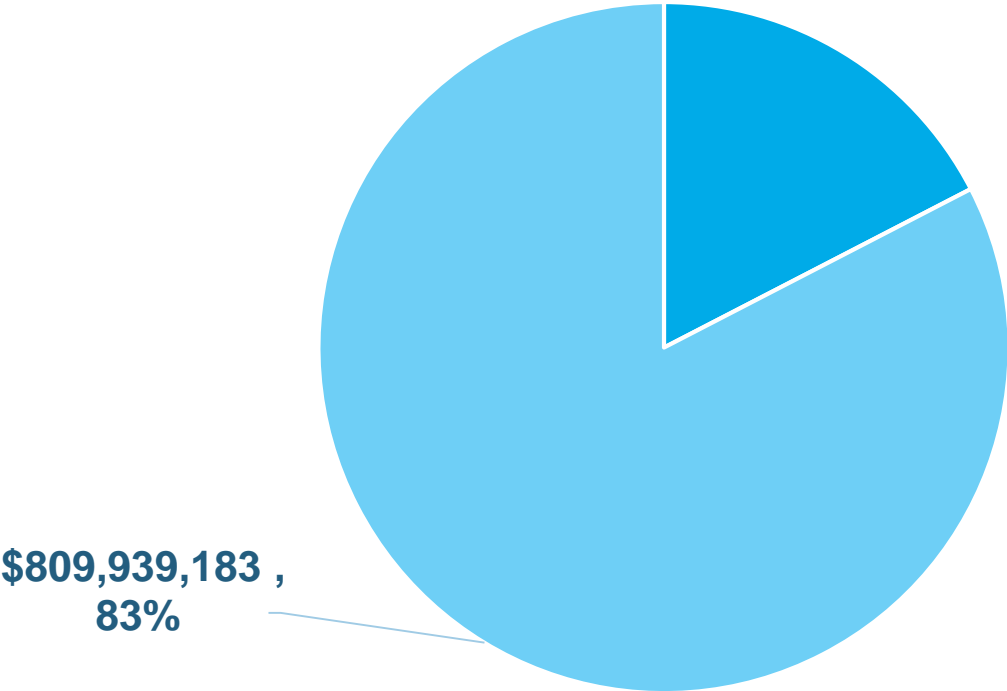
Water Projects 2024 - 2033



■ Transmission ■ Pumps ■ Storage ■ Treatment

WATER SYSTEM STATISTICS REDUNDANCY PROJECTS

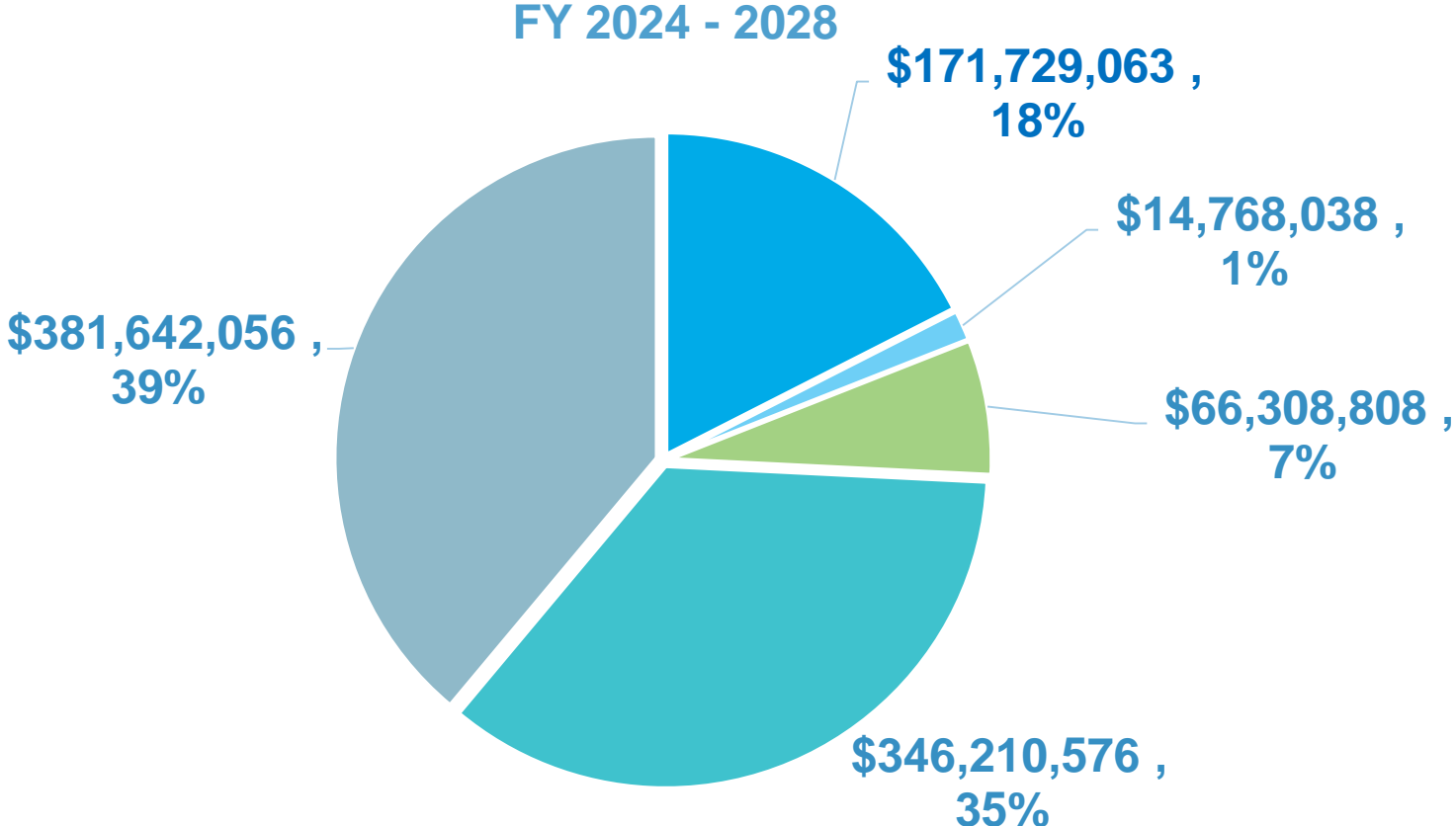
FY 2024 - 2028



■ Redundant

WATER SYSTEM STATISTICS

PROJECTS STATUS



- Active (Pre Procurement and Procurement)
- Future Planned - Ten-Year CIP
- Future Planned - Within 5 Year Plan
- Project Execution - Construction
- Project Execution - Design

NEW WATER PROJECTS WITHIN 5 YEARS

- 3 new water projects were added to the FY 2024-2028 CIP

CIP #	Title	Total Project \$	Design Start	Construction Start	Construction End
112007	NEWTP-Header Galleries and Wash Water Building Structural Repair	\$ 6,685,115	FY23	FY24	FY27
113009	SW Flight and Chain Upgrades	\$ 3,027,222	N/A**	FY22	FY24
170904*	Wholesale Water Meter pit Rehabilitation and Meter Upgrade – Phase II	\$ 16,000,000	N/A**	FY23	FY28

* From Programs

** Construction only

FY 2024-2033 WASTEWATER SUMMARY



CIP Delivery Team

HIGH LEVEL SUMMARY OF SPENDING PLAN

PROJECTS WITH SIGNIFICANT ADJUSTMENTS*

WASTEWATER STATISTICS

NEW PROJECTS

**Delayed start*

FY 2024-2028 WASTEWATER SUMMARY

CIP Document	FY 2023	FY2024	FY2025	FY2026	FY2027	FY2028	5-Year Total
Approved Wastewater CIP FY 2023-2027	\$125,932	\$162,313	\$184,523	\$157,689	\$131,307	\$171,068	\$761,764
Draft Wastewater CIP FY 2024-2028		\$188,024	\$187,812	\$165,085	\$134,658	\$113,026	\$788,604
Difference (\$)		\$26	\$3	\$7	\$3	(\$58)	\$27
Difference (%)		16%	2%	5%	3%	-34%	4%

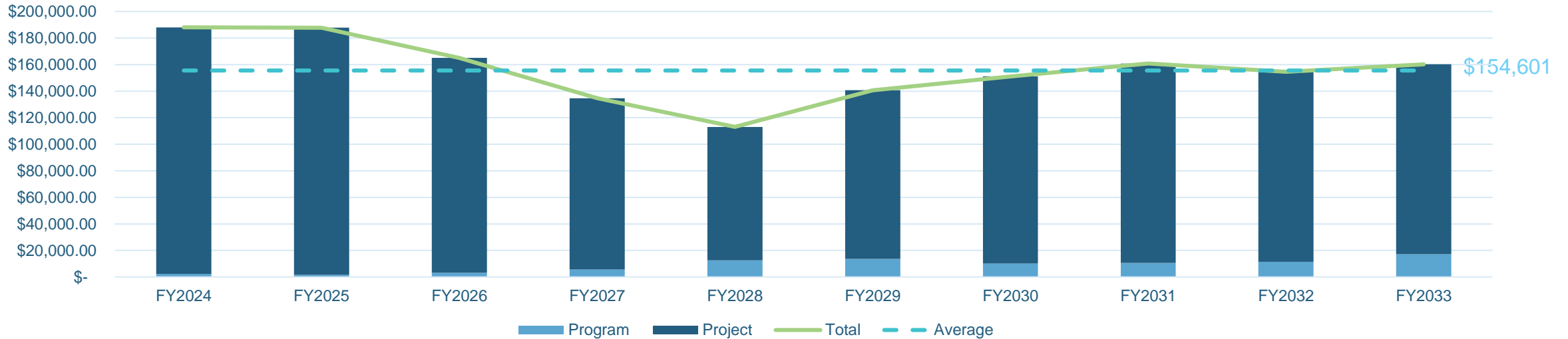
- ~ 3.5 % Increase 5-year total between FY23-27 & Proposed FY24-28 CIP
- Total 5-Year projected expenditures (FY24-28 is \$788,604)
- 5-year annual average \$157,721 (compared to \$152,353 from FY23-FY27)

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

FY2024-2033 10-YEAR WASTEWATER CIP OUTLOOK

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033
Projects	\$143,564	\$185,795	\$186,090	\$161,850	\$128,949	\$100,532	\$127,086	\$140,999	\$150,191	\$143,251	\$143,102
Programs	\$999	\$2,229	\$1,722	\$3,235	\$5,708	\$12,494	\$13,616	\$10,109	\$10,629	\$11,384	\$17,142
Total	\$144,563	\$188,024	\$187,812	\$165,085	\$134,658	\$113,026	\$140,701	\$151,108	\$160,820	\$154,635	\$160,245

10-Year WasteWater CIP Outlook



- ~12% increase in 10-year total from \$138,181 in FY2023-2027 CIP

Financial figures in \$1,000s and rounded



WASTEWATER PROJECTS W/ SCHEDULE SHIFT => 2 YRS.

- Ten (10) total water projects with a schedule start change of 2 years or more*

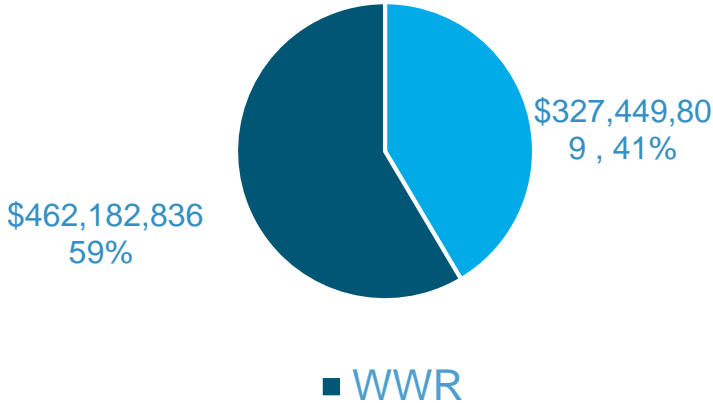
CIP #	CIP & Title	Variance in Years
233003	Rouge River In-system Storage Devices	11
270001	Pilot CSO Netting Facility	10
211005	WRRF PS No. 2 Improvements Phase II	6
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	6
211009	WRRF Rehabilitation of the Circular Primary Clarifier Scum Removal System	4
212009	WRRF Aeration Improvements 3 and 4	3
260901	Rehabilitation of HAZMAT Facility at WRRF	3
260903	WRRF Front Entrance Rehabilitation	3
260702	Pump Station Assets Updates	2
270002	Meldrum Sewer Diversion and VR-15 Improvements	2

WASTEWATER SYSTEM STATISTICS

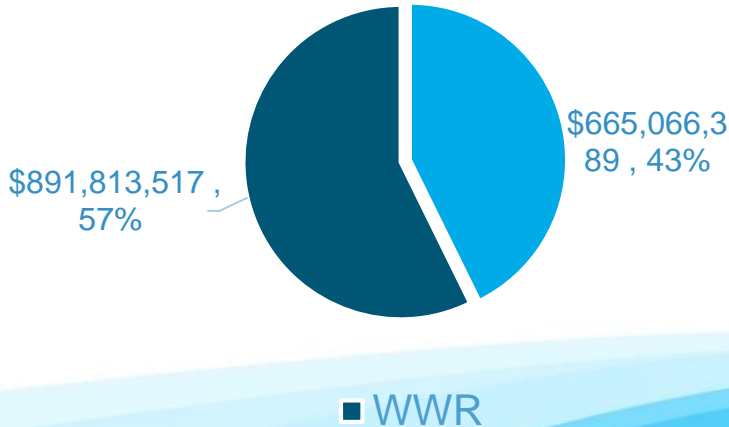
WET WEATHER RESILIENCY PROJECTS

CIP #	Title
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
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District
222002	Detroit River Interceptor (DRI) Evaluation and Rehabilitation
232002	Freud & Conner Creek Pump Station Improvements
260204	Conveyance System Engineering Services-1802575
260205	NWI Rehabilitation
260206	Conveyance System Repairs (Sewers)
260207	Rehabilitation of Woodward Sewer Systems
260622	CSO Emergency Generator Improvements
260623	CSO Baby Creek Screen Rehabilitation
260701	Conveyance System Infrastructure Improvements
270004	Oakwood and Leib CSO Facilities Improvement Project
270006	CSO Facilities Improvements II
277001	Baby Creek Outfall Improvements Project

WET WEATHER RESILIENCY Projects 2024 -2028



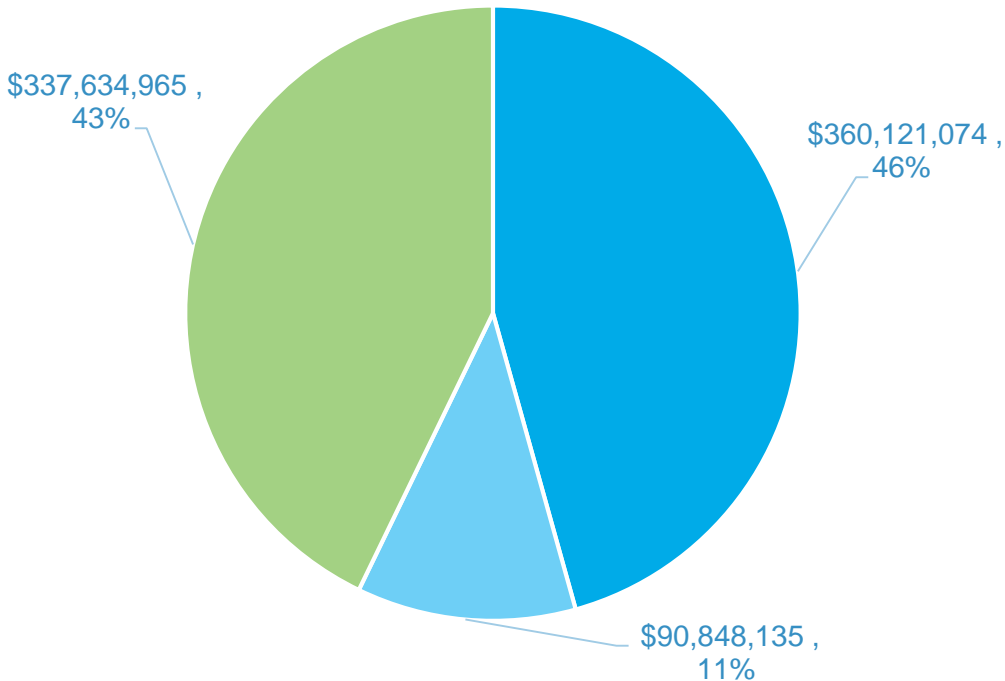
Projects 2024 - 2033



WASTEWATER SYSTEM STATISTICS

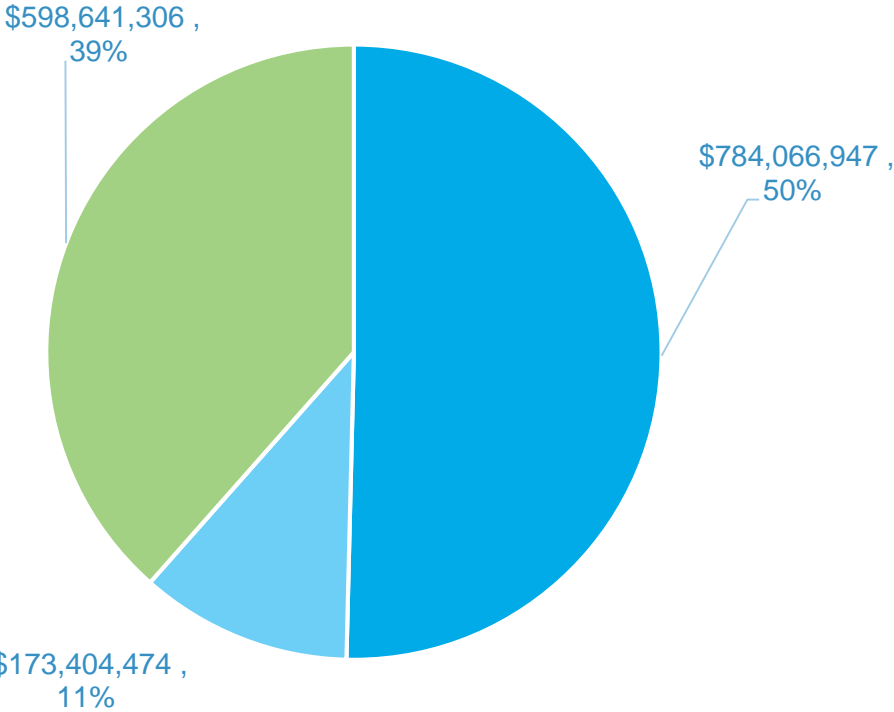
PROJECTS BY TYPE

Wastewater Projects 2024 - 2028



■ Conveyance/Pumps ■ CSO ■ Treatment

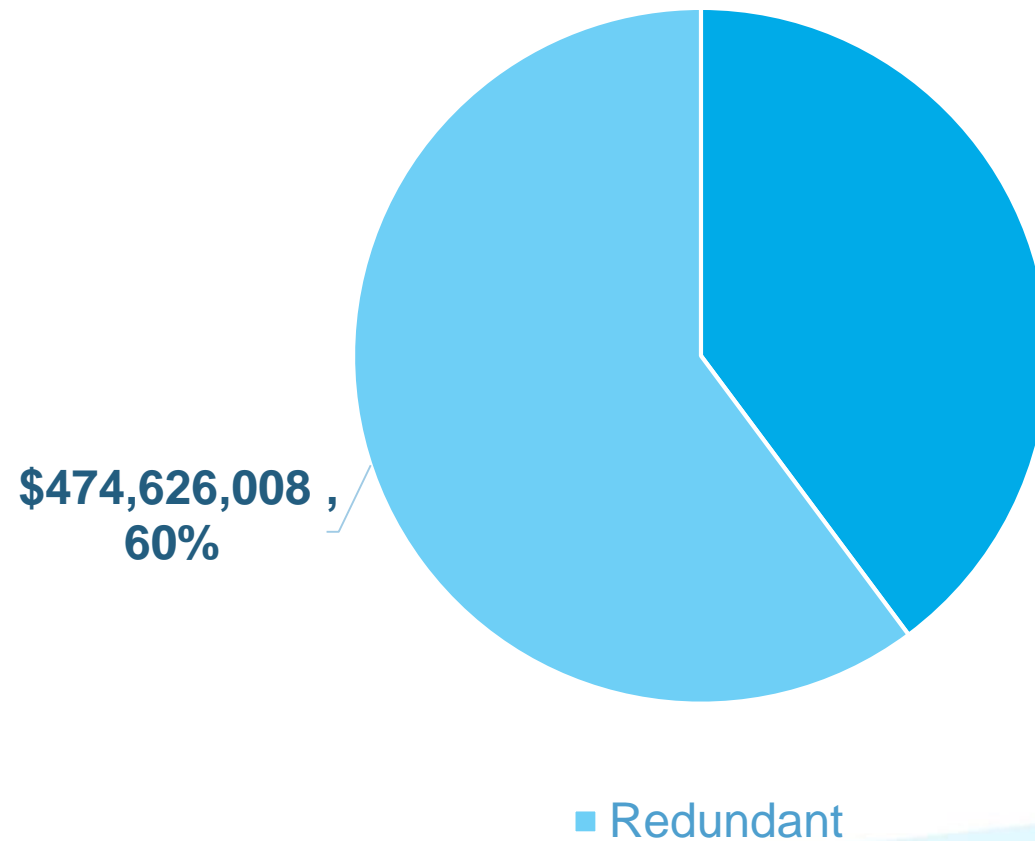
Wastewater Project 2024 - 2033



■ Conveyance/Pumps ■ CSO ■ Treatment

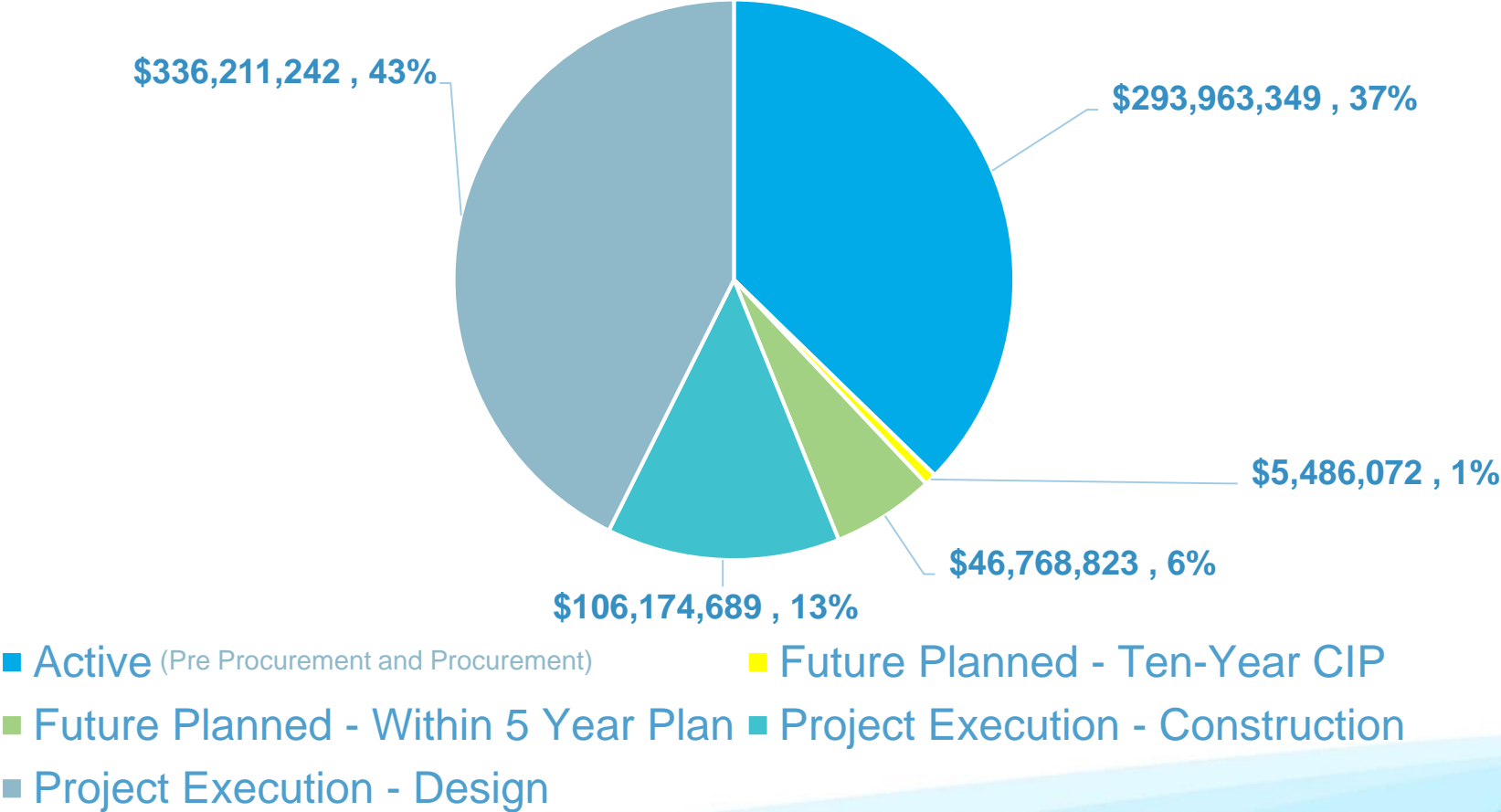
WASTEWATER SYSTEM STATISTICS REDUNDANCY PROJECTS

FY 2024 - 2028



WASTEWATER SYSTEM STATISTICS PROJECTS STATUS

FY2024 - 2028



WASTEWATER NEW PROJECTS WITHIN 5 & 10 YEARS

- 6 new wastewater projects were added to the FY 2024-2033 CIP

CIP #	Title	Total Project \$	Design Start	Const. Start	Const. End
222008	North Interceptor East Arm (NIEA) 7 Mile Road Diversion Structure	\$ 5,000,000	N/A**	FY23	FY24
*260210	Rehabilitation of GLWA Sewers; Ashland Relief, Linwood, Lonyo, Second Avenue, and Shiawassee	\$ 37,234,831	FY23	FY29	FY31
*260802	2022 WRRF Roof Improvements Project	\$ 4,845,330	FY22	FY24	FY25
*260904	WRRF 3rd Floor Renovation	\$ 3,420,512	FY23	FY25	FY27
*260905	WRRF Plumbing Shop Renovation - 260905	\$ 2,188,543	FY22	FY24	FY25
276002	Replacement of Make-up Air Unit No.2 at Conner Creek CSO Facility	\$ 312,822	N/A**	FY23	FY23

* Project created out of a program

** Construction only

WATER AND WASETWATER PROJECTS WITH STATUS CHANGE



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CLOSED

PENDING COSEOUT

RECLASSIFIED

CANCELED

PROJECT STATUS CHANGES



CLOSED

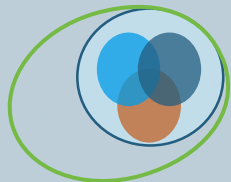
CIP Area	CIP #	Title
Wastewater	211001	WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery
	214001	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations
	216007	DTE Primary Electric 3rd Feed Supply to WRRF
	260504	Phase 2 Outfalls- 1900796
	260613	Baby Creek HVAC Improvements
	260615	Puritan Fenkell & Leib Site Improvements
	260621	Conner Creek Dike Improvements
	341002	Security Infrastructure Improvements for Wastewater Facilities
Water	111007	Lake Huron Water Treatment Plant, Raw Sludge Clarifier and Raw Sludge Pumping System Improvements
	341001	Security Infrastructure Improvements on Water Facilities

PENDING CLOSEOUT

CIP Area	CIP #	Title
Wastewater	260603	Conner Creek CSO RTB Automation Improvements
	260620	Baby Creek Roof Replacement
Water	170109	GLWA-CS-187: FK Eng: Raw Water Intake

RECLASSIFIED & CANCELLED

CIP Area	CIP #	Title	Project Status	New CIP #
Wastewater	260617	St. Aubin Chemical Disinfection Improvements	Reclassified	270006
	270005	CSO Facility Safety Improvements and Building Rehabilitation	Reclassified	270006
Water	113008	SWP Reservoir Replacement	Cancelled	



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ESCALATION



ESCALATION

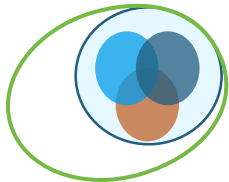


CIP Delivery Team

ECONOMIC TASK FORCE REPORT

MANAGEMENT OF CIP

ECONOMIC TASK FORCE REPORT



CIP Delivery Team



MANAGEMENT OF CIP

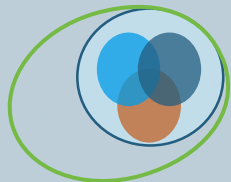


CIP Delivery Team

- 💧 Inflation is not typically included in GLWA's CIP forecasts

- 💧 Assumptions
 - 💧 Projects under contract (Design and Construction): Escalation/inflation is included in contract cost and updated opinion of cost
 - 💧 Future projects: candidates for escalation

- 💧 Actions:
 - 💧 Close monitoring of CIP at a project and portfolio levels
 - 💧 Proactive tracking of escalation impacts
 - 💧 Identification of mitigation measures based on portfolio performance and project status



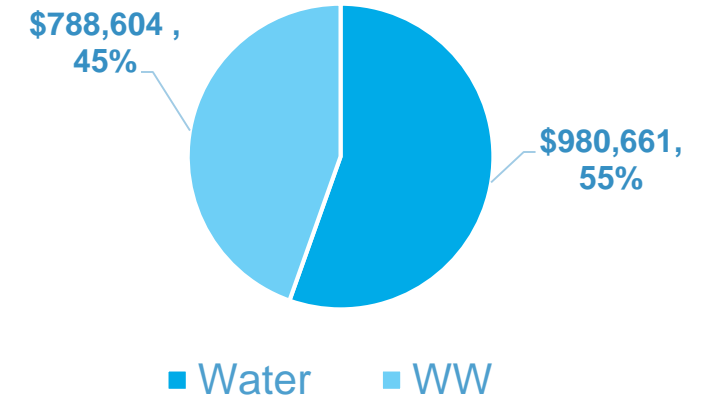
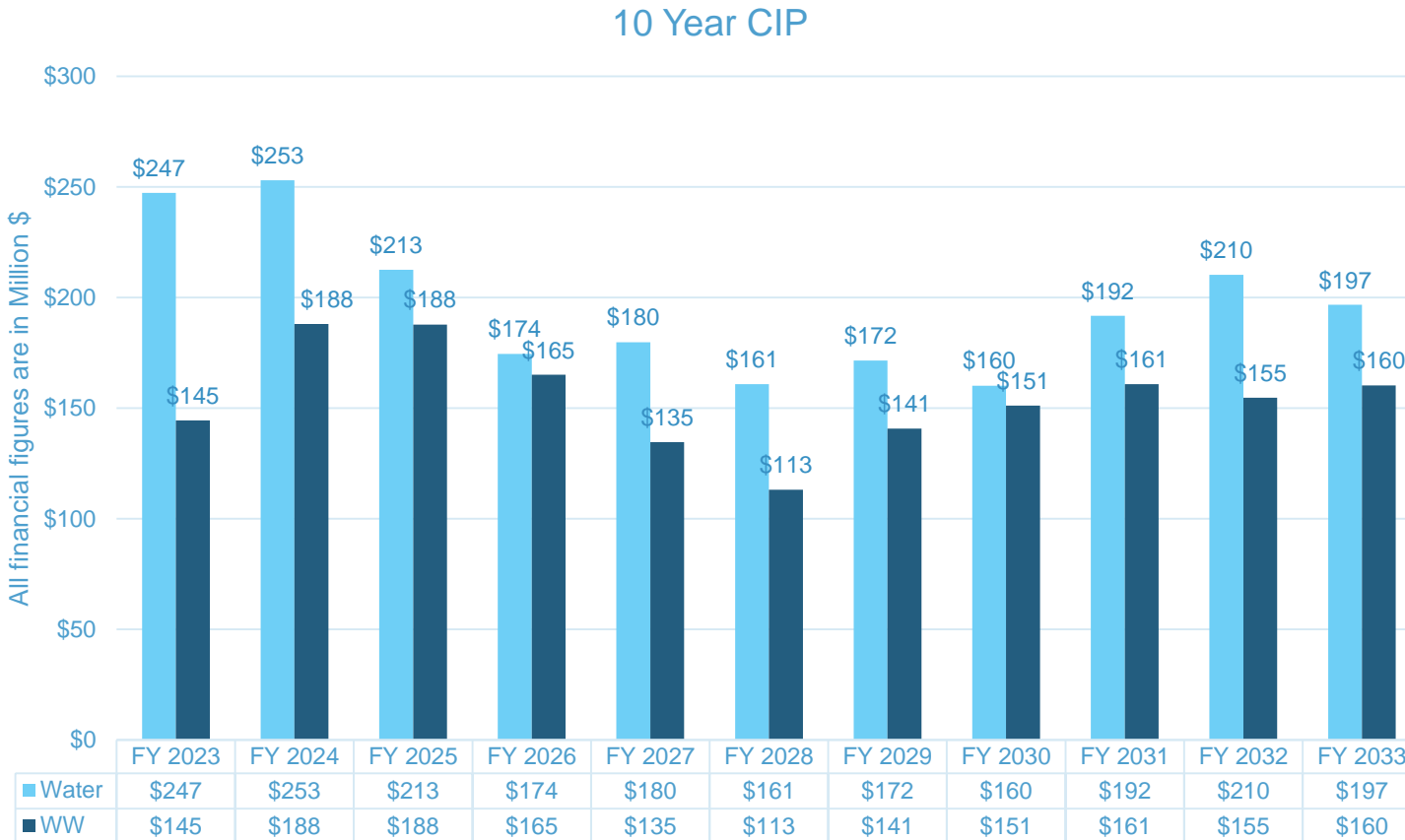
CIP Delivery Team

RECAP & NEXT STEPS

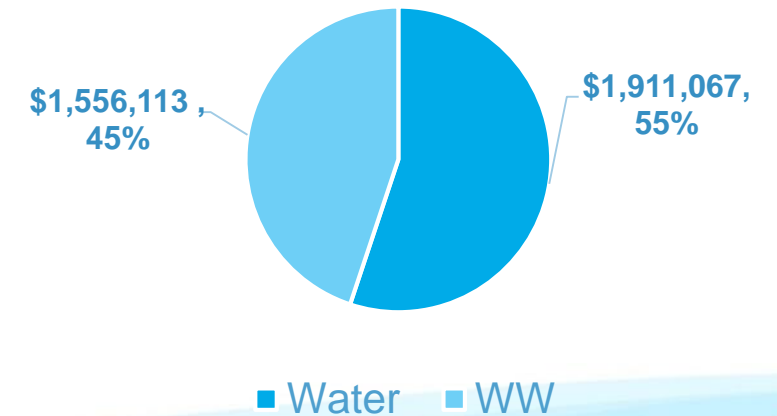


WATER & WASTEWATER CIP FY 24-33 (10YR PROJECTIONS)

CIP 2024-2028 by Business Unit



CIP 2024-2033 by Business Unit

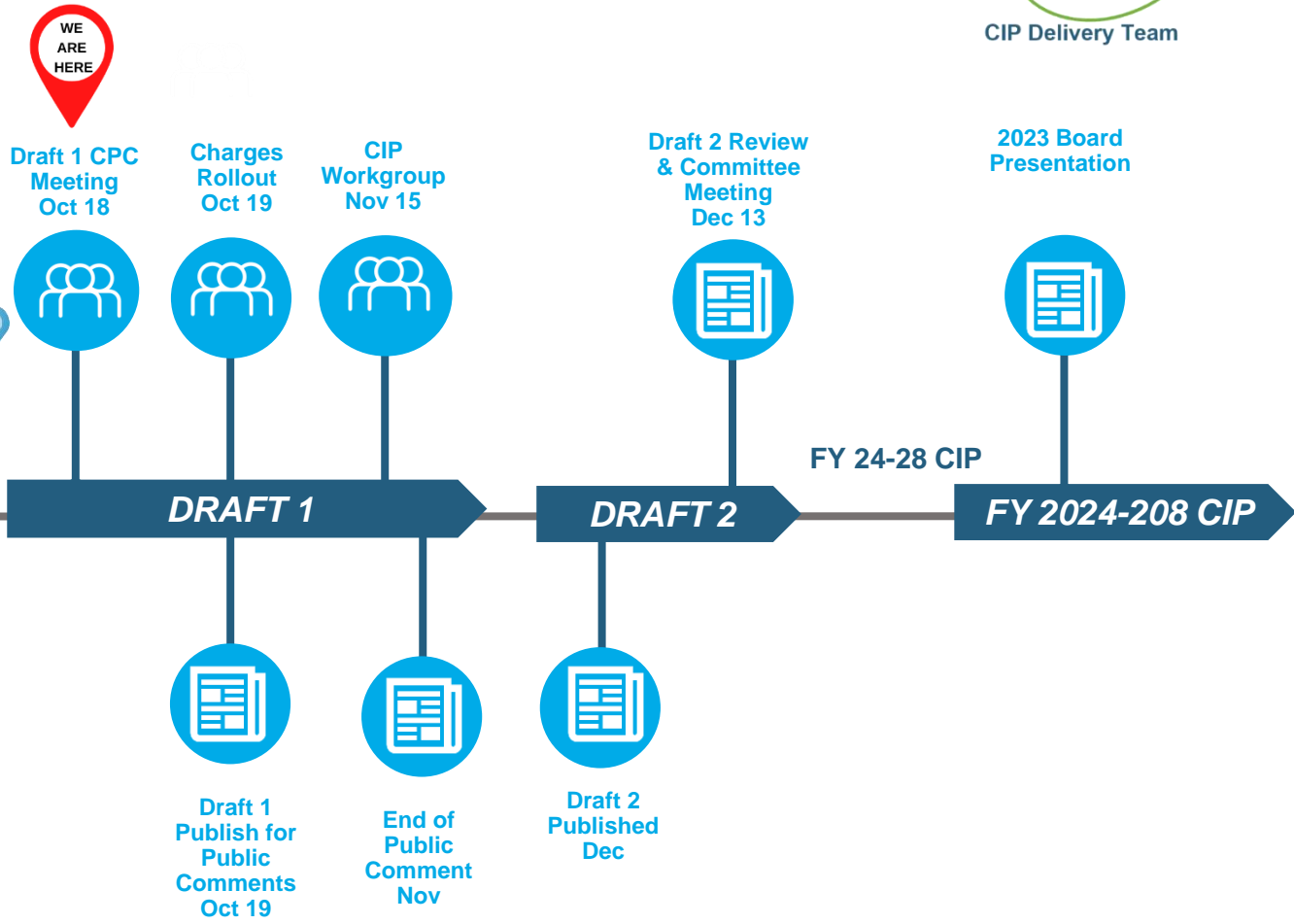
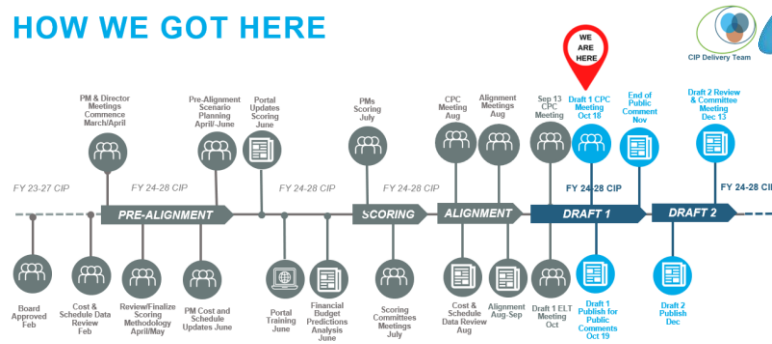


Financial figures in \$1,000s

FY 24–28 CIP WHAT'S NEXT



HOW WE GOT HERE

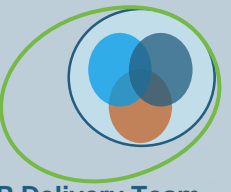


KEY TAKEAWAYS



CIP Delivery Team

- 💧 **FY24-28 CIP Discussion Draft #1 Complete**
- 💧 **CIP development methodology and prioritization are consistent with past practices**
- 💧 **CIP is in alignment with the GLWA Financial Plan**
- 💧 **Inflationary increases and supply chain delays have required GLWA to significantly modify the scope & schedule of many past, FY23-27 CIP projects**
- 💧 **GLWA is requesting comments and questions to the FY24-28 CIP by November 18, 2022**
- 💧 **Board members wanting individual 1 on1 meetings for further discussion, please contact: Dima.El-Gamal@glwater.org**



CIP Delivery Team

THANK YOU

