



# The Great Lakes Water Authority Capital Improvement Plan 2020-2024

# GLWA 5-YEAR CIP

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- CIP development annual process
- Risk Management matrix
- Water and Wastewater projects
- Cost pool allocations
- 10-year Water and Wastewater projections

# CIP DEVELOPMENT AND PROCESS



## SECTION 2 CALENDAR

The schedule below is for planning purposes. It reflects the past actual dates as well as projected future dates and is subject to change. Specific approval dates and coordination with the GLWA Board of Directors is necessary to identify key milestones leading up to the ultimate approval of the 2020-2024 CIP.

Date	Description
August 20, 2018	Distribute & Train Team Members on Business Case Evaluation Database
September 26, 2018	Team Members BCE's are Due
October 1 & 3, 2018	Water and Wastewater Review Committee Meetings
October 18, 2018	Executive Leadership Team Reviews BCE's & Modifications to CIP
October 25, 2018	First Member Partner Review of CIP – Version 1 at Charges Rollout Meeting #1
October 29, 2018	First GLWA CIP Committee Review of CIP – Version 1
November 19, 2018	Member Partner & Board Comments Due
November 30, 2018	GLWA CIP Committee Meeting
December 18, 2018	Second Member Partner Review of CIP – Version 2 at AM/CIP Member Partner Outreach Work Group
December 18, 2018	Second GLWA CIP Committee Member Partner Review of CIP – Version 2
1 <sup>st</sup> Quarter 2019	Align the Board approval of CIP and budget.
July 1, 2019	Effective Date of 2020- 2024 CIP

- Annual Cyclical Process
- Collaboration with Wholesale Customers
- Increasingly reliant on analytics
- Risk reduction emphasis

# GLWA WATER GREATER THAN \$5M



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## 4.1. Water

**Table I-3. Water Projects with 2020 Projected Spend Greater than \$5M. (Thousands of dollars)**

CIP #	Project Title	Lifetime Actual Thru FY18	FY19	Projected Expenditures							
				FY20	FY21	FY22	FY23	FY24	FY25+	2020- 24 CIP Total	Project Total
122006	Wick Road Water Transmission Main Construction	126	1,370	18,028	12,334	60	-	-	-	30,422	31,918
115001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	682	899	17,333	17,333	17,333	-	-	-	51,999	53,580
111009	Lake Huron Water Treatment Plant, Two New High-Lift Pumps, Water Production Flow Meter, and Select Yard Piping Improvements	-	16	9,030	10,030	7,030	-	-	-	26,090	26,106
122005	Schoolcraft Road Water Transmission Main Replacement	4	180	8,100	9,145	633	-	-	-	17,878	18,062
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	498	2,607	5,985	9,302	13,724	13,724	26,145	42,831	68,880	114,816
116002	Pennsylvania, Springwells and Northeast Raw Water Supply Tunnel Improvements	2,178	7,513	5,467	5,467	5,467	3,998	-	-	20,399	30,090
114011	Springwells Water Treatment Plant Steam, Condensate Return, and Compressed Air Piping Improvements	473	3,109	5,392	7,754	8,261	-	-	-	21,407	24,989
170800	System-Wide Finished Water Reservoir Inspection, Design and Rehabilitation	-	482	5,128	5,211	5,182	3,888	5,495	33,778	24,904	59,164

# GLWA WASTEWATER GREATER THAN \$5M



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## 4.2. Wastewater

Table I-4. Wastewater Projects with 2020 Projected Spend Greater than \$5M

CIP #	Project Title	Lifetime Actual Thru FY18	FY19	Projected Expenditures							
				FY20	FY21	FY22	FY23	FY24	FY25+	2020- 24 CIP Total	Project Total
232001	Fairview Pumping Station - Replace Four Sanitary Pumps	1,551	6,000	18,000	4,891	-	-	-	-	22,891	30,442
232002	Freud & Conner Creek Pump Station Improvements	5,110	1,984	17,029	13,014	50,014	50,014	25,007	257	155,078	162,429
260000	CSO Outfall Rehabilitation	9	4,000	15,102	17,947	10,926	15,102	15,102	11,000	74,179	89,188
260200	Sewer and Interceptor Rehabilitation Program	13,555	8,609	15,000	15,000	15,000	15,000	15,000	95,000	75,000	192,164
222003	North Interceptor East Arm (NIEA) Evaluation and Rehabilitation	-	500	15,000	14,500	-	-	-	-	29,500	30,000
222000	Detroit River Interceptor (DRI) Evaluation and Rehabilitation	2647	9,424	10,000	10,000	10000	1000	1000	5000	32,000	49,071
213007	WRRF Modification to Incinerator Sludge Feed Systems at Complex -II	871	7,159	8,711	3,308	-	-	-	-	12,019	20,049
211001	WRRF Rehabilitation of Primary Clarifiers Rectangular Tanks, Drain Lines, Electrical/Mechanical Building and Pipe Gallery	25098	18,724	7,982	3,054	-	-	-	-	11,036	54,858
213002	WRRF Rehabilitation of Central Offload Facility	982	4,204	7,696	3297	-	-	-	-	10,993	16,179
214001	WRRF Relocation of Industrial Waste Control Division and Analytical Laboratory Operations	573	2,828	7,567	-	-	-	-	-	7,567	10,968
232000	Northeast Pumping Station	-	1,000	7,000	10,500	10,500	2,500	-	-	30,500	31,500
260600	CSO FACILITIES IMPROVEMENT PROGRAM	481	8,442	5,604	4,553	5,825	10,325	13,361	15,000	39,668	63,591

# LARGEST GLWA WATER AND WASTEWATER PROJECTS



## 3.1. Water

**Table I-1. Water Projects with 2020-2024 CIP Total Greater than \$30M**

CIP #	Project Title	Lifetime Actual Thru FY18	FY19	Projected Expenditures							
				FY20	FY21	FY22	FY23	FY24	FY25+	2020-24 CIP Total	Project Total
122000	WWP to NE Transmission Main	1,655	1,121	871	15,786	24,115	29,615	29,994	30,115	100,381	133,272
122004	96-inch Main Relocation, Isolation Valves Installations, and New Parallel Main	1,130	837	5,000	6,000	26,453	35,886	23,453	33,907	96,792	132,666
114002	Springwells Water Treatment Plant, Low-Lift and High-Lift Pumping Station Improvements	498	2,607	5,985	9,302	13,724	13,724	26,145	42,831	68,880	114,816
114001	Water Works Park Water Treatment Plant Yard Piping, Valves and Venturi Meters Replacement	682	899	17,333	17,333	17,333	-	-	-	51,999	53,580
122000	Downriver Transmission Main Loop	-	-	297	964	3,051	10,763	22,122	-	37,197	37,197
132010	West Service Center Pumping Station - Reservoir, Reservoir Pumping, and Division Valve Upgrades	-	-	2,620	7,430	15,570	8,910	2,606	-	37,136	37,136
122006	Wick Road Water Transmission Main Construction	126	1,370	18,028	12,334	60	-	-	-	30,422	31,918

## 3.2. Wastewater

**Table I-2. Wastewater Projects with 2020-2024 CIP Total Greater than \$30M**

CIP #	Project Title	Lifetime Actual Thru FY18	FY19	Projected Expenditures							
				FY20	FY21	FY22	FY23	FY24	FY25+	2020-24 CIP Total	Project Total
232002	Freud & Conner Creek Pump Station Improvements	5,110	1,984	17,029	13,014	50,014	50,014	25,007	257	155,078	162,429
260200	Sewer and Interceptor Rehabilitation Program	13,555	8,609	15,000	15,000	15,000	15,000	15,000	95,000	75,000	192,164
260000	CSO Outfall Rehabilitation	9	4,000	15,102	17,947	10,926	15,102	15,102	11,000	74,179	89,188
260000	CSO FACILITIES IMPROVEMENT PROGRAM	481	8,442	5,604	4,553	5,825	10,325	13,361	15,000	39,668	63,591
222002	Detroit River Interceptor (DRI) Evaluation & Rehabilitation	2,647	9,424	10,000	10,000	10,000	1,000	1,000	5,000	32,000	49,071
232003	Northeast Pumping Station	-	1,000	7,000	10,500	10,500	2,500	-	-	30,500	31,500
222001	Oakwood District Intercommunity Relief Sewer Modification at Oakwood District	-	-	-	-	3,800	10,077	10,077	14,077	23,954	38,031

# GLWA COST POOL RESPONSIBILITY



**Table III-1. Cost Allocation: Water**  
Financial figures are in thousands of dollars (\$1,000's).

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Projected Capital Expenditures							Percent of Five Year Total
Cost Allocation	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total FYs 2020-2024	
Water							
Common-to-all	\$ 139,247	\$ 162,599	\$ 178,598	\$ 164,906	\$ 186,666	\$ 832,016	98%
Suburban Only	4,000	4,000	3,997	4,100	4,200	20,297	2%
Grand Total	\$ 143,247	\$ 166,599	\$182,595	\$ 169,006	\$ 190,866	\$ 852,313	100%

**Table III-2. Cost Allocation: Wastewater**  
Financial figures are in thousands of dollars (\$1,000's).

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

Projected Capital Expenditures							Percent of Five Year Total
Cost Allocation	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total FYs 2020-2024	
Wastewater							
Common-to-all	\$ 133,876	\$ 102,877	\$ 133,852	\$ 146,559	\$ 116,798	\$ 633,962	86%
OMID	22,000	25,000	10,500	2,500	-	60,000	8%
CSO 83/17	5,604	4,553	5,825	10,325	13,361	39,668	5%
Grand Total	\$ 161,480	\$ 132,430	\$150,177	\$ 159,384	\$ 130,159	\$ 733,630	100%



# FINANCE: PROJECT STATUS ANALYSIS



**Table III-5. Project Status Analysis: Water**  
Financial figures are in thousands of dollars (\$1,000's).

Projected Capital Expenditures						Total FYs 2020-2024	Percent of Total
Phase Status	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024		
<b>Water</b>							
Active	\$ 63,984	\$ 53,846	\$ 28,753	\$ 11,666	\$ 11,427	\$ 169,676	20%
Future Planned Start	70,575	107,254	153,342	156,840	178,439	666,450	78%
Under Procurement	8,688	5,499	500	500	1,000	16,187	2%
<b>Grand Total</b>	<b>\$143,247</b>	<b>\$166,599</b>	<b>\$182,595</b>	<b>\$169,006</b>	<b>\$190,866</b>	<b>\$ 852,313</b>	<b>100%</b>

**Table III-6. Project Status Analysis: Wastewater**  
Financial figures are in thousands of dollars (\$1,000's).

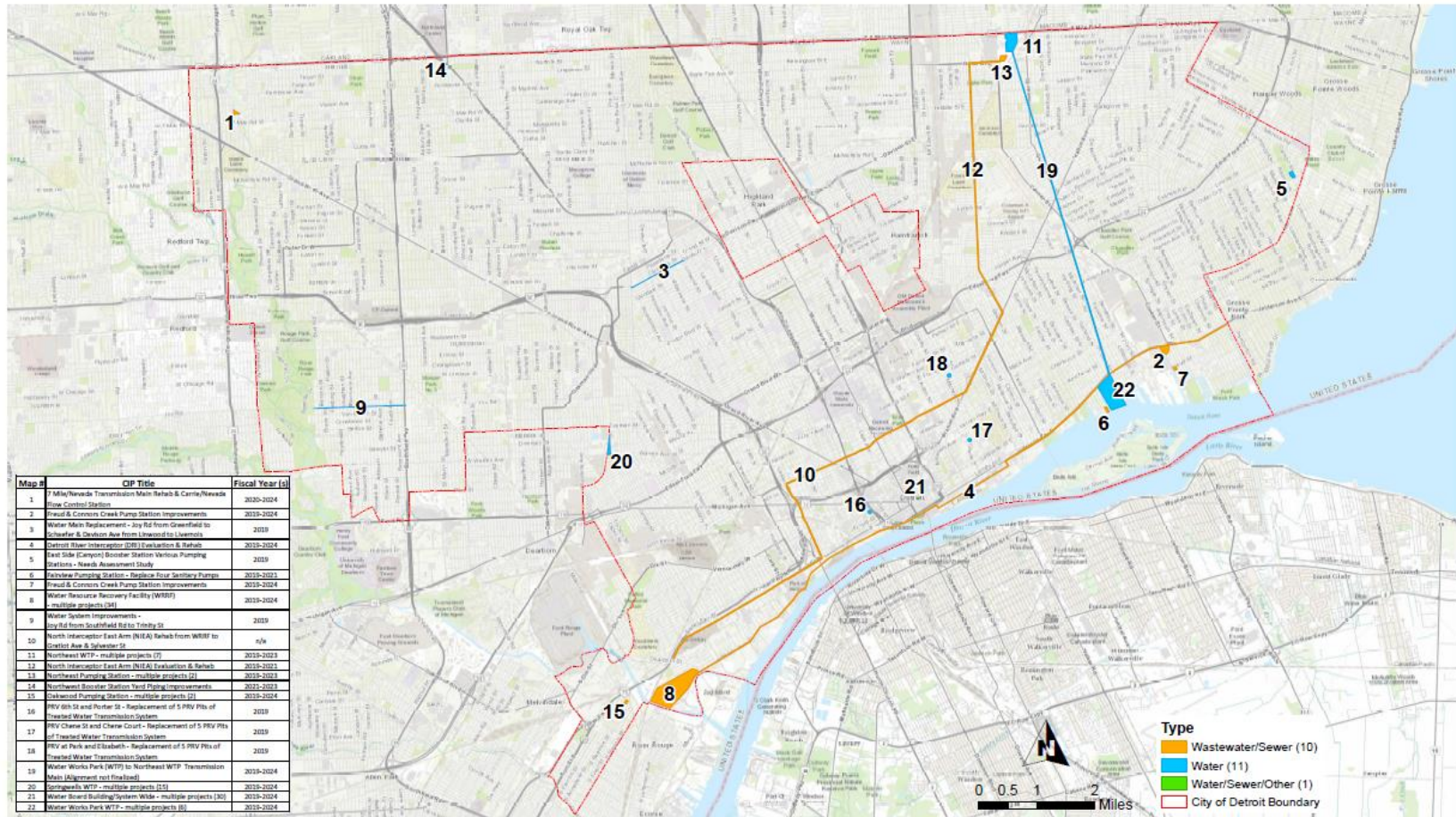
Projected Capital Expenditures						Total FYs 2020-2024	Percent of Total
Phase Status	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024		
<b>Wastewater</b>							
Active	\$ 65,724	\$ 34,879	\$ 12,705	\$ 2,541	\$ 2,070	\$ 117,919	16%
Future Planned Start	90,864	93,716	137,472	156,843	128,089	606,984	83%
Pending Close-out	500	-	-	-	-	500	0%
Under Procurement	4,392	3,835	-	-	-	8,227	1%
<b>Grand Total</b>	<b>\$161,480</b>	<b>\$132,430</b>	<b>\$150,177</b>	<b>\$159,384</b>	<b>\$130,159</b>	<b>\$ 733,630</b>	<b>100%</b>



# GLWA CIP PROJECTS IN DETROIT



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## CURRENT GLWA 2019-23 (FY 2020-24) CIP PROJECTS - INSIDE CITY OF DETROIT

Note: 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.

# GLWA CIP PROJECTS IN DETROIT



Map #	CIP Title	Fiscal Year (s)
1	7 Mile/Nevada Transmission Main Rehab & Carrie/Nevada Flow Control Station	2020-2024
2	Freud & Connors Creek Pump Station Improvements	2019-2024
3	Water Main Replacement - Joy Rd from Greenfield to Schaefer & Davison Ave from Linwood to Livernois	2019
4	Detroit River Interceptor (DRI) Evaluation & Rehab	2019-2024
5	East Side (Canyon) Booster Station Various Pumping Stations - Needs Assessment Study	2019
6	Fairview Pumping Station - Replace Four Sanitary Pumps	2019-2021
7	Freud & Connors Creek Pump Station Improvements	2019-2024
8	Water Resource Recovery Facility (WRRF) - multiple projects (34)	2019-2024
9	Water System Improvements - Joy Rd from Southfield Rd to Trinity St	2019
10	North Interceptor East Arm (NIEA) Rehab from WRRF to Gratiot Ave & Sylvester St	n/a
11	Northeast WTP - multiple projects (7)	2019-2023
12	North Interceptor East Arm (NIEA) Evaluation & Rehab	2019-2021
13	Northeast Pumping Station - multiple projects (2)	2019-2023
14	Northwest Booster Station Yard Piping Improvements	2021-2023
15	Oakwood Pumping Station - multiple projects (2)	2019-2024
16	PRV 6th St and Porter St - Replacement of 5 PRV Pits of Treated Water Transmission System	2019
17	PRV Chene St and Chene Court - Replacement of 5 PRV Pits of Treated Water Transmission System	2019
18	PRV at Park and Elizabeth - Replacement of 5 PRV Pits of Treated Water Transmission System	2019
19	Water Works Park (WTP) to Northeast WTP Transmission Main (Alignment not finalized)	2019-2024
20	Springwells WTP - multiple projects (15)	2019-2024
21	Water Board Building/System Wide - multiple projects (30)	2019-2024
22	Water Works Park WTP - multiple projects (6)	2019-2024

# Questions?

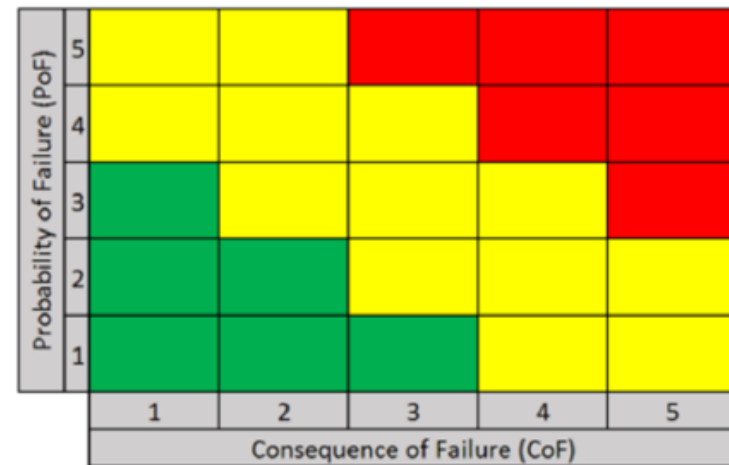
# GLWA RISK PROCESS



**Table II-6. Risk Criteria.**

	Criteria	Primary Risk Driver
1	Condition	Probability
2	Performance (Service Level / Reliability)	Probability
3	Regulatory (Environmental/Legal)	Consequence
4	O&M	Probability
5	Public Health & Safety	Consequence
6	Public Benefit	Consequence
7	Financial	Consequence
8	Efficiency & Innovation	Consequence

**RISK MATRIX**



**Figure II-1. Risk Matrix.**

- Consequence of failure
- Probability of failure
- Reduce overall GLWA risk

# GLWA TEN-YEAR OUTLOOK: WATER



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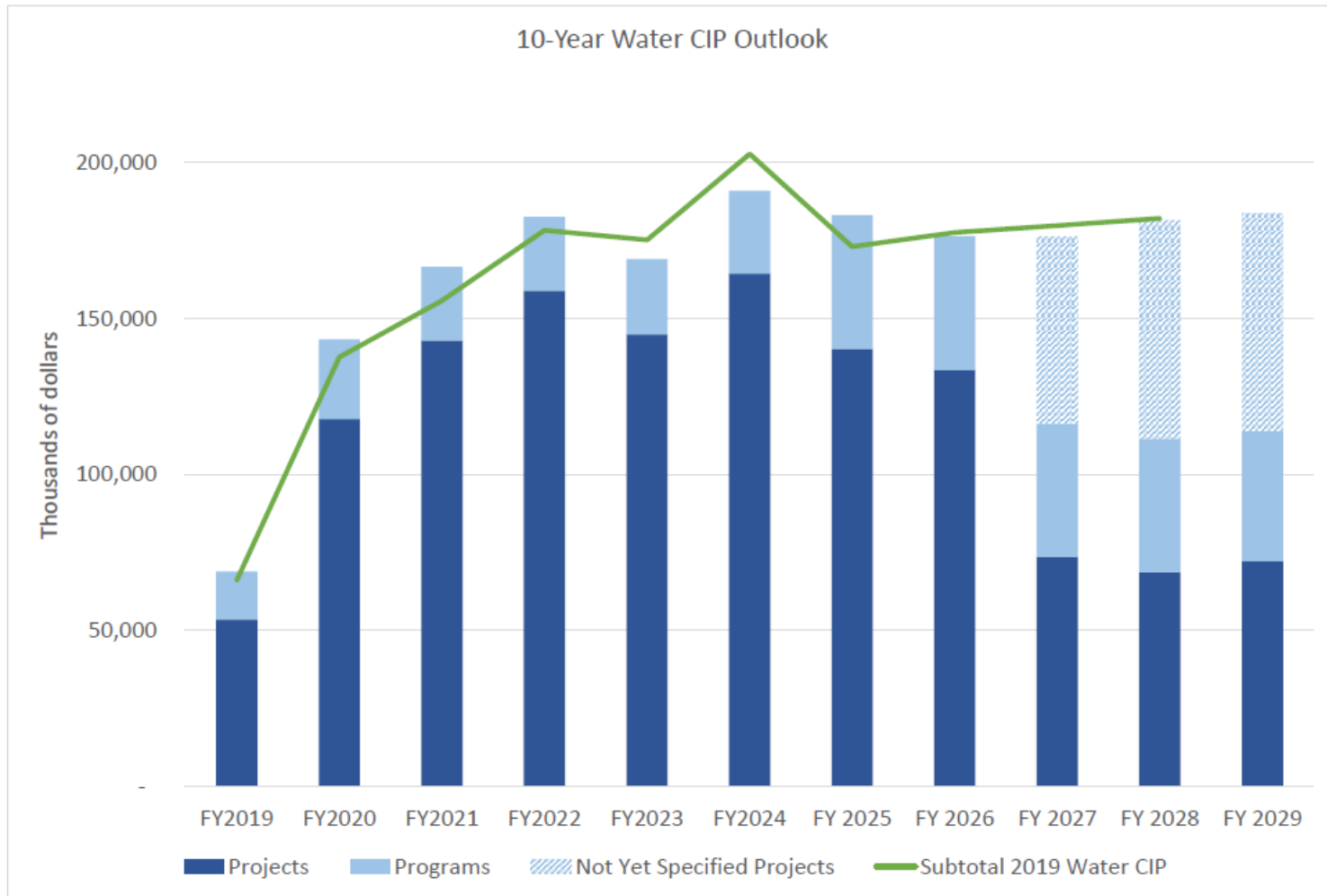


Figure VII-1. 10-Year Water CIP Outlook Chart

# GLWA TEN-YEAR OUTLOOK: WASTEWATER

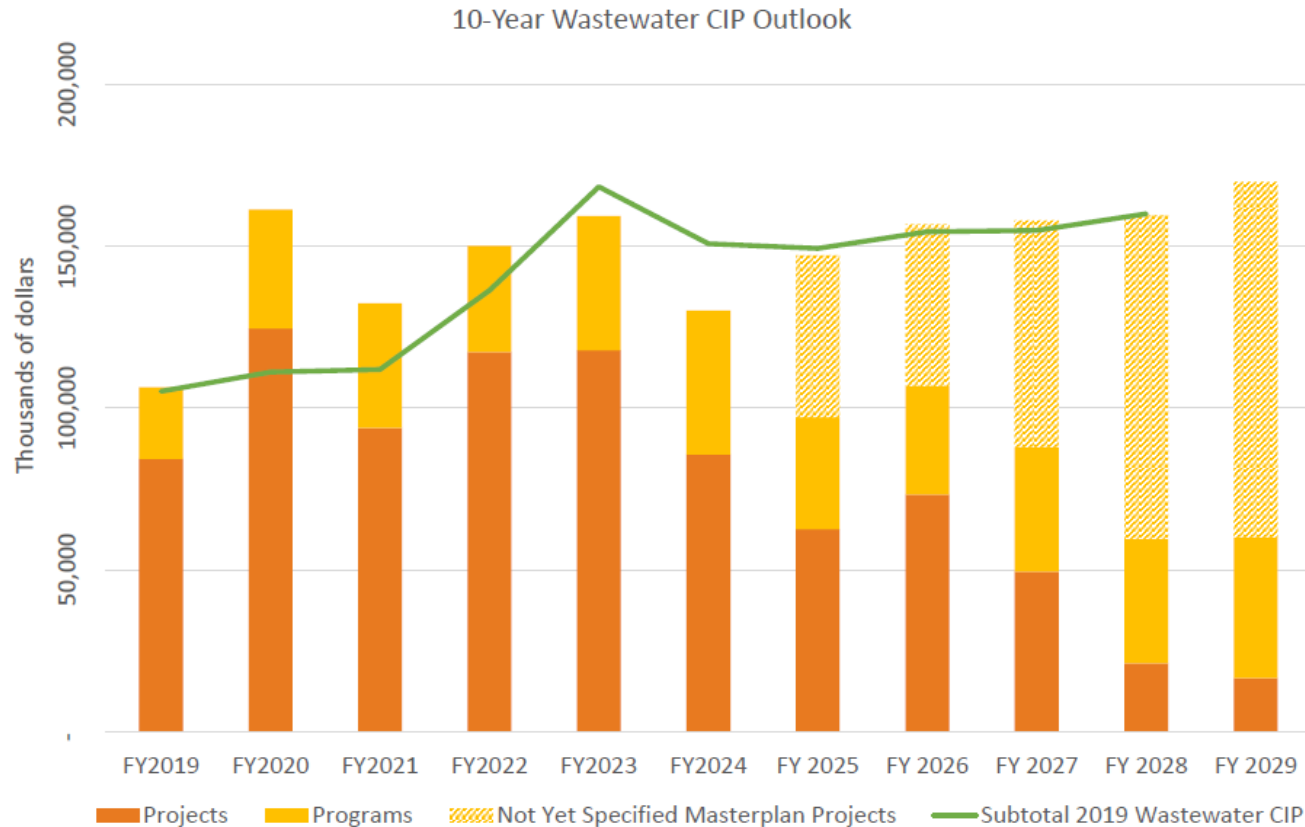


Figure VII-2. 10-Year Wastewater CIP Outlook Chart.