



# **CAPITAL IMPROVEMENT PLAN**

## **DRAFT 2019-2023 CIP REPORT**

April 4, 2018  
DRAFT

# Capital Improvement Plan

- This CIP should be considered a planning document – the CIP is an evolving plan that requires continual review and modification during the course of each year. The estimates indicated in the early years of the report are likely more precise than those in the later years.
- The following table details the planned expenditures for the Fiscal Years 2019-2023 CIP. Expenditures are focused on replacement, installation and/or abandonment of existing water mains, replacement of inoperable fire hydrants, rehabilitation of sewer systems, management of storm water with green infrastructure, upgrades to information technology systems, replacing aging equipment and vehicles, as well as rehabilitation of facilities that support the operation of the utility.

# Summary of CIP Financial Plan

The FY 2019 – FY 2023 capital improvement plan provides for \$247 million of water system improvements and \$219 million of sewer system improvements over the five year planning cycle.

Category Summary			Paid through 6/30/2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total 5-Year 2019-2023							
Water Main	25%		36,748	69,798	36,857	26,086	23,410	13,800	14,400	114,554							
Sewer Line Replacement	20%		18,900	24,225	25,172	41,489	9,286	9,200	9,600	94,747							
CIPMO	9%		-	15,678	14,468	13,391	8,280	5,590	-	41,729							
Green Infrastructure	13%		14,034	12,225	14,820	20,125	11,429	8,925	7,000	62,299							
Central Services	16%		-	10,750	30,257	11,500	11,000	11,000	11,000	74,757							
Meters/ Fire Hydrants	7%		-	6,000	7,283	6,000	6,000	6,000	6,000	31,283							
O&M - I&E	10%		797	-	22,700	16,189	8,900	-	-	47,789							
Total 2019 CIP	100%	\$	70,479	\$	138,675	\$	151,557	\$	134,780	\$	78,305	\$	54,515	\$	48,000	\$	467,157
	WATER	53%	37,545	78,575	87,867	59,386	46,616	28,095	25,900	247,864							
	SEWER	47%	32,934	60,100	63,690	75,394	31,690	26,420	22,100	219,294							
			70,479	138,675	151,557	134,780	78,305	54,515	48,000	467,157							

# Changes since Preliminary Draft

- Added the CIPMO Pilot Program Projects
  - Westside – North Rosedale Park
  - Eastside - Cornerstone
- Few minor project 5-Year projections
- Added project details for Central Services
- Updates to Fleet and Heavy Equipment
- Update to 2018 spend/actual



# CIP FY 2019 – Water System Summary

## Total estimated cost in millions

Category	FY 2018 - Current Year	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	2019-2023 CIP Total
<b>Water</b>							
Water Field Services	\$ 59,362	\$ 58,222	\$ 40,940	\$ 30,975	\$ 13,800	\$ 14,400	\$ 158,338
Metering	6,000	7,283	6,000	6,000	6,000	6,000	\$ 31,283
General Purpose	7,839	7,234	6,695	4,140	2,795	-	\$ 20,864
<b>Water Total</b>	<b>73,200</b>	<b>72,739</b>	<b>53,636</b>	<b>41,116</b>	<b>22,595</b>	<b>20,400</b>	<b>210,485</b>
<b>Water Central Services</b>							
Fleet	2,000	2,237	2,000	2,000	2,000	2,000	\$ 10,237
Facilities	2,500	6,733	2,250	2,000	2,000	2,000	\$ 14,983
Information Technology	875	6,158	1,500	1,500	1,500	1,500	\$ 12,158
<b>Water Central Services Total</b>	<b>5,375</b>	<b>15,129</b>	<b>5,750</b>	<b>5,500</b>	<b>5,500</b>	<b>5,500</b>	<b>37,379</b>
<b>Grand Total</b>	<b>78,575</b>	<b>87,867</b>	<b>59,386</b>	<b>46,616</b>	<b>28,095</b>	<b>25,900</b>	<b>247,864</b>



# CIP FY 2019 – Sewer System Summary

## Total estimated cost in Millions

Category	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	2019-2023 CIP Total
<b>Sewer</b>							
Field Services	\$ 34,661	\$ 26,507	\$ 42,824	\$ 10,621	\$ 9,200	\$ 9,600	\$ 98,752
Green Infrastructure	12,225	14,820	20,125	11,429	8,925	7,000	\$ 62,299
Pump Stations	-	-	-	-	-	-	\$ -
General Purpose	7,839	7,234	6,695	4,140	2,795	-	\$ 20,864
<b>Sewer Total</b>	<b>54,725</b>	<b>48,561</b>	<b>69,644</b>	<b>26,190</b>	<b>20,920</b>	<b>16,600</b>	<b>181,915</b>
<b>Sewer Central Services</b>							
Fleet	2,000	2,237	2,000	2,000	2,000	2,000	\$ 10,237
Facilities	2,500	6,733	2,250	2,000	2,000	2,000	\$ 14,983
Information Technology	875	6,158	1,500	1,500	1,500	1,500	\$ 12,158
<b>Sewer Central Services Total</b>	<b>5,375</b>	<b>15,129</b>	<b>5,750</b>	<b>5,500</b>	<b>5,500</b>	<b>5,500</b>	<b>37,379</b>
<b>Grand Total</b>	<b>60,100</b>	<b>63,690</b>	<b>75,394</b>	<b>31,690</b>	<b>26,420</b>	<b>22,100</b>	<b>219,294</b>

# Water Project List



Total estimated cost (1000's)

Water Project List 2019-2023 DRAFT CIP

CIP No.	Description	Status	Source of Funds	Total Estimated Cost	Paid thru 6/30/17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2019-2023 CIP Total	Percent of CIP
463	WS-685 Water Main Replacement	C	Bond	6,161	6,161	-	-	-	-	-	-	-	
463	WS-686 Water Main Replacement	C	Bond	7,898	7,898	-	-	-	-	-	-	-	
463	WS-691 Joy Road Water Main Replacement Phase 1	C	Bond	14,863	14,863	-	-	-	-	-	-	-	
463	WS-693A Joy Road Water Main Replacement Phase 2 (17,500LF)	A	Loan (DWRP)	9,480	2,788	4,800	1,892	-	-	-	-	1,892	0.8%
463	WS-697 Water Main Replacement -Westside (19,000LF)	A	Loan (DWRP)	4,585	2,828	1,747	10	-	-	-	-	10	0.0%
463	WS-698 Water Main Replacement -Westside (26,750LF)	A	Loan (DWRP)	7,752	-	7,000	752	-	-	-	-	752	0.3%
1322	WS-703 Water Main Replacement	A	I&E	9,350	-	3,000	6,350	-	-	-	-	6,350	2.6%
1322	WS-704 Water Main Replacement -along Outerdrive (20,500LF)	A	Bond	5,948	-	599	4,801	548	-	-	-	5,349	2.2%
1322	WS-705 Water Main Replacement-2-sections Eastside and Westside (33,400LF)	P	Bond	9,180	-	2,500	6,000	680	-	-	-	6,680	2.7%
1322	WS-706 Water Main Replacement Wayne Co. Roads (26,400)	P	Bond	10,000	-	-	5,500	4,000	500	-	-	10,000	4.0%
1322	WS-707 Water Main Replacement-MDOT areas (38,000LF)	N	DWRP/ TBD	15,982	-	-	5,000	5,000	5,982	-	-	15,982	6.4%
1322	WS-709 Water Main Replacement	N	TBD	10,000	-	-	3,000	4,000	3,000	-	-	10,000	4.0%
463	MOU-4841 (PW-6974) Livernois to Ranspach Water Main Replacement	C	I&E	768	768	-	-	-	-	-	-	-	0.0%
O&M	WS-701 Repair of Water Mains	A	I&E	4,784	797	3,187	800	-	-	-	-	800	0.3%
O&M	WS-702 Repair & Replacement of Water Mains	A	I&E	11,889	-	-	8,000	3,889	-	-	-	11,889	4.8%
O&M	WS-708 Repair of Water Mains	N	I&E	4,800	-	-	2,400	2,400	-	-	-	4,800	1.9%
O&M	DWS-902 Repair of Pavement (break repair)	N	I&E	24,000	-	-	6,800	6,800	6,800	-	-	20,400	8.2%
O&M	DWS-904 Repair of Lawns (break repair)	N	I&E	2,700	-	-	765	765	765	-	-	2,295	0.9%
O&M	Valve Exercising	N	I&E	3,000	-	-	2,000	1,000	-	-	-	3,000	1.2%
O&M	Leak Detection	N	I&E	600	-	-	600	-	-	-	-	600	0.2%
1308	CS-1673 Professional Engineering Services for Design of Water Main	A	I&E	3,031	1,443	700	888	-	-	-	-	888	0.4%
1349	CS-1812 Professional Engineering and Construction Services for CIPMO	A	I&E	57,406	-	7,839	7,234	6,695	4,140	2,795	-	20,864	8.4%
1349	CIPMO Pilot Program (N. Rosedale Park and Cornerstone Village)	A	I&E	39,183	-	-	2,664	10,658	-	-	-	13,322	5.4%
1349	Watermain & Sewer Program Allowances	N	I&E	118,479	-	35,829	-	1,200	13,929	13,800	14,400	43,329	17.5%
1304	Water Meter Replacement Program	A	I&E	25,283	-	4,000	5,283	4,000	4,000	4,000	4,000	21,283	8.6%
1352	Fire Hydrant Replacement Program	A	I&E	12,000	-	2,000	2,000	2,000	2,000	2,000	2,000	10,000	4.0%
1328	Vehicle, Heavy Equipment, and Equipment Purchases	A	I&E	11,825	-	2,000	2,237	2,000	2,000	2,000	2,000	10,237	4.1%
1262	Information Technology	A	I&E	13,151	-	875	6,158	1,500	1,500	1,500	1,500	12,158	4.9%
1337	Facility Improvement Allowance	A	I&E	17,643	-	2,500	6,733	2,250	2,000	2,000	2,000	14,983	6.0%
<b>TOTALS</b>				<b>461,741</b>	<b>37,545</b>	<b>78,575</b>	<b>87,867</b>	<b>59,386</b>	<b>46,616</b>	<b>28,095</b>	<b>25,900</b>	<b>247,864</b>	<b>100.0%</b>

# Sewer Project List



DETROIT  
Water & Sewerage  
Department

Total estimated cost (1000's)

Sewer Project List 2019-2023 DRAFT CIP

CIP No.	Description	Status	Source of Funds	Paid thru 6/30/17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2019-2023 CIP Total	Percent of CIP
448	DWS-889 Inspection and Rehab East Side	C	I&E	4,226	-	-	-	-	-	-	-	0.0%
448	DWS-890 Inspection and Rehab Central	C	I&E	4,226	-	-	-	-	-	-	-	0.0%
448	DWS-899 Emergency Sewer Repair and Rehabilitation	C	I&E	2,221	-	-	-	-	-	-	-	0.0%
448	DWS-900 Inspection and Rehab North Side	BC	I&E	4,001	4,225	-	-	-	-	-	-	0.0%
448	DWS-901 Inspection and Rehab West Side	C	I&E	4,226	-	-	-	-	-	-	-	0.0%
448	DWS-903 Inspection and Rehabilitation of Sewers City Wide	A	I&E	-	20,000	20,000	20,000	-	-	-	40,000	18.2%
1349	CIPMO Pilot Program (N. Rosedale Park and Cornerstone Village)	N	I&E	-	-	5,172	20,689	-	-	-	25,861	11.8%
1349	Watermain & Sewer Program Allowances	N	I&E	-	10,436	-	800	9,286	9,200	9,600	28,886	13.2%
1349	CS-1812 Professional Engineering and Construction Services for Capital Improvement Program Management Organization	A	I&E	-	7,839	7,234	6,695	4,140	2,795	-	20,864	9.5%
	I&E DWS-902 Repair of Pavement (break repair)	A	I&E	-	-	1,200	1,200	1,200	-	-	3,600	1.6%
	I&E DWS-904 Repair of Lawns (break repair)	N		-	-	135	135	135	-	-	405	0.2%
1353	CS-1522 Green Infrastructure Program Management	A	I&E	11,965	2,000	1,050	-	-	-	-	1,050	0.5%
1353	Stoepel Park No. 1	A	I&E	-	25	15	10	-	-	-	25	0.0%
1353	PC-799 Crowell Rec Center and EcoSite Modifications	A	I&E	-	300	600	10	10	5	-	625	0.3%
1353	Constance Sewer (PW-6968)	BC	I&E	-	40	-	-	-	-	-	-	0.0%
1353	Tireman Phase II Bioswale	P	I&E	-	100	40	-	-	-	-	40	0.0%
1353	West Warren (Constance at Rouge Park/Tireman Sawyer P	N	I&E	-	-	600	5,300	5,300	100	-	11,300	5.2%
1353	PC-801 Oakman Blvd	P	I&E	-	500	3,000	2,000	250	250	-	5,500	2.5%
1353	Gompers	N	I&E	-	-	400	680	100	20	-	1,200	0.5%
1353	Liuzzo Park	N	I&E	-	25	15	10	-	-	-	25	0.0%
1353	PC-800 O'Shea Park	P	I&E	-	400	200	25	25	-	-	250	0.1%
1353	Joy Rd. Drainage Improvements	N	I&E	-	225	-	-	-	-	-	-	0.0%
1353	Minock Park	N	I&E	-	-	-	3,000	1,500	1,500	-	6,000	2.7%
1353	Rogell	N	I&E	-	-	3,000	4,550	400	50	-	8,000	3.6%
1353	PW-6968 Pervious Pavement Projects & Tireman Phase I	BC	I&E	2,069	45	-	-	-	-	-	-	0.0%
1353	Charles H. Wright Academy	N	I&E	-	250	1,400	40	40	-	-	1,480	0.7%
1353	Green Stormwater Infrastructure Construction Allowance	N	I&E	-	8,315	1,500	1,500	1,804	5,000	5,000	14,804	6.8%
1353	CS-XXXX Green Infrastructure Program Management	N	I&E	-	-	3,000	3,000	2,000	2,000	2,000	12,000	5.5%
1328	Vehicle, Heavy Equipment, and Equipment Purchases	N	I&E	-	2,000	2,237	2,000	2,000	2,000	2,000	10,237	4.7%
1262	Information Technology	N	I&E	-	875	6,158	1,500	1,500	1,500	1,500	12,158	5.5%
1337	Facility Improvement Allowance	N	I&E	-	2,500	6,733	2,250	2,000	2,000	2,000	14,983	6.8%
<b>TOTALS</b>				<b>32,934</b>	<b>60,100</b>	<b>63,690</b>	<b>75,394</b>	<b>31,690</b>	<b>26,420</b>	<b>22,100</b>	<b>219,294</b>	<b>100.0%</b>



# Central Services Summary

## Total estimated cost (1000's)

Category	FY 2018 - Current Year	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	2019-2023 CIP Total
<b>Fleet</b>							
Water	\$ 2,000	\$ 2,237	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 10,237
Sewer	2,000	2,237	2,000	2,000	2,000	2,000	10,237
<b>Fleet Total</b>	<b>4,000</b>	<b>4,475</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>	<b>20,475</b>
<b>Facilities</b>							
Water	2,500	6,733	2,250	2,000	2,000	2,000	14,983
Sewer	2,500	6,733	2,250	2,000	2,000	2,000	14,983
<b>Facilities Total</b>	<b>5,000</b>	<b>13,467</b>	<b>4,500</b>	<b>4,000</b>	<b>4,000</b>	<b>4,000</b>	<b>29,967</b>
<b>Information Technology</b>							
Water	875	6,158	1,500	1,500	1,500	1,500	12,158
Sewer	875	6,158	1,500	1,500	1,500	1,500	12,158
<b>Information Technology Total</b>	<b>1,750</b>	<b>12,316</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>3,000</b>	<b>24,316</b>
<b>Grand Total</b>	<b>10,750</b>	<b>30,257</b>	<b>11,500</b>	<b>11,000</b>	<b>11,000</b>	<b>11,000</b>	<b>74,757</b>



DETROIT  
Water & Sewerage  
Department

## Information Technology

Descriptions	Type	Year	Life (Years)	QTY	Unit Cost	Total	2018-19
<b>Public Affairs</b>							
Video equipment	Hardware/Equipment	Addition	3	2	\$ 2,600	\$ 5,200	5,200
Remote cameras	Hardware/Equipment	Addition	3	2	800	1,600	1,600
Multibox	Hardware/Equipment	Addition	3	1	1,250	1,250	1,250
Podium	Hardware/Equipment	Replacement	5	1	2,000	2,000	2,000
Digital camera	Hardware/Equipment	Addition	3	1	950	950	950
Tablet computer	Hardware/Equipment	Addition	3	4	425	1,700	1,700
<b>Customer Service</b>							
Low Voltage Wiring DWS-885	Hardware/Equipment	Addition	5	1	1,000,000	1,000,000	1,000,000
<b>Information Technology</b>							
EnQuesta Upgrade	Software	Replacement	5	1	1,252,500	1,252,500	1,252,500
Video Security System Upgrades	Software	Replacement	5	1	150,000	150,000	150,000
Access Control	Software	Addition	5	1	100,000	100,000	100,000
Network Infrastructure-REPLACEMENT	Software	Addition	5	1	250,000	250,000	250,000
Radios	Hardware/Equipment	Replacement	3	100	2,300	230,000	230,000
Desktops	Hardware/Equipment	Replacement	3	125	1,200	150,000	150,000
Laptops	Hardware/Equipment	Replacement	3	60	1,800	108,000	108,000
Printers	Hardware/Equipment	Replacement	5	15	17,000	255,000	255,000
Tablets	Hardware/Equipment	Replacement	3	35	2,200	77,000	77,000
Itron Replacement (Initial)	Other IT Implementation	Replacement	5	1	1,262,500	1,262,500	1,262,500
Dan's Executive Dashboard	Software	New Software	5	1	530,000	530,000	530,000
Acella ROW Implementation	Software	New Software	5	1	356,000	356,000	356,000
Misc Equipment for AssetWorks	Hardware/Equipment	Addition	5	1	150,000	150,000	150,000
GPS for vehicles	Hardware/Equipment	Addition	5	1	210,000	210,000	210,000
Data Analytics	Software	New Software	5	1	212,500	212,500	212,500
Office Space Maintenance/Reconfigs.	Hardware/Equipment	Replacement	10	1	174,500	174,500	174,500
Network Infrastructure - CoD MERGER	Software	Replacement	5	1	932,000	932,000	932,000
Oracle Database Licenses	Software	Finishing Currer	7	1	1,750,000	1,750,000	1,750,000
CityInsights Portal Phase II	Software	Enhancements	5	1	341,000	341,000	341,000
ITIL Based Service Desk w/City of Detroit	Software	New Software	5	1	441,000	441,000	441,000
Records Management Services	Software	New Software	5	1	671,200	671,200	671,200
Copiers/Printers	Hardware/Equipment	New Hardware	7	1	12,000	12,000	12,000
Other IT Implementations	Other IT Implementation	New Other IT	5	1	978,000	978,000	978,000
Collaboration Software for Drainage & Records Management	Software	New Software	5	1	710,400	710,400	710,400
<b>Total</b>						<b>\$12,316,300</b>	<b>\$12,316,300</b>

**Information Technology –**  
 Software: \$6.1M  
 Hardware/Equipment: \$2.2M  
 Other: \$4M  
 Software-Enquesta upgrade  
 \$1.2M  
 Oracle Database licenses (lifetime)  
 \$1.75M

# Vehicle, Heavy Equipment, and Equipment



Descriptions	Type	Addition/ Replacement	QTY	Unit Cost	2018-19
<b>Revenue Recovery</b>					
Assigned Vehicles	Vehicle	Addition	2	35,000	70,000
<b>Facilities Operations</b>					
CSF- Scissor lift	Lift Truck	Addition	1	200,000	200,000
air compressor-MOB	Equipment	Replacement	1	70,000	70,000
death tanks-diesel	Equipment	Replacement	2	20,000	40,000
<b>Meter Operations</b>					
Utility Truck with Crane	Heavy Equipment	Replacement	1	90,000	90,000
Compact Excavator	Heavy Equipment	Addition	1	60,000	60,000
Drop Deck Trailer for Excavator	Heavy Equipment	Addition	1	20,000	20,000
Mini Hydroexcavator	Heavy Equipment	Addition	1	70,000	70,000
Compressors	Equipment	Addition	4	6,800	27,200
2 -5/8 test bench	Equipment	Replacement	2	100,000	200,000
3/4" Test Bench	Equipment	Replacement	1	81,200	81,200
1" Test Bench	Equipment	Replacement	1	83,400	83,400
1-1/2-2in Test Bench	Equipment	Replacement	1	94,300	94,300
<b>Field Services Operations</b>					
Camera Truck-CCTV	Specialty Truck	Addition	1	200,000	200,000
Mini Excavators	Heavy Equipment	Replacement	6	75,000	450,000
12,000+ lb Trailer	Heavy Equipment	Addition	6	4,250	25,500
Utility Truck	Specialty Truck	Addition	8	90,000	720,000
Boom Truck	Specialty Truck	Replacement	4	250,000	1,000,000
Backhoe (Excavator)	Heavy Equipment	Replacement	1	125,000	125,000
Compressors		Addition	4	5,000	20,000
<b>Fleet Operations</b>					
SUVs	Vehicle	Replacement	3	23,000	69,000
Passenger Vehicles	Vehicle	Replacement	5	21,000	105,000
Heavy Duty Hoist for Vactors	Heavy Equipment	Addition	1	420,000	420,000
Shuttle Bus	Bus/Van	Replacement	1	45,000	45,000
Cooling fans-shop	Equipment	Addition	3	6,000	18,000
Cooling fans-shop	Equipment	Addition	1	7,000	7,000
hydrolic hosing machine-vactor	Equipment	Addition	1	10,000	10,000
Tow behind pump	Equipment	Addition/Replacement	2	37,000	74,000
Tow behind compressor	Equipment	Replacement	2	40,000	80,000
<b>Total</b>				<b>\$ 4,474,600</b>	

**Fleet & Heavy Equipment:**  
 Trucks: \$2.3M  
 Vehicles \$244K  
 Heavy Equip: \$1.1M

# Facility Improvements



DETROIT  
Water & Sewerage  
Department

Descriptions	Type	2018-19
<b>Roofing</b>		
CSF/West/MOB	Roof replacement	7,125,000
Salt Dome - Roof	Roof replacement	-
<b>Heating Units</b>		
CSF	HVAC Units	2,100,000
Customer Service	HVAC	25,000
<b>Garage Door Replacement</b>		
CSF	CSF/West yard	240,000
<b>Misc. Tuckpointing</b>		
CSF/MOB		300,000
<b>Furniture</b>		
Organization Development	File storage unit	2,500
Stormwater Drainage	Furniture	10,000
Service Center Chairs	Furniture	50,000
<b>Interior Improvements</b>		
Painting/Carpet		15,000
Elevators		2,000,000
Flooring	Interior	1,000,000
Flooring	exterior	375,000
10th Floor Conference Room buildout	MOB	9,000
<b>Parking Lot Improvements</b>		
Repavement	Customer Service-East & West	15,000
LED Lights	CSF/West yard	200,000
<b>Total</b>		<b>\$ 13,466,500</b>

## Facility Improvements

Roof replacement –  
CSF \$7.2M

Heating \$2.1M

Flooring \$1.4M

## Next Steps

- Secure funding such as SRF, bonds, etc.
- **April 2018** – Finalized the 2019 CIP 5-year spend
- **May 2018** – Submit 2019 CIP book for BOWC approval with the Operating Budget
- **June 2018** – Submit 2019 CIP to FRC for Approval
- **July 2018** – Beginning of Fiscal year

# Thank You



[facebook.com/DWSDDetroit](https://facebook.com/DWSDDetroit)



[@DetroitWaterDep](https://twitter.com/DetroitWaterDep)



[@detroitwatersewerage](https://instagram.com/detroitwatersewerage)