

FY 2016 Water Supply System Capital Improvement Program

Fiscal Years 2016 Through 2020

Mike Duggan, Mayor
City of Detroit

Administration

Sue F. McCormick, Director
Darryl A. Latimer, Deputy Director
William Wolfson, General Counsel/
Chief Administrative/Compliance Officer
Nicolette Bateson, Chief Financial Officer
Cheryl Porter, Chief Operating Officer
Syed Ali, P.E., Head Engineer
Capital Management Group

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**Water Supply System
Capital Improvement Program
Fiscal Years 2015-16 Through 2019-20**

For ORCAP Committee Approval
3-3-2015

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Executive Management Team

Sue F. McCormick, Director
Darryl A. Latimer, Deputy Director
Nicolette Bateson, Chief Financial Officer
William Wolfson, General Counsel/Chief Administrative/Compliance Officer
Cheryl Porter, Chief Operating Officer
Dan Rainey, Information Technology Director
W. Barnett Jones, Chief Security Officer
Terri Conerway, Organizational Development Director

Capital Management Group

Syed Ali, P.E., Head Engineer
Corey Thomas

**Water Supply System
Detroit Water and Sewerage Department
Capital Improvement Programs**

For ORCAP Committee Approval
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OVERVIEW

The attached report summarizes the capital planning agenda for the DWSD Water Supply System. This should be considered a planning document – the CIP is a dynamic and evolving plan that requires continual review and modification during the course of each year. The estimates indicated in the early years of the attached report are likely more precise than those in the later years. The project descriptions represent brief synopses of the entire project scope; these descriptions are generally more precise for ongoing active projects than for planned new projects, where specific project activities may have yet to be determined.

DEFINITIONS

Funded Portion of the Programs

The Water System and Sewerage System capital improvement programs cover a five fiscal year planning horizon. However, only the first year or two of the programs are actually funded. The Department uses the pay as you go method of capital project funding rather than financing projects 100% in advance. The Department's capital financing strategy is designed to align capital project financing sources with program requirements in a framework that balances multiple goals, including: (a) recover the costs of capital investment over the useful lives of the capital assets; (b) minimize the impact of the capital programs on water and sewerage rates; and (c) protect and enhance the Department's financial position.

Projected Expenditures Spread by Fiscal Year

In the Water System and Sewerage System capital improvement programs, when project funding requirements are displayed spread by fiscal year, the dollar amount shown for the projects is the estimated expenditures for each fiscal year throughout the life of the projects. This type of presentation identifies what the financial requirements would be, using the pay as you go method of financing, which is the method currently in use by DWSD.

Project Types

The typical capital project consists of three distinct phases: study, design and construction. In some cases, phases are combined, such as study/design or design/construction. For capital program purposes, each phase is considered a separate project. Financing is committed only for the current project phase, and not for any subsequent phase until that phase has been authorized to start. Project identified as ongoing have been authorized to start by the director and the work is underway. Project identified as new have not yet started.

Project Detail Sections

Active Project: is a project that has an assigned DRMS number, been issued the Notice to Start Work, had expenditures in the last fiscal year and has projected expenditures of more than \$100,000 in the current fiscal year.

Project On Hold: is a project that may or may not have an assigned DRMS number, experienced expenditures or no expenditures in previous fiscal year(s), and/or has no projected expenditures in the current fiscal year or future fiscal years.

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Projects Under Procurement: is a project that has an assigned DRMS number and has not been issued the Notice to Start Work.

Projects Pending Close-out: is a project that has an assigned DRMS number, been issued the Notice to Start Work, has projected expenditures for the current fiscal year equal to \$100,000 or less – with no further projected expenditures, and has been substantially completed.

New Project: is a project that does not have an assigned DRMS number, has a proposal, and has never had expenditures charged to it.

Primary Project Purpose

- 1 – Directly mandated projects (Specific projects mandated by regulatory agencies or court ordered)
- 2 – Projects mandated by regulatory requirements to maintain compliance
- 3 – Projects required to maintain or improve system reliability and/or capacity
- 4 – Projects that utilize technological advances to improve operational efficiency, worker productivity and/or managerial effectiveness
- 5 – Projects required for new service

Allocation Status

- D – Detroit Only
- S – Suburban Only
- CTA - Common To All

Project Types

- S – Study; S/D – Study and Design; S/D/C – Study, Design and Construction;
- S/D/CA – Study, Design and Construction Assistance
- D – Design; DB – Design Build; DBA – Design Build Assistance;
- D/C – Design and Construction; D/CA – Design and Construction Assistance
- C – Construction; CA – Construction Assistance;
- CM – Construction Management
- C/CA – Construction and Construction Assistance
- IT – Information Technology Systems
- LS – Legal Services
- PO – Purchase Order

Legend

(1) Costs shown represent the Water Supply System's portion of the project. Refer to the Sewage Disposal System CIP for project costs financed by the Sewage Disposal System.

**Water Supply System
Capital Improvement Program
CIP Executive Summary**

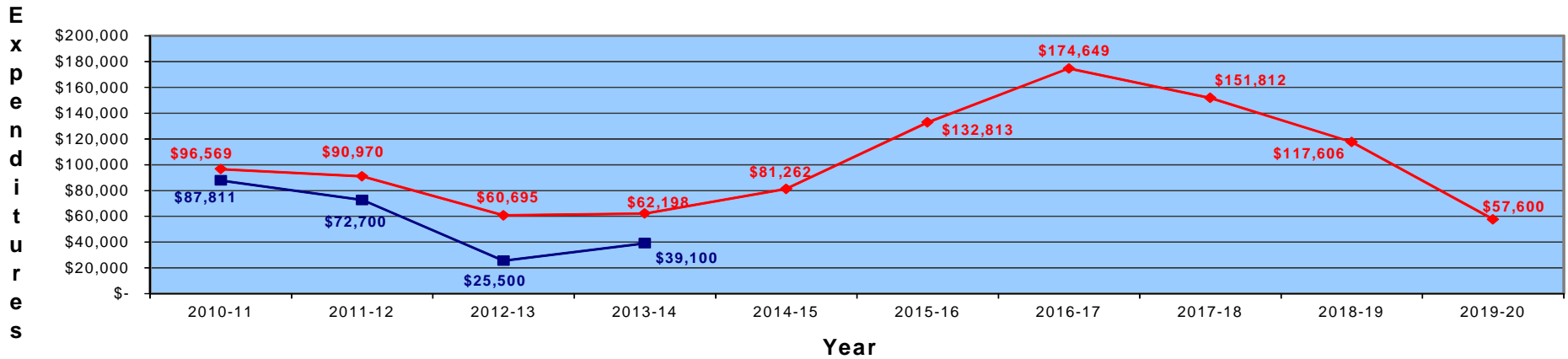
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(000)

* For information purposes only. Not counted in Total.

Ongoing	Update* 2014-15	2015 - 16	# of Projects	2016 - 17	2017 - 18	2018 - 19	2019 - 20	5 Year Sub Total	Remaining	Total
Active	59,589	57,113	16	34,204	4,254	300	0	95,871	0	95,871
Under Procurement	3,200	22,850	7	25,420	23,950	8,791	0	81,011	0	81,011
Pending Close-out	7,973	40	8	0	0	0	0	40	0	40
Ongoing Total	70,762	80,003	31	59,624	28,204	9,091	0	176,922	0	176,922
New Projects Total	10,500	52,810	26	115,025	123,608	108,515	57,600	457,558	16,316	473,874
Total CIP	\$ 81,262	\$ 132,813	57	\$ 174,649	\$ 151,812	\$ 117,606	\$ 57,600	\$ 634,480	\$ 16,316	\$ 650,796

Actual and Projected Expenditures by Fiscal Year



■ Projected Expenditures
 ■ Actual (unaudited) Expenditures

Notations: 2010-11 thru 2013-14 totals are projected and actual (unaudited) expenditures
 2014-15 thru 2019-20 are projected expenditures

Summary of Projected Expenditures Spread by Fiscal Year

**Water Supply System
Capital Improvement Program**

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**Summary of Projected Expenditures Spread by Fiscal Year for Ongoing and New Projects
(000)**

	<u>2015 - 16</u>	<u>2016 - 17</u>	<u>2017 - 18</u>	<u>2018 - 19</u>	<u>2019 - 20</u>	<u>Remaining</u>	<u>Total</u>
Facilities							
Metro Area Construction	37,000	65,247	50,150	36,700	10,000		199,097
Urban System Improvements	39,060	25,823	14,800	14,000	14,000		107,683
Computer Systems	6,142	1,000	2,250	250			9,642
	<u>\$82,202</u>	<u>\$92,070</u>	<u>\$67,200</u>	<u>\$50,950</u>	<u>\$24,000</u>		<u>\$316,422</u>
Plant Replacement and Renovation							
General Plant	16,486	25,418	24,260	21,000	21,000	1,500	109,664
Water Works Park	5,200	13,200	14,375	5,000			37,775
Springwells	21,700	22,850	30,344	32,641	10,000	10,900	128,435
Northeast	500	4,200	333				5,033
Southwest	870	4,300	2,400			2,940	10,510
Lake Huron	900	5,300	9,400	7,715	2,600	126	26,041
Pumping Stations and Reservoirs	4,955	7,311	3,500	300		850	16,916
	<u>\$50,611</u>	<u>\$82,579</u>	<u>\$84,612</u>	<u>\$66,656</u>	<u>\$33,600</u>	<u>\$16,316</u>	<u>\$334,374</u>
Ongoing Projects	80,003	59,624	28,204	9,091			176,922
New Projects	52,810	115,025	123,608	108,515	57,600	16,316	473,874
TOTAL CAPITAL COSTS	<u>\$132,813</u>	<u>\$174,649</u>	<u>\$151,812</u>	<u>\$117,606</u>	<u>\$57,600</u>	<u>\$16,316</u>	<u>\$650,796</u>

Projected Expenditures Spread by Fiscal Year

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year
(000)**

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	<u>2015 - 16</u>	<u>2016 - 17</u>	<u>2017 - 18</u>	<u>2018 - 19</u>	<u>2019 - 20</u>	<u>Remaining</u>	<u>Total</u>
Facilities							
Metro Area Construction							
Ongoing	22,000	18,247	9,000	3,700			52,947
New	15,000	47,000	41,150	33,000	10,000		146,150
	<u>\$37,000</u>	<u>\$65,247</u>	<u>\$50,150</u>	<u>\$36,700</u>	<u>\$10,000</u>		<u>\$199,097</u>
Urban System Improvements							
Ongoing	25,060	11,823	800				37,683
New	14,000	14,000	14,000	14,000	14,000		70,000
	<u>\$39,060</u>	<u>\$25,823</u>	<u>\$14,800</u>	<u>\$14,000</u>	<u>\$14,000</u>		<u>\$107,683</u>
Computer Systems							
Ongoing	2,142						2,142
New	4,000	1,000	2,250	250			7,500
	<u>\$6,142</u>	<u>\$1,000</u>	<u>\$2,250</u>	<u>\$250</u>			<u>\$9,642</u>
Facilities Total							
Ongoing Projects	49,202	30,070	9,800	3,700			92,772
New Projects	33,000	62,000	57,400	47,250	24,000		223,650
	<u>\$82,202</u>	<u>\$92,070</u>	<u>\$67,200</u>	<u>\$50,950</u>	<u>\$24,000</u>		<u>\$316,422</u>
Plant Replacement and Renovation							
General Plant							
Ongoing	2,886	1,818	660				5,364
New	13,600	23,600	23,600	21,000	21,000	1,500	104,300
	<u>\$16,486</u>	<u>\$25,418</u>	<u>\$24,260</u>	<u>\$21,000</u>	<u>\$21,000</u>	<u>\$1,500</u>	<u>\$109,664</u>
Water Works Park							
Ongoing	5,000	11,000	14,000	5,000			35,000
New	200	2,200	375				2,775
	<u>\$5,200</u>	<u>\$13,200</u>	<u>\$14,375</u>	<u>\$5,000</u>			<u>\$37,775</u>
Springwells							
Ongoing	19,400	14,350	2,744	91			36,585
New	2,300	8,500	27,600	32,550	10,000	10,900	91,850
	<u>\$21,700</u>	<u>\$22,850</u>	<u>\$30,344</u>	<u>\$32,641</u>	<u>\$10,000</u>	<u>\$10,900</u>	<u>\$128,435</u>

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year
(000)**

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	<u>2015 - 16</u>	<u>2016 - 17</u>	<u>2017 - 18</u>	<u>2018 - 19</u>	<u>2019 - 20</u>	<u>Remaining</u>	<u>Total</u>
Northeast							
New	500	4,200	333				5,033
	<u>\$500</u>	<u>\$4,200</u>	<u>\$333</u>				<u>\$5,033</u>
Southwest							
Ongoing	10						10
New	860	4,300	2,400			2,940	10,500
	<u>\$870</u>	<u>\$4,300</u>	<u>\$2,400</u>			<u>\$2,940</u>	<u>\$10,510</u>
Lake Huron							
New	900	5,300	9,400	7,715	2,600	126	26,041
	<u>\$900</u>	<u>\$5,300</u>	<u>\$9,400</u>	<u>\$7,715</u>	<u>\$2,600</u>	<u>\$126</u>	<u>\$26,041</u>
Pumping Stations and Reservoirs							
Ongoing	3,505	2,386	1,000	300			7,191
New	1,450	4,925	2,500			850	9,725
	<u>\$4,955</u>	<u>\$7,311</u>	<u>\$3,500</u>	<u>\$300</u>		<u>\$850</u>	<u>\$16,916</u>
<u>Plant Replacement and Renovation Total</u>							
Ongoing Projects	30,801	29,554	18,404	5,391			84,150
New Projects	19,810	53,025	66,208	61,265	33,600	16,316	250,224
	<u>\$50,611</u>	<u>\$82,579</u>	<u>\$84,612</u>	<u>\$66,656</u>	<u>\$33,600</u>	<u>\$16,316</u>	<u>\$334,374</u>
Summary - Total Costs							
Ongoing Projects	80,003	59,624	28,204	9,091			176,922
New Projects	52,810	115,025	123,608	108,515	57,600	16,316	473,874
TOTAL CAPITAL COSTS	<u>\$132,813</u>	<u>\$174,649</u>	<u>\$151,812</u>	<u>\$117,606</u>	<u>\$57,600</u>	<u>\$16,316</u>	<u>\$650,796</u>

Summary of Mandate and Allocation Status by Fiscal Year

**Water Supply System
Capital Improvement Program
Summary of Primary Project Purpose & Allocation Status
Projected Expenditures Spread by Fiscal Year**

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(000)

SUMMARY BY PRIMARY PROJECT PURPOSE AND ALLOCATION	<u>2015 - 16</u>	<u>2016 - 17</u>	<u>Funded</u>	<u>2017 - 18</u>	<u>2018 - 19</u>	<u>2019 - 20</u>	<u>Remaining</u>	<u>Total</u>
Projects Mandated by Regulatory Requirements to Maintain Compliance								
Common to All	36,270	54,950	91,220	63,294	50,500	21,300	5,965	232,279
Projects Required to Maintain or Improve System Reliability and/or Capacity								
Detroit Only	35,060	21,823	56,883	10,800	10,000	10,000	0	87,683
Common to All	51,793	89,876	141,669	70,318	52,856	22,300	10,351	297,494
Projects that Utilize Technological Advances to Improve Operational Efficiency, Worker Productivity and/or Management Effectiveness								
Detroit Only	4,000	4,000	8,000	4,000	4,000	4,000	0	20,000
Common to All	5,690	4,000	9,690	3,400	250	0	0	13,340
TOTAL	<u>\$132,813</u>	<u>\$174,649</u>	<u>\$307,462</u>	<u>\$151,812</u>	<u>\$117,606</u>	<u>\$57,600</u>	<u>\$16,316</u>	<u>\$650,796</u>

**Water Supply System
Capital Improvement Program**

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Summary of Primary Project Purpose & Allocation Status

Projected Expenditures Spread by Fiscal Year

(000)

SUMMARY BY ALLOCATION STATUS	<u>2015 - 16</u>	<u>2016 - 17</u>	<u>Funded</u>	<u>2017 - 18</u>	<u>2018 - 19</u>	<u>2019 - 20</u>	<u>Remaining</u>	<u>Total</u>
Detroit Only	39,060	25,823	64,883	14,800	14,000	14,000	0	107,683
Common to All	93,753	148,826	242,579	137,012	103,606	43,600	16,316	543,113
TOTAL	<u><u>\$132,813</u></u>	<u><u>\$174,649</u></u>	<u><u>\$307,462</u></u>	<u><u>\$151,812</u></u>	<u><u>\$117,606</u></u>	<u><u>\$57,600</u></u>	<u><u>\$16,316</u></u>	<u><u>\$650,796</u></u>
Detroit Only	29%	15%	21%	10%	12%	24%	0%	17%
Common to All	71%	85%	79%	90%	88%	76%	100%	83%

Water Supply System
Capital Improvement Program
Summary of Primary Project Purpose & Allocation Status
Projected Expenditures Spread by Fiscal Year

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(000)

SUMMARY BY PRIMARY PROJECT PURPOSE	<u>2015 - 16</u>	<u>2016 - 17</u>	<u>Funded</u>	<u>2017 - 18</u>	<u>2018 - 19</u>	<u>2019 - 20</u>	<u>Remaining</u>	<u>Total</u>
Projects Mandated by Regulatory Requirements to Maintain Compliance	36,270	54,950	91,220	63,294	50,500	21,300	5,965	232,279
Projects Required to Maintain or Improve System Reliability and/or Capacity	86,853	111,699	198,552	81,118	62,856	32,300	10,351	385,177
Projects that Utilize Technological Advances to Improve Operational Efficiency, Worker Productivity and/or Management Effectiveness	9,690	8,000	17,690	7,400	4,250	4,000	0	33,340
TOTAL	<u>\$132,813</u>	<u>\$174,649</u>	<u>307,462</u>	<u>\$151,812</u>	<u>\$117,606</u>	<u>\$57,600</u>	<u>\$16,316</u>	<u>\$650,796</u>
<hr/>								
RELATIVE PERCENTAGE								
Projects Mandated by Regulatory Requirements to Maintain Compliance	27%	31%	30%	42%	43%	37%	37%	36%
Projects Required to Maintain or Improve System Reliability and/or Capacity	65%	64%	65%	53%	53%	56%	63%	59%
Projects that Utilize Technological Advances to Improve Operational Efficiency, Worker Productivity and/or Management Effectiveness	7%	5%	6%	5%	4%	7%	0%	5%

A - Active Projects

An Active Project is a project that has:

1. an assigned DRMS number
2. been issued the Notice to Start Work
3. had expenditures in the last fiscal year
4. expenditures of more than \$100,000 in the current fiscal year

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year**

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Active Projects

* For information purposes only. Not
counted in Total.

Project Title	DRMS No.	CIP No.	Contract No./ Contract Amount	Type	(000)					2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
					Update* 2014 - 15	2015 - 16	2016 - 17	2017 - 18							
Metro Area Construction															
1 Parallel 42-Inch Main in 24 Mile Road from Rochester Station to Romeo Plank Road	004373	1112	WS-681 \$ 29,738,418	C	7,700	16,000	8,847					24,847	3	CTA	
Start Date: 04/07/2014 Completion Date: 10/09/2016 <i>This project will provide for the installation of approximately 35,650 feet of parallel 42-Inch diameter prestressed embedded concrete cylinder pipe (PCCP) and approximately 1070 linear feet of 36-inch diameter of PCCP in 24 Mile Road from Rochester Station to Romeo Plank Road. The work will also provide for all interconnections and valves.</i>															
Urban System Improvements															
2 Water Main Replacement in Various Streets Throughout the City	004170	1108	WS-648A \$ 8,861,730	C	6,918	2,500						2,500	3	D	
Start Date: 11/12/2013 Completion Date: 06/19/2016 <i>This project work consists of the replacement, installation, or abandonment of existing eight-inch, twelve-inch, and sixteen-inch water mains with approximately 5,800 linear feet (L.F.) of eight-inch, 1,400 L.F. of twelve-inch, and 1,100 L.F. of sixteen-inch ductile iron pipe, including an eight-mil polyethylene wrap, all appurtenances, and related structures.</i>															
3 Water System Improvements - Various Streets Throughout the City of Detroit	004430	463	WS-685 \$ 6,428,920	C 4	2,200	3,000	1,872					4,872	3	D	
Start Date: 06/02/2014 Completion Date: 05/17/2017 <i>This project includes replacement of approx. 42,428 feet of existing 6-inch, 8-inch, and 16-inch water mains with 8-inch and 12-inch ductile iron pipe and fittings. Design under As Needed Engineering Services Contracts CS-1240 Task 49, and CS-1372 Task 64.</i>															

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year**

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Active Projects

* For information purposes only. Not counted in Total.

Project Title		DRMS No.	CIP No.	Contract No./ Contract Amount	Type	(000)					Remaining	Total	Primary Project Purpose	Allocation Status
						Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19				
4	Water System Improvements in Joy Road from Southfield Road to Trinity	004478	463	WS-691 \$ 14,879,042	C 5	3,366	8,000	5,001				13,001	3	D

Start Date: 08/11/2014 **Completion Date:** 08/10/2016

5	Professional Engineering Service for Water Main Replacement within City of Detroit	004497	1308	CS-1673 \$ 1,031,060	D	600	400	200				600	3	D
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Start Date: 10/13/2014 **Completion Date:** 10/13/2017

This project is to provide professional engineering services for the water main replacement within City of Detroit.

Computer Systems

6	Data Center Reliability/Availability Improvements (1)	004366	1206	DWS-881 \$ 2,862,425	DB	1,500	685					685	4	CTA
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Start Date: 01/29/2013 **Completion Date:** 02/27/2016

The scope of work consists of designing and building data centers, which will provide system improvements for both power and UPS systems, environmental service, fire protection, structural wiring, and monitoring. This includes the SCC, WBB, Switch Room Central Services Facility, Switch Room WWTP-NAB-B1, Data Center Central Service Facility - IS-226, and Data Center WWTP-K303.

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Projected Expenditures Spread by Fiscal Year**

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Active Projects

* For information purposes only. Not counted in Total.

		(000)											Primary Project Purpose	Allocation Status	
Project Title		DRMS No.	CIP No.	Contract No./ Contract Amount	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining			Total
7	SCADA Radio Network Upgrade (1)	004368	1207	DWS-882 \$ 3,997,545	DB	1,900	383						383	3	CTA

Start Date: 03/26/2013 **Completion Date:** 03/26/2016

The scope of work consists of installing and upgrading the Department's new SCADA Radio network including low voltage wiring, radio wiring and cable, data connections, antenna mounting and connections, instrument wiring, network wiring, and fiber networks. It also includes system improvements and planning, system and material procurement in support of the activities required for completing each task.

8	Consolidated Process Control System Upgrades (1)	004392	1153	PC-773C \$ 4,237,885	DB1	1,100	1,074						1,074	3	CTA
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Start Date: 05/25/2013 **Completion Date:** 05/25/2016

This project involves integrating the control and monitoring network throughout all of the DWSD facilities with the new SCADA system installed under PC-713. The work includes control system hardware, software, and firmware upgrade or replacement, also troubleshooting, installation, start-up, testing, and repair services.

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year**

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Active Projects

* For information purposes only. Not counted in Total.

Project Title	DRMS No.	CIP No.	Contract No./ Contract Amount	Type	(000)				* For information purposes only. Not counted in Total.				Primary Project Purpose	Allocation Status
					Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total		
General Plant														
9 General Engineering Services (1)	004206	1031	CS-1432A \$ 6,625,000	D	495	220	18					238	3	CTA
Start Date: 01/23/2008 Completion Date: 01/23/2017														
<i>This project involves the study, design and construction assistance services for a variety of disciplines including, but not limited to, civil, architectural, structural, geotechnical, hydraulics, mechanical, piping, electrical, and instrumentation in a variety of tasks on an as-needed basis. Further tasks involve one or more DWSD facilities including, but not limited to water treatment plants, water distribution system including booster stations, wastewater treatment plant, wastewater collection systems including pumping stations, combined sewer overflow facilities, and administrative and logistical support facilities.</i>														
10 As-needed CIP Implementation Assistance and Related Services (1)	004217	956	CS-1433 \$ 9,913,172	S/D/CM	1,300	851	700	50				1,601	3	CTA
Start Date: 03/24/2006 Completion Date: 07/24/2017														
<i>This project provides for multi-discipline Engineering services on an "as-needed basis" to support DWSD's Water & Sewer Systems.</i>														
11 General Engineering Services (1)	004292	1182	CS-1481 \$ 6,600,000	D	1,000	1,000	500	323				1,823	3	CTA
Start Date: 03/27/2008 Completion Date: 03/27/2015														
<i>This project provides for rapid design turn-around for a variety of small scale projects on an as needed basis providing multi disciplinary professional services.</i>														

**Water Supply System
Capital Improvement Program
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3-3-2015

Active Projects

* For information purposes only. Not counted in Total.

Project Title		DRMS No.	CIP No.	Contract No./ Contract Amount	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
12	As-needed Engineering Services for Concrete Testing, Geotechnical Soil Borings, other Testing Services, and Related Services (1)	004294	1147	CS-1488 \$ 4,097,850	D/C	600	600	600	287				1,487	3	CTA
Start Date: 04/08/2009		Completion Date: 04/08/2018													
<i>The scope of work provides for as-needed engineering services for concrete testing, geotechnical soil borings, and other testing and related services.</i>															
13	Geotechnical and Related Services on an As-Needed Basis (1)	004306	1164	CS-1490 \$ 2,500,000	D	200	200						200	3	CTA
Start Date: 01/14/2010		Completion Date: 01/14/2015													
<i>The work includes consultant services for geotechnical work on as needed basis. The work also provides for additional engineering/technical services as requested by DWSD.</i>															

Springwells

14	Springwells Water Treatment Plant 1958 Filter Rehabilitation and Auxiliary Facilities Improvements	004100	917	CS-1425 \$ 6,498,479	S/D/CA	550	200	150	95				445	2	CTA
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Start Date: 01/18/2008 **Completion Date:** 01/18/2018

Provide study, design, and construction assistance services for the following projects. Project A: Relocation of Phosphoric Acid Feed System. Project B: Rehabilitation of 1958 Filters including HVAC and Architectural updates of 1930 and 1958 Buildings. Project C: Auxiliary Facilities Improvements for 1930 Plant. Project D: Update of existing O & M manuals and preparing On-line Manuals for DWSD web site. Project E: Oversight services for the 1930 plant failed filters.

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Active Projects

* For information purposes only. Not counted in Total.

		(000)											Primary Project Purpose	Allocation Status	
Project Title	DRMS No.	CIP No.	Contract No./ Contract Amount	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total			
15	Springwells Water Treatment Plant - 1958 Filter Rehabilitation and Auxiliary Facilities Improvements	004100	917	SP-563 \$ 75,899,000	C	24,000	19,000	14,000	2,499				35,499	2	CTA

Start Date: 07/08/2013 **Completion Date:** 03/14/2018

Provide construction services to furnish and install new filter media, underdrains, filter valves, and rate controllers; replace the existing filter control consoles, hydraulic control valves with electric control valves, enclosures; add appurtenances to enable automatic backwashing of the filters; provide a Filter Aid Polymer System to the 1930 and 1958 filter complexes; PLC based controls for automatic control of the polymer system; install a local instrumentation and controls system.

Pumping Stations and Reservoirs

16	Booster Stations and Reservoirs Inspection, Rehabilitation and Inspection Repair Program Management	004297	1170	DWS-874 PM \$ 13,865,107		6,160	3,000	2,316	1,000	300			6,616	3	CTA
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Start Date: 07/03/2013 **Completion Date:** 10/30/2019

The work provides for all Pumping Stations, study, design, and construction contract documents for rehabilitation and upgrades, and management services related to construction including award of contract, inspection during construction, and furnishing all construction work through provisional allowance for subagreements.

<u>\$59,589</u>	<u>\$57,113</u>	<u>\$34,204</u>	<u>\$4,254</u>	<u>\$300</u>	<u>\$0</u>	<u>\$0</u>	<u>\$95,871</u>
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UP - Projects Under Procurement

A Project Under Procurement has:

1. an assigned DRMS number
2. not been issued the Noticed to Start Work

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year
Projects Under Procurement**

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* For information purposes only. Not
counted in Total.

Project Title		DRMS No.	CIP No.	Contract No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
Metro Area Construction															
1	96" Main Relocation - 24 Mile Road and Dequindre	001841	153	WS-622	C	0		5,000	9,000	3,700			17,700	3	CTA
	<i>This project provides for the installation of approximately 25,000 linear feet of 96-inch diameter prestressed concrete embedded steel cylinder pipe with rubber and steel joints (SP-12).</i>														
2	36-inch Water Main in Telegraph Road	004419	1230	WS-684	C	500	5,000	3,800					8,800	3	CTA
	<i>This project includes installation of approximately 10,530 feet of 36-inch dia. water main in Telegraph Road from Cherry Hill to Warren Ave.</i>														
3	Pressure Regulating Valve Vault Improvements	004427	1216	DWS-891	C	600	1,000	600					1,600	3	CTA
	<i>The scope of work consists of replacement of five (5) existing defective Pressure Release Valves (PRV), improve accessibility to the pits, install isolation valves for the PRV pit, provide new sump pumps as needed, and other necessary improvements.</i>														
Urban System Improvements															
4	Water System Improvements, Various Streets Throughout the City of Detroit	004428	463	WS-686	C 3	1,000	7,000	1,400					8,400	3	D
	<i>This project includes replacement of approx. 38,390 feet of the existing 6-inch, 8-inch, and 12-inch water mains by 8-inch and 12-inch ductile iron pipes and fittings. Designed under CS-1240 Task #40 & 48.</i>														
5	Water Main Replacement within City of Detroit - Joy Rd from Greenfield to Schaefer and Davison Ave from Linwood to Livernois	004493	463	WS-693	C 6	200	4,150	3,350	800				8,300	3	D
	<i>Work includes replacement of approx. 18500 ft. of existing water main with 8", 12", and 16" DI pipe along both Joy Rd and Davison. The scope of work also includes approx. 5300 ft. of 24" DI pipe along Joy Rd.</i>														

**Water Supply System
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Projects Under Procurement**

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* For information purposes only. Not
counted in Total.

Project Title	DRMS No.	CIP No.	Contract No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status	
Water Works Park															
6	Yard Piping, Valves and Venturi Meters Replacement at Water Works Park	004296	1166	WW-536	C	0	5,000	11,000	14,000	5,000		35,000	2	CTA	
	<i>The work provides for the replacement of yard piping from 24 inch to 72 inch diameter, pressure reducing valves improvements, replacing venturi meters, water supply valves, 48 inch HLPS suction gate valves, discharge header isolation valves and reburish valve manholes. The work also provides for other miscellaneous improvements.</i>														
Springwells															
7	Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP	004485	1248	CS-1671	S/D/CA	100	200	200	150	91		641	3	CTA	
	<i>This project is to replace the leaking steam piping, condensate return piping and associated system at various places throughout the Springwells WTP. The scope of work also includes non functional pressure reducing valves, regulators and associated system for air compressor piping at various places in the plant.</i>														
Pumping Stations and Reservoirs															
8	Switghear Replacement at Joy Road Water Pumping Station	004472	1227	DWS-896	C 1	800	500	70				570	3	CTA	
	<i>Scope of work includes replacement of the outdoor 4800 volt switchgear at Joy Rd Water Pumping Station.</i>														
						<u>\$3,200</u>	<u>\$22,850</u>	<u>\$25,420</u>	<u>\$23,950</u>	<u>\$8,791</u>	<u>\$0</u>	<u>\$0</u>	<u>\$81,011</u>		

PC - Projects Pending Close-Out

A Project Pending Close-Out is a project that has:

1. an assigned DRMS number
2. been issued the Notice to Start Work
3. been substantially completed
4. project expenditures for the current fiscal year equal to \$100,000 or less - with no projected expenditures

**Water Supply System
Capital Improvement Program
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Projects Pending Close-out

* For information purposes only. Not
counted in Total.

Project Title	DRMS No.	CIP No.	Contract No./ Contract Amount	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
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Urban System Improvements

1	Department-wide General Engineering Services on an As-needed Basis (1)	004337	1026 CS-1499 \$ 5,000,000	D	889	5						5	3	D
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Start Date: 05/12/2010 **Completion Date:** 05/12/2015

This project involves designing water main and lateral sewer replacement projects for aging and dysfunctional water mains and sewers throughout Detroit under different tasks on an as-needed basis. The work also includes civil, structural, architectural, hydraulics, mechanical, electrical, surveying, instrumentation and piping design services.

2	Water Systems Improvements - Various Streets Throughout the City of Detroit	004360	1202 WS-680 \$ 4,372,205	C	1,525	5						5	3	D
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Start Date: 09/17/2012 **Completion Date:** 03/26/2015

This project consists of the replacement of approximately 28,925 linear feet of existing six-inch, eight-inch, twelve-inch and sixteen-inch water main with eight-inch, twelve-inch and sixteen-inch ductile iron water mains along with appurtenances in various streets throughout the city of Detroit.

General Plant

3	As-needed Engineering Services (1)	003450	54 CS-1345 \$ 4,165,092	D	168	5						5	3	CTA
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Start Date: 07/09/2001 **Completion Date:** 01/19/2015

This project provides rapid design turn-around for a variety of small scale projects which have not been initiated due to lack of in-house engineering staff.

**Water Supply System
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Projects Pending Close-out

* For information purposes only. Not counted in Total.

Project Title		DRMS No.	CIP No.	Contract No./ Contract Amount	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
4	Central Services Facility (CSF) Improvements (1)	004398	1188	DWS-884A \$ 1,853,981	C	1,467	5						5	4	CTA

Start Date: 11/04/2013 **Completion Date:** 11/30/2014

The scope of work includes HVAC system improvements, overhead doors replacement and other structural, mechanical and electrical rehabilitative work at the Central Services Facility (CSF).

5	Comprehensive Water Master Plan Update	004440	1233	CS-1528 \$ 1,998,600	S	784	5						5	3	CTA
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Start Date: 06/03/2013 **Completion Date:** 06/03/2015

Scope of work includes updating of the current Water Master Plan, which will include review of previous/ongoing studies, regulatory mandates under the Clean Water Act/MDNRE, obligations by DWSD to the customers through the model contract, and DWSD policies.

Southwest

6	Oversight of Waste Washwater and Sludge Disposal at Lake Huron, Southwest, Northeast and Springwells Plants	001999	269	CS-1305 \$ 6,500,000	D/CA	235	5						5	2	CTA
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Start Date: 02/02/2000 **Completion Date:** 02/02/2014

This project provides oversight services for the design/build contract for treatment facilities for the disposal of waste washwater at the Lake Huron WTP and sludge collection, treatment and disposal of alum sludge and treatment of waste washwater at the Southwest, Springwells, Northeast WTPs.

**Water Supply System
Capital Improvement Program
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Projects Pending Close-out

* For information purposes only. Not counted in Total.

		(000)													
Project Title		DRMS No.	CIP No.	Contract No./ Contract Amount	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
7	Southwest Water Treatment Plant, Sludge Treatment & Waste Washwater Treatment Facilities	003466	262	SW-548 \$ 49,680,368	C	2,267	5						5	2	CTA

Start Date: 05/12/2010 **Completion Date:** 07/03/2015

This project involves the continuous sludge removal from the settling basins and filter waste Backwash Water Treatment with coagulation, flocculation, sedimentation and thickening, and removal of alum sludge to the Treatment Facilities. The effluent flow will be monitored and sampled prior to the Sexton-Kilfoil drain.

Pumping Stations and Reservoirs

8	Wick Road Station Rehabilitation	004224	1047	DWS-858 \$ 13,699,409	DB	638	5						5	3	CTA
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Start Date: 11/25/2008 **Completion Date:** 12/31/2013

This project provides for the design, furnishing, installing, and testing of a new building. The work also provides for transformers, switchgear, variable frequency drives, starters, motors, pumps, heating, cooling and ventilation, lighting, controls, power monitoring, ovation system modifications, fire alarm, security, and training. This project further provides for complete documentation of installed system and revised O & M manuals.

\$7,973	\$40	\$0	\$0	\$0	\$0	\$0	\$40
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N - New Projects

A New Project is a project that:

1. does not have an assigned DRMS number
2. has a proposal
3. has never had expenditures charged against it

**Water Supply System
Capital Improvement Program
Projected Expenditures Spread by Fiscal Year**

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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
Metro Area Construction														
1 Parallel 48-Inch Main from Wick Station to Hannan Road		2005	1113	C	0	1,000	12,000	7,000				20,000	3	CTA
<i>This project will provide for the installation of approximately 15,000 feet of 48-Inch main, parallel to the existing 48-Inch and 42-Inch mains, from Wick Station to Hannan Road. The work will also provide for all interconnections and valves.</i>														
2 Water Transmission Allowance/Pump Station Improvements		2010	1230	D/C	1,000	10,000	10,000	10,000	10,000	10,000		50,000	3	CTA
<i>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. This allowance will also be used to fund critical pump station upgrades.</i>														
3 Suburban Water Meter Pit Rehabilitation and Meter Replacement		2014	1303	D/C	0	1,000	3,000	1,150				5,150	4	CTA
<i>The scope of work includes replacements of suburban water meters and rehabilitation of meter pits and related items.</i>														
4 Garland Main Transmission		2014	1305	S/D/C	0	3,000	22,000	23,000	23,000			71,000	3	CTA
<i>Scope of work includes condition assessment, design, and construction for the Garland Main Transmission system.</i>														

**Water Supply System
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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
Urban System Improvements														
5 Water Main Replacement Allowance			463	D/C	4,000	10,000	10,000	10,000	10,000	10,000		50,000	3	D
<i>This project is a yearly funding allocation for the design and/or construction work for the maintenance, replacement and/or construction of aging water mains and all appurtenances, connections and related structures in the City.</i>														
6 Water Meter Replacement Allowance		2014	1304	C	0	4,000	4,000	4,000	4,000	4,000		20,000	4	D
<i>An allowance for the annual purchase and installation of water meters and its accessories to replace residential and commercial meters within City of Detroit.</i>														
Computer Systems														
7 IT Systems Allowance (1)		2013	1262	DB	1,500	4,000	1,000	2,250	250			7,500	4	CTA
<i>This is an allowance for the procurement of IT equipment or services for the replacement or upgrade of the department's computer systems, software licensing, and related IT items.</i>														
General Plant														
8 Water Treatment Plant Allowance		2012	1256	D/C	4,000	10,000	20,000	20,000	20,000	20,000		90,000	2	CTA
<i>This is an Allowance for unplanned critical projects, equipment replacement/rehabilitation, critical asset replacement, energy saving project, etc. at the Water Treatment Plants and other Water Operation Facilities.</i>														
<i>This allowance also includes estimated amount for the repurposing and/or reducing capacities of the Water Treatment Plants per the recommendation of the Water Master Plan Study team.</i>														

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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
9 Roofing Systems Replacement at Water Plants and Booster Pump Stations <i>The work includes, but is not necessarily limited to, the removal and replacement of existing built-up, membrane, metal, and shingle type roofs, including all accessories such as flashing, expansion joints, coping etc. The sites covered by this project are located at DWSD's water treatment plants and booster pump stations throughout southeastern Michigan.</i>		2014	1279	C	0	3,000	3,000	2,500				8,500	3	CTA
10 As Needed Construction Materials, Environmental Media and Special Testing Services, Construction Inspection, and Other Technical Services <i>The work included construction materials sampling and testing, environmental media sampling, soils sampling, land surveying, corrosion testing and inspection, computer-aided design, and construction inspection.</i>		2014	1291	D/CA	0	600	600	600				1,800	3	CTA
11 Miscellaneous Improvements to Raw Water Tunnels, Shafts and Related Structures <i>The work includes rehabilitation and repair improvements to raw water system, that are deemed necessary during the condition assessment project (a separate contract) to protect the structural integrity of raw water system.</i>		2014	1292	C	0			500	1,000	1,000	1,500	4,000	3	CTA

Water Works Park

12 Miscellaneous Concrete and Road Improvements at Waterworks Park WTP <i>The work includes miscellaneous crack repairs and concrete restorations on numerous walls of filter tanks bays, ozone contactors, flocculation/sedimentation basins, and various areas along walls and ceiling.</i>		2014	1274	C	0	200	2,000					2,200	3	CTA
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**Water Supply System
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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
13 Comprehensive Condition Assessment at Waterworks Park WTP		2014	1301	S	0		200	375				575	3	CTA
<p><i>The work includes determining the physical condition of all the structures (except roofing system and the reservoirs) in the plant like the High Lift Pump Station, Administration Building, Water Quality Building, Auxiliary Low Lift Pump Station, Screen House, Raw Water Booster Station and other plant facilities.</i></p>														

Springwells

14 Springwells Water Treatment Plant - Low Lift and High Lift Pump Station		2004	1071	C	0		2,000	20,000	20,000			42,000	2	CTA
<p><i>The scope of work includes construction for the replacement of High Lift and Low Lift pumps, motors, and valves, a 4800-volt switchgear, VFDs for several of the pumps in both High Lift and Low Lift Pumping Station, a local instrumentation and control system to monitor and operate equipment at the Low Lift and High Lift Station, and installation of computerized control system based on a hierarchical design consisting of a main control station and remote control stations linked to multiple PLC based local panels throughout the SPWTP (i.e., at the laboratories, filter plant, chemical areas, and other process related areas). The work will further involve constructing isolation valve chambers for each of the seven High Lift discharge lines, replacing Dewatering Pumping Units and valves, and upgrading the vacuum priming system.</i></p> <p><i>This project is being re-evaluated. Changes in scope of work, cost, and schedule are likely.</i></p>														
15 Water Production Flow Metering Improvements at Springwells WTP		2014	1264	C	0	500	2,000	600				3,100	2	CTA
<p><i>The work consists of rehabilitation of all the seven venturi meters to accurately measure water production flows from the plant. The rehabilitation includes structure as well as the instrumentation and control.</i></p>														

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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
16 Miscellaneous Concrete Improvements at Springwells WTP <i>The work includes restoration of floor slab, building columns, grade beam structure, repair of utility and pedestrian tunnel, and other concrete repair work.</i>		2014	1265	C	0	1,100	1,000					2,100	3	CTA
17 Administration Building Improvements at Springwells WTP <i>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 work also includes relocating the electrical gear from basement to first floor locker room.</i>		2014	1266	S/D/C	0				300	1,700		2,000	3	CTA
18 Replacement of Rapid Mix Units at Springwells WTP 1958 Process Train <i>The work includes removal and replacement of all the four (4) rapid mixers including electrical, mechanical and structural components.</i>		2014	1267	C	0	700	300					1,000	2	CTA
19 Powdered Activated Carbon System Improvements at Springwells WTP <i>The work includes improvements to the existing Powdered Activated Carbon System (PAC).</i>		2014	1268	S/D/C	0						2,900	2,900	2	CTA
20 1930 Sedimentation Basin Sluice Gates, Guides & Hoists Improvements at Springwells WTP <i>The work includes rehabilitation and or replacement of 1930 sedimentation basin influent and effluent cast iron gates/guides (8 nos.), mono rail electrical trolley and hoist (4 nos.), and other miscellaneous improvements including heating, electrical, structural to all the four gate houses.</i>		2014	1269	S/D/C	0		1,200	2,000	4,000	300		7,500	2	CTA

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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
21 Yard Piping Improvements at Springwells WTP <i>This project includes yard piping improvements at Springwells WTP. Formerly CIP #1248</i>		2012	1306	S/D/C	0			2,000	7,000	8,000	8,000	25,000	3	CTA
22 Steam, Condensate Return, and Compressed Air Piping Improvements at Springwells WTP <i>This project is to replace the leaking steam piping, condensate return piping and associated system at various places throughout the Springwells WTP. The scope of work also includes non functional pressure reducing valves, regulators and associated system for air compressor piping at various places in the plant. Formerly CIP #1248</i>		2012	1307	C	0		2,000	3,000	1,250			6,250	3	CTA

Northeast

23 Yard Piping Replacement at Northeast Water Treatment Plant <i>The work includes providing and installing water main, new state fair valve and bulk heads.</i>		2014	1272	D/C	0		800					800	3	CTA
24 Low Lift Pumping Plant Caisson Rehabilitation at Northeast WTP <i>The work includes repair of concrete cracks and concrete restoration to stop leakage on the concrete covers of the encased steel beams and along the inner surfaces of the caisson wall.</i>		2014	1273	D/C	0		1,000	333				1,333	3	CTA
25 Water Production Flow Metering Improvements at Northeast WTP <i>The work consists of rehabilitation of all the 6 venturi meters in the high lift transmission mains to accurately measure water production flows from the plant. The rehabilitation includes structure as well as the instrumentation and control.</i>		2014	1275	C	0	500	2,400					2,900	2	CTA

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**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
Southwest														
26 Water Production Flow Metering Improvements at Southwest WTP		2014	1276	C	0	500	2,300					2,800	3	CTA
<i>The work consists of rehabilitation of all the 5 venturi meters in the high lift transmission mains to accurately measure water production flows from the plant. The rehabilitation includes structure as well as the instrumentation and control.</i>														
27 High Lift Pump Discharge Valve Actuators Replacement at Southwest WTP		2014	1277	D/C	0	160	900	900				1,960	2	CTA
<i>The work includes demolition of the hydraulic oil based actuator system, and install of a new actuator system that will open and close the discharge valves at slow speed to avoid any water hammer effects in the transmission mains of the Southwest WTP's service area.</i>														
28 Replacement of Butterfly Valves and Sluice Gates for Rapid Mix Chamber at Southwest WTP		2014	1283	S/D/C	0						2,940	2,940	2	CTA
<i>The work includes study, design, and construction services for the replacement of 2 - 72 inch dia butterfly valves, 4 motorized sluice gates, 7 potable sluice gates, and 1 - 36 inch flag valve.</i>														
29 Residual Handling Facility's Decant Flow Modifications at Southwest WTP		2014	1297	D/C	0	200	1,100	1,500				2,800	3	CTA
<i>The work includes modifications necessary to eliminate the solids handling recycle flows from the raw water sample location serving the Southwest WTP.</i>														

**Water Supply System
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For ORCAP Committee Approval
3-3-2015

**New Projects
(000)**

Project Title	Contract No.	Year Added	CIP No.	Type	Update* 2014-15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	2019 - 20	Remaining	Total	Primary Project Purpose	Allocation Status
Lake Huron														
30 Lake Huron Water Treatment Plant Replacement of Pumping Unit No. 4 and Furnishing Variable Frequency Drive		2010	1227	C	0						1	1	3	CTA
<i>The scope of work consists of designing and replacing the existing pumping unit for the low lift pump No. R4 and equipping it with a Variable Frequency Drive with a by pass starter. Work will also include verifying the HVAC for displacement of heat being generated from proposed VFD, and integration with the ovation system.</i>														
<i>This project is being re-evaluated. Changes in scope of work, cost, and schedule are likely.</i>														
31 Water Production Flow Metering Improvements at Lake Huron Water Treatment Plant		2014	1278	C	0			1,600	1,500	1,000		4,100	2	CTA
<i>The work includes installation of a new venturi flow meter and meter vault, as well as, new bypass piping to facilitate the installation of the new meter while maintaining the plant in service during construction.</i>														
32 Miscellaneous Mechanical Improvements at Lake Huron WTP		2014	1280	D/C	0	200	1,000	1,800	415			3,415	3	CTA
<i>The work includes replacement of the existing Natural Gas-Fired hot water boilers, back flow preventers, and Katabar dehumidification units with related accessories.</i>														
33 Evaluation of Flocculation Improvement Alternatives at the LHWTP		2014	1289	S	0						125	125	2	CTA
<i>The scope of work is to identify and evaluate alternative flocculation technologies that do not require the long shafts that are currently in place, and/or alternative flocculator shaft bearings that have proven successful and reliable in this type of installation and conditions.</i>														

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34	Electrical Tunnel Rehabilitation at Lake Huron WTP <i>The work includes rehabilitative structural/concrete work that includes damaged concrete, reconstruction of the southeast corner of the tunnel and replacement of damaged cables, cable trays, duct banks etc.</i>		2014	1298	C	0			1,000	3,000	1,600		5,600	3	CTA
35	Miscellaneous Concrete Improvements at the Lake Huron Water Treatment Plant <i>Miscellaneous concrete and other improvements will be performed at several areas in the plant where significant damage, deterioration and water leakage exists such as basement floor slab crack, concrete spalling jointing repair, roof drainage improvement, pave service roads, walls and stairwells etc.</i>		2014	1299	C	0	500	1,500					2,000	3	CTA
36	Replacement of Filter Instrumentation and Raw Water Flow Metering Improvements at Lake Huron Water Treatment Plant (LHWTP) <i>The work includes replacing filters instrumentation, loss of head, effluent flow transmitter, sample piping. For the raw water conduit venturi flow metering - verify sample lines, their origin and clean out, replace piping and pressure transmitters, replace instrumentation to measure flow.</i>		2014	1300	D/C	0	200	2,800	5,000	2,800			10,800	3	CTA

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Pumping Stations and Reservoirs														
37	Isolation Gate Valves for Line Pumps for West Service Center Pumping Station	2014	1270	D/C	0	120	1,400					1,520	3	CTA
	<i>The work includes removal of existing three (3) resilient seated gate valves and installation of three (3) new metal seated gate valves on pumps L4, L5 and L6. The work also includes installation of three (3) new metal seated gate valves on pumps L1, L2, and L3. The gate valves are on the downstream side of the cone valves.</i>													
38	Hydraulic Surge Control for North Service Center Pumping Station	2014	1271	D/C	0	200	1,000	1,600				2,800	2	CTA
	<i>The work includes design and installation of a hydro-pneumatic surge tank system, pressure indicating transmitters for monitoring hydraulic transients, and other related accessories.</i>													
39	Evaluate Alternatives and Recommend Corrective Actions to Improve Power Factors (PF) at Various DWSD Booster Pumping Stations	2014	1288	S	0		125					125	3	CTA
	<i>The scope of work for this project is to evaluate the available alternatives to correct the power factor at the problematic booster pumping stations and recommend the most cost effective and reliable solution to increase the power factors above 85%.</i>													
40	Pressure and Control Improvements at the Electric, Ford, Michigan, and West Chicago Water Booster Pumping Stations	2014	1293	D/C	0	400	1,200	900				2,500	3	CTA
	<i>The work includes installation of one VFD on any one of the line pumps and to install one VFD on one of the reservoir pumping units at Electric, Ford, Michigan and West Chicago and replace the old line pumping unit and old ball valves with the existing reservoir pumping units existing cone valves at the W. Chicago Station.</i>													

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**New Projects
(000)**

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41 Freeze Pump Installation at Imlay Pumping Station <i>The work includes furnishing and installation of a freeze protection pump, motor and associated valves, fittings, and electrical and control monitoring systems.</i>		2014	1294	D/C	0						850	850	3	CTA	
42 Replacement of Division Valves at West Service Center <i>The work includes study of all division valves replacement at the West Service Center when Northeast, Springwells and Lake Huron plants will be supplying the customer demand. The study will utilize the hydraulic model to determine flow and pressure in the West Service Center's service area.</i>		2014	1295	S	0	230						230	3	CTA	
43 Needs Assessment Study for Eleven (11) Booster Pumping Stations <i>The work includes a comprehensive needs assessment for the eleven (11) booster Pumping Station Facilities namely Adams Road, Eastside, Electric Avenue, Ford Road, Franklin, Joy Road, Northwest, Newburg, Ypsilanti, West Service, and North Service center pumping stations. Study will include assessment of existing condition and providing list of improvements, upgrading the following items: Facility HVAC and Lighting, Pumping System, Electrical Switch Gear, Instrumentation, Control and Ovation, Fire Protection and Alarms etc.</i>		2014	1296	S	0	500	1,200					1,700	3	CTA	
						<u>\$10,500</u>	<u>\$52,810</u>	<u>\$115,025</u>	<u>\$123,608</u>	<u>\$108,515</u>	<u>\$57,600</u>	<u>\$16,316</u>	<u>\$473,874</u>		