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April 30, 2018

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Subject: Quarterly Report 50  
Civil Action No. 3:08-cv-00608-CRS

Attention Director and Chiefs:

Please find attached our Quarterly Report, prepared in accordance with Paragraph 29 of our Amended Consent Decree. This report is for the period January 1, 2018 – March 31, 2018, pertaining to Consent Decree compliance activities. Included are sections on Project WIN activities related to: NMC, SORP, Discharge Abatement Plans, Public Outreach, Education, Notification and Participation, CMOM and Performance Overview.

I certify under penalty of law that this document and all attachments were prepared under our direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have questions or need additional information, please contact me at (502) 540-6136.

Sincerely,

Angela Akridge, PE  
Louisville MSD Chief Engineer

cc: James A. Parrott  
Paula Purifoy  
File



# Louisville and Jefferson County Wet Weather Consent Decree Quarterly Report #50



**Reporting Period:**

January 1, 2018 through March 31, 2018

**Submitted To:**

Kentucky Department of Environmental Protection  
United States Environmental Protection Agency  
United States Department of Justice

**Submitted By:**

Louisville and Jefferson County Metropolitan Sewer District  
700 W. Liberty Street  
Louisville, Kentucky 40203-1911

**Submittal Date:**

April 30, 2018

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## TABLE OF CONTENTS

INTRODUCTION .....	1
SECTION 1: PROGRAM ACTIVITIES FOR NINE MINIMUM CONTROLS (NMC).....	3
1.1.Nine Minimum Controls Program Background .....	3
1.2.NMC 2: Maximization of Storage in the Collection System .....	3
1.3.NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center .....	5
1.4.NMC Activity Schedule.....	6
SECTION 2: PROGRAM ACTIVITIES FOR SEWER OVERFLOW RESPONSE PROTOCOL (SORP) .....	15
2.1.Program Background .....	15
2.2.Overflow Management and Field Documentation.....	15
2.3.Staff Training and Communication.....	16
SECTION 3: PROGRAM ACTIVITIES FOR DISCHARGE ABATEMENT PLANS (DAP) .....	17
3.1.Integrated Overflow Abatement Plan (IOAP).....	17
3.2.Sanitary Sewer Discharge Plan (SSDP).....	17
3.2.1. Updated Sanitary Sewer Overflow Plan (SSOP) Implementation .....	17
3.2.2. Interim Sanitary Sewer Discharge Plan (ISSDP).....	18
3.2.3. Final Sanitary Sewer Discharge Plan (SSDP) .....	18
3.3.CSO Long Term Control Plan (LTCP) .....	18
3.3.1. Interim CSO Long Term Control Plan (LTCP) .....	18
3.3.2. Final CSO Long Term Control Plan (LTCP).....	18
3.3.3. Green Infrastructure Program Update .....	19
3.4.Discharge Abatement Plan Project Status.....	19
3.4.1. Sanitary Sewer Discharge Plan (SSDP).....	19
3.4.2. Combined Sewer Overflow Long Term Control Plan (LTCP) .....	19
3.4.3. Activity Progress Chart.....	19
SECTION 4: PROGRAM ACTIVITIES FOR PUBLIC OUTREACH, EDUCATION, NOTIFICATION AND PARTICIPATION .....	29
4.1.Public Notification Program.....	29
4.2.Public Education Programs.....	29
4.3.Public Outreach Programs.....	33
4.3.1. IOAP Project and Program Meetings.....	33
SECTION 5: CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE (CMOM) REPORT .....	35
5.1.Management Programs.....	35

## TABLE OF CONTENTS

5.2.Operations Programs .....	36
5.3.Comprehensive Performance Evaluations and Composite Correction Plans (CPE/CCP).....	36
5.3.1. Hite Creek Water Quality Treatment Center .....	36
5.3.2. Floyds Fork Water Quality Treatment Center .....	36
5.3.3. Derek R. Guthrie Water Quality Treatment Center .....	36
5.3.4. Cedar Creek Water Quality Treatment Center.....	36
5.3.5. Prospect Area Water Quality Treatment Center Updates.....	37
5.3.6. Jeffersontown Water Quality Treatment Center.....	37
5.3.7. Other Water Quality Treatment Centers .....	37
5.4.CMOM Activity Schedule .....	37
SECTION 6: PROJECT WATERWAY IMPROVEMENTS NOW (WIN) PERFORMANCE OVERVIEW.....	41
6.1.Combined Sewer Overflow Reduction and Sanitary Sewer Overflow Abatement Activities .....	41
6.1.1. Sanitary Sewer Overflow Elimination Activities.....	41
6.1.2. Combined Sewer Overflow Reduction and Control Activities .....	41
6.2.Systemwide Performance .....	41
6.2.1. Rainfall .....	41
6.3.Water Quality Treatment Center Performance .....	42
6.3.1. Bypasses.....	42
6.3.2. Jeffersontown Water Quality Treatment Center.....	42
6.3.3. Phosphorus Monitoring at the Prospect WQTCs .....	42
6.4.Combined Sewer Overflow Performance.....	42
6.4.1. Authorized Discharges – Wet Weather CSOs .....	42
6.4.2. Unauthorized Discharges – Dry Weather CSOs.....	42
6.4.3. CSO Flow Monitoring Quality Improvement.....	44
6.5.Collection System Overflow Performance .....	47
6.5.1. Unauthorized Discharges to Waters of US .....	47
6.5.2. Overflows to the Exterior .....	47
6.5.3. Overflows to Interior .....	47
6.6.Gravity Line Preventive Maintenance (GLPM) .....	47
APPENDICES.....	49

## TABLES

Table 2.1. Rain Event Inspection Routes.....	15
Table 2.2. Hauled Volumes in Gallons.....	16
Table 4.1. MetroTV Broadcasts .....	29
Table 4.2. IOAP Project and Program Meetings – Current Reporting Period .....	33
Table 4.3. IOAP Project and Program Meetings – Upcoming Reporting Period .....	33
Table 6.1. Bypass Events – Current Reporting Period .....	42
Table 6.2. Bypass Summary – Current Reporting Period.....	43
Table 6.3. Dry and Wet Weather SSOs by Cause – Unauthorized Discharges to Waters of US .....	47
Table 6.4. Rolling Quarterly GLPM Performance with Targets.....	48

## FIGURES

Figure 1.1. Wet Weather Storage in the Morris Forman Sewer System via the RTC System .....	7
Figure 1.2. Morris Forman WQTC – Plant Flows and Associated CSO Activations – January 2018.....	9
Figure 1.3. Morris Forman WQTC – Plant Flows and Associated CSO Activations – February 2018 .....	10
Figure 1.4. Morris Forman WQTC – Plant Flows and Associated CSO Activations – March 2018 .....	11
Figure 1.5. NMC Quarterly Commitments Schedule.....	12
Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule.....	21
Figure 5.1. CMOM Quarterly Commitments Schedule .....	38
Figure 6.1. Daily Average Rainfall by Month.....	41
Figure 6.2. CSO Flow Monitoring Quality Improvement Status – Phase 1.....	45
Figure 6.3. CSO Flow Monitoring Quality Improvement Status – Phase 2.....	46

## APPENDICES

APPENDIX A	DISCHARGE WORK ORDERS
Appendix A-1	Discharge Work Orders – Dry Weather CSOs
Appendix A-2	Discharge Work Orders – Bypass
Appendix A-3	Discharge Work Orders – Unauthorized Discharges
APPENDIX B	CSO FLOW MONITORING DATA
APPENDIX C	ACRONYMS
APPENDIX D	SCAP BALANCE
APPENDIX E	IOAP PROJECT CROSSWALK
APPENDIX F	CSO FLOW MONITORING QUALITY IMPROVEMENT



## INTRODUCTION

The Louisville and Jefferson County Metropolitan Sewer District (MSD) is currently under an Amended Consent Decree with the Kentucky Department of Environmental Protection (KDEP), the United States Environmental Protection Agency (EPA), and the United States Department of Justice. The Amended Consent Decree was signed by United States District Judge Simpson on April 10, 2009 and filed in United States District Court, Western Division of Kentucky, Louisville Division, on April 15, 2009.

### **Quarterly Reporting Period**

This is the fiftieth Quarterly Report submitted in accordance with Paragraph 29 of the Amended Consent Decree. This report covers the time period from January 1, 2018, through March 31, 2018. The structure for this report is outlined as follows:

**Section 1: Program Activities for Nine Minimum Controls (NMC)** – This section describes the data collected for NMC 2 – Maximization of Storage in the Collection System, and NMC 4 – Maximization of Flow at the Morris Forman Water Quality Treatment Center (WQTC) that were active during the reporting period.

**Section 2: Program Activities for Sewer Overflow Response Protocol (SORP)** – This section describes the training attendance records, overflow data, and overflow reconnaissance inspection routes related to SORP that were active during the reporting period.

**Section 3: Program Activities for Discharge Abatement Plans (DAP)** – This section describes the schedule and status for projects related to the DAP by means of an updated Gantt chart for active DAP projects during the reporting period. This section also includes the anticipated projects and activities that are scheduled for continued compliance with the Amended Consent Decree.

**Section 4: Program Activities for Public Outreach, Education, Notification and Participation** – This section describes the activities related to public outreach that were active during the reporting period.

**Section 5: Capacity Management Operations and Maintenance (CMOM) Report** – The CMOM program activities and programmatic activities for WQTCs generating capital projects are reported in a Gantt chart for the reporting period. This section also includes the schedule for activities planned for the next reporting period are included in this section for continued compliance with the Amended Consent Decree.

**Section 6: Project Waterway Improvements Now (WIN) Performance Overview** – This section provides an accounting of unauthorized discharges from the separate sanitary and combined sewer systems, and the estimated volumes along with performance information on bypasses at WQTCs. A discussion of the probable reductions in both unauthorized discharge points and the discharges from MSD's Combined Sewer Overflow (CSO) locations, identified in the Morris Forman Water Quality Treatment Center Kentucky Pollutant Discharge Elimination System (KPDES) permit, that are expected to result from MSD's projects and activities during the reporting period are also contained in this section.

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## SECTION 1: PROGRAM ACTIVITIES FOR NINE MINIMUM CONTROLS (NMC)

### 1.1. NINE MINIMUM CONTROLS PROGRAM BACKGROUND

Per Paragraph 24.a. of the Amended Consent Decree, the Nine Minimum Controls (NMC) Compliance Report was initially submitted to EPA and KDEP on February 10, 2006. MSD received approval of the report on February 22, 2007. The approved NMC compliance document can be viewed on the MSD Project Waterway Improvements Now (WIN) website, available at [www.msprojectwin.org](http://www.msprojectwin.org). Highlights of the NMC program implementation over this reporting period are outlined below.

### 1.2. NMC 2: MAXIMIZATION OF STORAGE IN THE COLLECTION SYSTEM

MSD has continued operation of Phase 1 and Phase 2 of the Real Time Control (RTC) system. During this reporting period, approximately 295 MG were stored in the system during rain events and routed to the Morris Forman WQTC once the system was able to handle the flow. See Figure 1.1 at the end of this section for a detailed report.

The following identifies on-going activities; those completed during the current period; and those anticipated to be completed during the next period:

- RTC Integration – MSD and the RTC consultant continue to implement the Wet Weather Standard Operating Procedures (SOP) incrementally, starting with a period of manual operation to validate the control assumptions, followed by increasing levels of system automation as the automated controls for individual components are implemented, validated, and then incorporated into the overall RTC system.

During this reporting period, server upgrades and adjustments were performed to ensure adequate processor speed to achieve desired Infoworks Integrated Catchment Model (ICM) RTC hydraulic model, Csoft, and Gorubi software run times. MSD continued testing and updating the data scripting and transfer process utilizing the iFix software to transfer field data collected at local stations to the RTC system. In addition, new instrumentation for utilization with the RTC system were incorporated into the scripting process. The RTC consultant and MSD reviewed and finalized operational objectives based on off-line testing of 3 historic events and the 2-year/24-hour SCS type II design event testing results. In January, the RTC consultant began running Csoft4 in parallel with Csoft3 to verify performance and identify any required configuration adjustments prior to deployment.

MSD is reviewing updated drafts of the RTC standard operating procedures (SOPs) for Clifton Heights CSO Storage Basin, the Southwestern Parkway CSO Basin, and Southern Outfall Retention 1 (SOR1). These SOPs will be incorporated into the FY18 Master SOP update. Revised and updated SOPs will be implemented after the Csoft and InfoWorks ICM RTC hydraulic model is integrated. Draft SOPs will be finalized as new or upgraded facilities are brought online and commissioned into the RTC network.

SOR1 Facility construction is nearing completion and system startup testing was performed. MSD continued programming of the SOR1 facility and conducting I/O testing of connections to the programmable logic controller (PLC) in advance of the facility coming online and commissioning into the RTC network after a period of manual operation.

MSD and the RTC consultant began developing an educational presentation for engineering and operations staff focused on the fundamentals of the RTC system operation and the RTC role in the MSD system and IOAP projects.

During the next quarter, MSD anticipates completion of data script transfer process testing (iFix and Process Control Network) to ensure proper field communications and commissioning readiness. MSD and the RTC consultant will commission Csoft4 in the phase 1 and 2 RTC facilities area and incorporate the Derek Guthrie Wet Weather Service Area into RTC. MSD will continue to review and refine the Clifton, Southwestern Parkway, and SOR1 SOPs.

- RTC Performance Assessment and Improvements – The main objective of the RTC Performance Assessment is to determine whether the available flow and storage capacities within the system are being utilized to their full potential. MSD staff continues to review and prioritize strategies for performance improvement. During the next reporting period, MSD staff and the RTC consultant will continue working to implement hardware, software and set-point changes as applicable on a site-by-site basis.

During this period, two initiatives at the Southwestern Outfall Retention Phase 2 (SWOR2) site, including a simplified human-machine interface (HMI) program and adjustment to position and flow deadband parameters aimed at reducing the number of gate movements and improving site performance, remained on hold until downstream improvements at the SWPS are completed and the need can be fully assessed.

MSD has begun writing field data to the RTC system with a greater frequency in order to reduce data availability errors and system delays resulting in system stability improvements.

MSD has completed planned gate adjustments to reduce leakage from the Brady Lake and Executive Inn basins to the collection system. Actuators at both locations will be replaced in the upcoming reporting period.

MSD completed field survey to verify the constructability of the proposed Sneads Branch modifications to eliminate the Sneads Branch pumping facility by installing an actuated gate enabling the transfer of stored volumes to existing infrastructure and utilize the Logan CSO Basin pumps for dewatering the facility.

During the next reporting period, MSD will perform the geotechnical exploration for Sneads Branch and closely monitor the RTC system to ensure proper operations with the commissioning of Csoft 4. MSD will also release the Ashland RTC Facility upgrades project for construction bids. The final design for the Ashland project was completed in May 2017 and provides for the replacement of the existing gate, check valves, and actuator as well as installation of a backup generator.

- Southwest Sluice Gate / Southwestern Outfall Retention Phase 1 (SWSG/SWOR1) – A gate failure at the SWSG facility on April 1, 2016, impacted the ability of the RTC system to fully utilize storage. The new gates and actuators have been installed and the storage level was increased to 19 feet. Consequently, the available storage is now at its pre-failure level of 14.5 MG and the RTC consultant

has revised Csoft configurations accordingly. However, the site is being operated manually while MSD works to reconnect the facility to the local programmable logic controller (PLC) and updates RTC programming. It is anticipated that the site will be reintegrated into the RTC system during the next reporting period.

### 1.3. NMC 4: MAXIMIZATION OF FLOW AT THE MORRIS FORMAN WATER QUALITY TREATMENT CENTER

#### Plant Outages

Major construction on the Morris Forman WQTC Headworks Replacement Project is complete. The East Headworks was in service during the reporting period. Channels were taken out of service due to low flow as appropriate. Channel Two of the West Headworks remained out of service for the majority of the period for contractor work and inspection. The Final Effluent Pump Station (FEPS) was in service 35 days of the reporting period. Plant capacity was 280 MGD for the majority of the period. Flows at Morris Forman WQTC were sustained between 120 and 160 MGD as shown in Figures 1.2 through 1.4, depending on equipment in service, before allowing flow to bypass secondary treatment during the reporting period.

#### Morris Forman WQTC Projects

- Morris Forman WQTC Headworks Replacement – Substantial completion on East & West Headworks is anticipated during the next reporting period.
- Morris Forman WQTC FEPS Generator – Substantial completion achieved December 21, 2017. Final completion is anticipated during the upcoming reporting period.
- Morris Forman WQTC High Yard Modifications – Substantial completion is anticipated during the next reporting period. Final completion is projected for the first quarter of FY19. Switchgear repairs (originally scheduled for mid-February) have been delayed 3 times thus far due to high river elevations and inclement weather. Repairs are currently scheduled for mid-April, and will be followed by capacitor startup.
- Morris Forman WQTC Centrifuge Electrical Controls – The project reached final completion on March 15, 2018.
- Morris Forman WQTC Oxygen Generation Plants 1 and 2 Replacement – System installation is substantially complete and has been providing 100% of the oxygen demand to the facility. MSD will complete controls wiring and programming during the next reporting period. Final completion is anticipated during the first quarter of FY19.

#### Morris Forman WQTC Performance

Figures 1.2 through 1.4 located at the end of this section illustrate performance in maximizing flow during wet weather to the Morris Forman WQTC. The top of the chart shows rainfall in inches per day. The middle part of the chart shows Morris Forman WQTC effluent flow and secondary treatment flow. The difference between these flows is the secondary bypass flow. The bottom of the chart shows days with a CSO activation at the five CSOs in the vicinity of the Morris Forman WQTC (CSOs 015, 016, 191, 210, and 211).

Note that the flow meter downstream from CSO211 is known to be affected by Ohio River backwater effects and the ultrasonic signal is sometimes blocked by mist and condensation when air and sewage temperatures are significantly different. Therefore, CSO activations at CSO211 are keyed to water levels upstream and downstream of the inflatable dam in the Main Diversion Structure. The other CSO activations are tied to flow measurement downstream of the respective CSO. At times, “blips” representing very small volumes of overflow are indicated by flow meters even though an overflow cannot be verified by level measurements or other indicators. These blips are not reported as overflows, but are noted in the CSO monitoring data reported in Appendix B. In addition, indications of rainfall and CSO activations are shown on the day they happened, but are not aligned with the exact time, so the effluent flow graph (which is tied to actual time) may show peaks that are offset from the indicated rain or CSO events by as much as 24 hours.

There are occasions in which a communications failure with telemetry has led to short-term gaps in the data. This is illustrated by multiple gaps in flow shown in Figures 1.2 through 1.4, including January 11 and 12, during a planned power outage at Morris Forman; February 6 through February 19, when an attempt to synchronize data between two historical databases resulted in a data loss for the period in question (estimated flow has been provided based on other available parameters; no data is available February 11 00:00 through February 13 10:00). On multiple occasions (January 12 15:15 - 20:30, January 21 23:30 - January 22 9:15, February 21 20:30, February 23 5:45, February 24 18:00, February 24 18:45, February 24 19:30, February 25 9:15 - 9:30), February 26 9:00-11:15, February 26 18:30, February 28 16:30-17:00, March 1 7:30, March 1 14:30, March 25 16:15-18:30, March 29 16:00) secondary effluent flow fell slightly below 120 MGD due to issues with the effluent flow meter; the meter was replaced on March 23, shown on Figure 1.4 when the effluent and secondary effluent flow read zero.

For the month of January 2018, Morris Forman WQTC did not meet the Seven and 30 Day Secondary Effluent Total Suspended Solids (TSS), TSS Percent Removal, Seven and 30 Day Secondary Effluent Biochemical Oxygen Demand (BOD), and BOD Percent Removal limits. For the month of February 2018, Morris Forman WQTC did not meet the Seven and 30 Day Secondary Effluent Total Suspended Solids (TSS), TSS Percent Removal, Seven and 30 Day Secondary Effluent Biochemical Oxygen Demand (BOD), BOD Percent Removal, and One Day Chlorine Residual limits. For the month of March 2018, Morris Forman WQTC did not meet the Seven and 30 Day Secondary Effluent Total Suspended Solids (TSS), TSS Percent Removal, and Seven and 30 Day Secondary Effluent Biochemical Oxygen Demand (BOD) limits. MSD continues to employ additional solids processing methods, including dewatered cake and an outside vendor to assist with solids handling in addition to purchasing additional liquid oxygen in an effort to meet permit requirements.

#### 1.4. NMC ACTIVITY SCHEDULE

NMC capital project milestones for the current reporting period as well as a look-ahead for the upcoming reporting period are provided in Figure 1.5.

Figure 1.1. Wet Weather Storage in the Morris Forman Sewer System via the RTC System



Louisville/Jefferson County  
Metropolitan Sewer District

WET WEATHER STORAGE IN THE MORRIS FORMAN SEWER SYSTEM VIA THE RTC SYSTEM



Period	
From :	01/01/2018
To :	04/01/2018

Event Number	Wet Weather Event			Rainfall			CSO Saved Volume (MG)								High River Levels	Comments
	Start Date	End Date	Duration	Average*	Max**		SWPS SG Chamber (14.5)	SWOR2 (4.1)	Brady Lake and Executive Inn Storage (13.4)	Southern Outfall (3.5)	Ashland (1.0)	Ohio River Interceptor (4.1)	Sneads Branch (2.5)	Total (43.1)		
				TRFD (in)	TRFD (in)	Rain Gauge										
2018-002	1/11/18 7:20	1/13/18 7:25	48:05:00	0.55	0.69	TR14	3.70	3.60	1.30	6.70	1.00	7.85	0.05	24.20	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-006	1/22/18 10:50	1/23/18 3:30	16:40:00	0.14	0.22	TR04	0.00	2.80	0.75	****	0.65	****	0.05	4.25	0	Small storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually. **** MDS data unavailable from 01/21/2018 23:40 to 01/22/2018 15:55.
2018-007	1/27/18 13:20	1/28/18 3:05	13:45:00	0.42	0.53	TR12	1.25	1.80	0.85	2.10	0.40	4.00	0.05	10.45	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-010	2/6/18 23:10	2/7/18 21:35	22:25:00	0.63	0.74	TR14	9.70	3.85	1.20	3.40	0.90	4.00	0.40	23.45	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-011	2/10/18 5:40	2/12/18 2:45	45:05:00	0.60	0.73	TR14	9.65	4.80	2.50	3.70	1.15	4.35	0.45	26.60	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-013	2/14/18 6:00	2/15/18 6:55	24:55:00	0.48	0.65	TR12	4.95	5.35	2.15	3.80	1.50	4.50	0.20	22.45	1	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-014	2/16/18 2:15	2/19/18 8:55	78:40:00	0.94	1.18	TR12	10.95	3.45	3.50	3.60	0.75	4.20	0.20	26.65	1	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-016	2/21/18 4:40	2/23/18 1:10	44:30:00	2.07	2.40	TR04	1.30	1.05	1.15	2.95	0.10	3.45	2.85	12.85	1	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-017	2/23/18 1:10	2/27/18 8:00	102:50:00	4.08	4.70	TR14	7.45	6.95	6.90	6.95	0.50	8.15	5.00	41.90	1	Very large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-021	3/9/18 23:30	3/10/18 16:05	16:35:00	0.54	0.60	TR05	6.65	3.60	1.20	2.55	0.75	3.00	0.30	18.05	0	Moderate back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-022	3/11/18 21:30	3/12/18 21:55	24:25:00	0.18	0.24	TR12	0.40	1.25	0.35	0.40	0.05	4.20	0.05	6.70	0	Small back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-024	3/19/18 12:55	3/21/18 3:00	38:05:00	0.39	0.51	TR13	1.20	0.10	0.05	2.45	0.00	3.60	0.05	7.45	0	Small storm cells heterogeneously distributed over the service area. The SWSG site was controlled manually.
2018-025	3/21/18 18:30	3/23/18 2:30	32:00:00	0.58	0.75	TR12	1.60	0.95	0.25	0.00	0.25	2.00	0.00	5.05	0	Moderate storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-026	3/24/18 4:05	3/26/18 7:35	51:30:00	1.13	1.27	TR11	12.20	4.20	1.80	2.85	0.85	3.35	0.95	26.20	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
2018-028	3/27/18 14:10	3/31/18 7:45	89:35:00	1.14	1.33	TR13	16.40	4.65	4.30	5.00	1.15	5.85	1.20	38.55	0	Large back-to-back storm cells homogeneously distributed over the service area. The SWSG site was controlled manually.
<b>TOTAL</b>							<b>87.40</b>	<b>48.40</b>	<b>28.25</b>	<b>46.45</b>	<b>10.00</b>	<b>62.50</b>	<b>11.80</b>	<b>294.80</b>		

\* Average total rainfall depth based on rain gauges TR04, TR05, TR11, TR12, TR13, TR14 and TR15  
 \*\* Maximum total rainfall depth measurement and location during the wet weather event  
 \*\*\* MDS is always manually controlled by operator

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Figure 1.2. Morris Forman WQTC – Plant Flows and Associated CSO Activations – January 2018

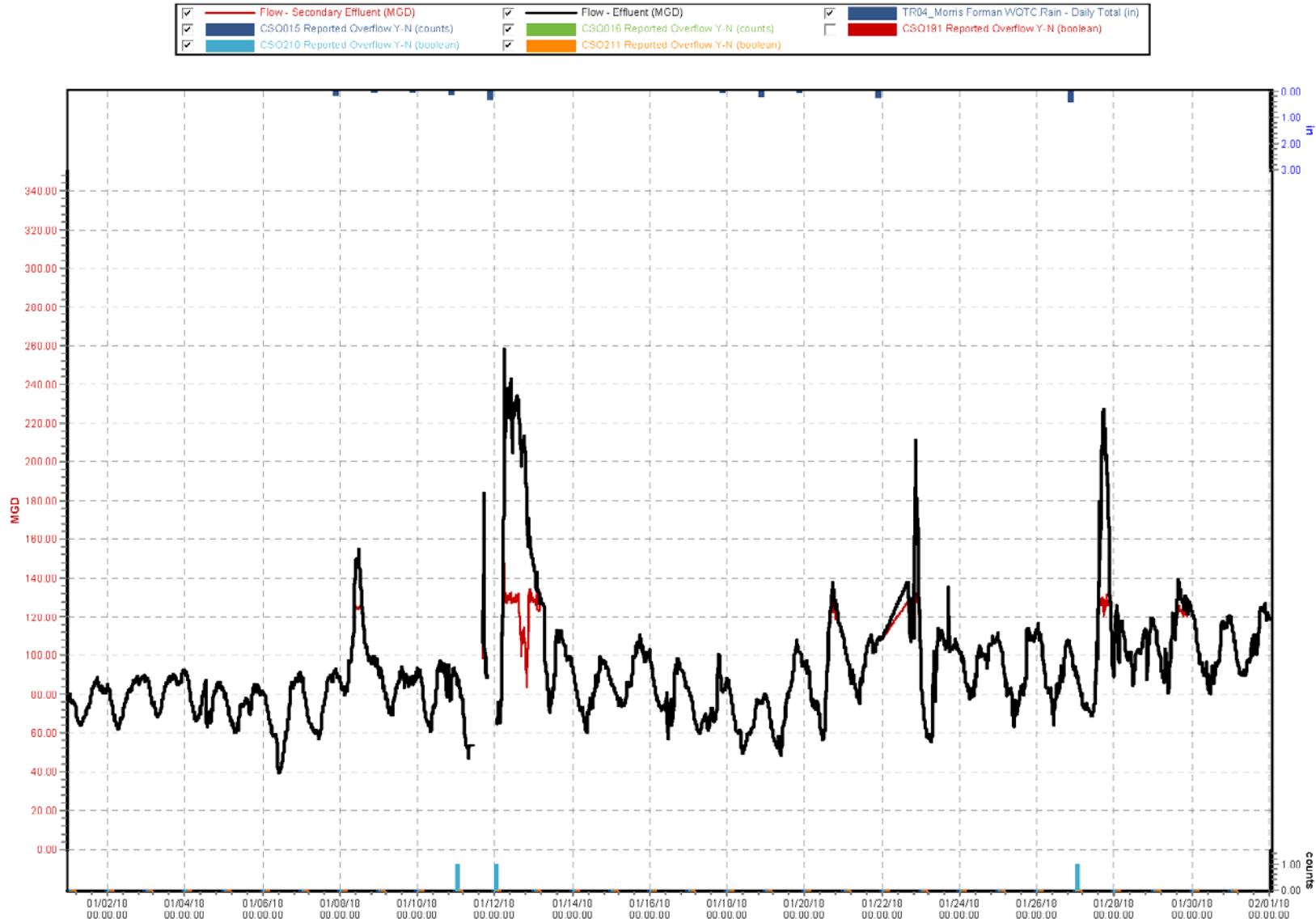


Figure 1.3. Morris Forman WQTC – Plant Flows and Associated CSO Activations – February 2018

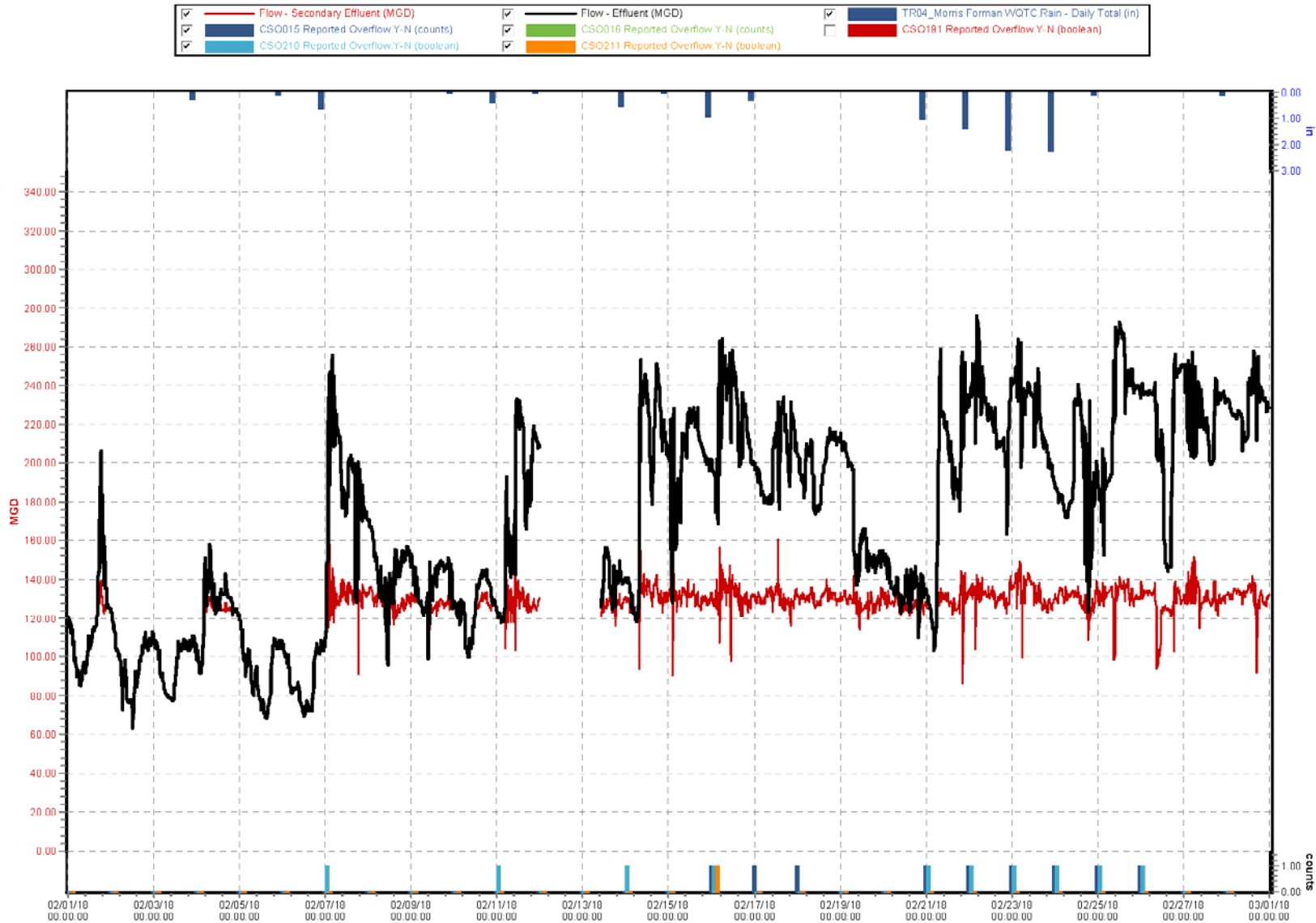
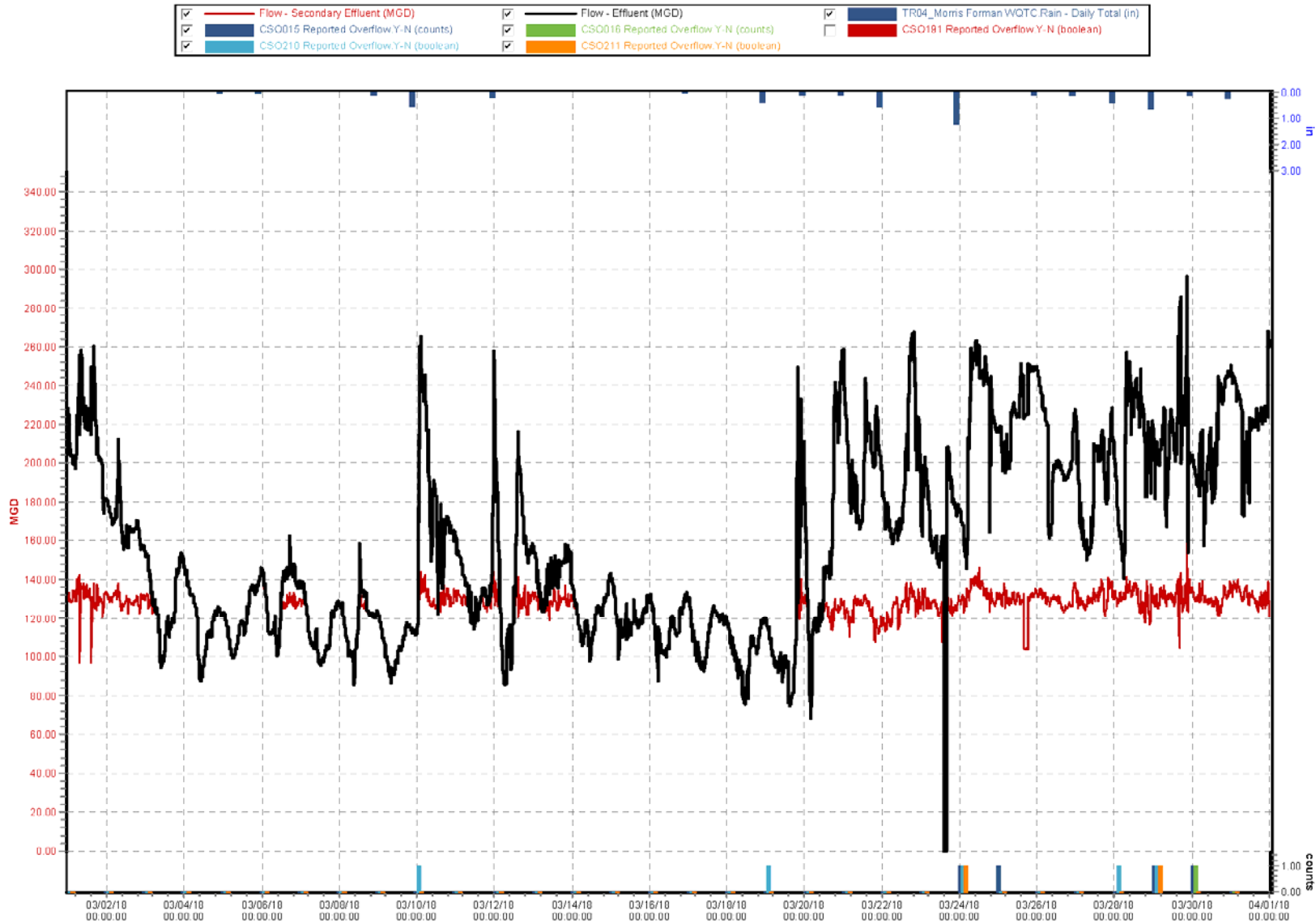


Figure 1.4. Morris Forman WQTC – Plant Flows and Associated CSO Activations – March 2018



**Figure 1.5. NMC Quarterly Commitments Schedule**

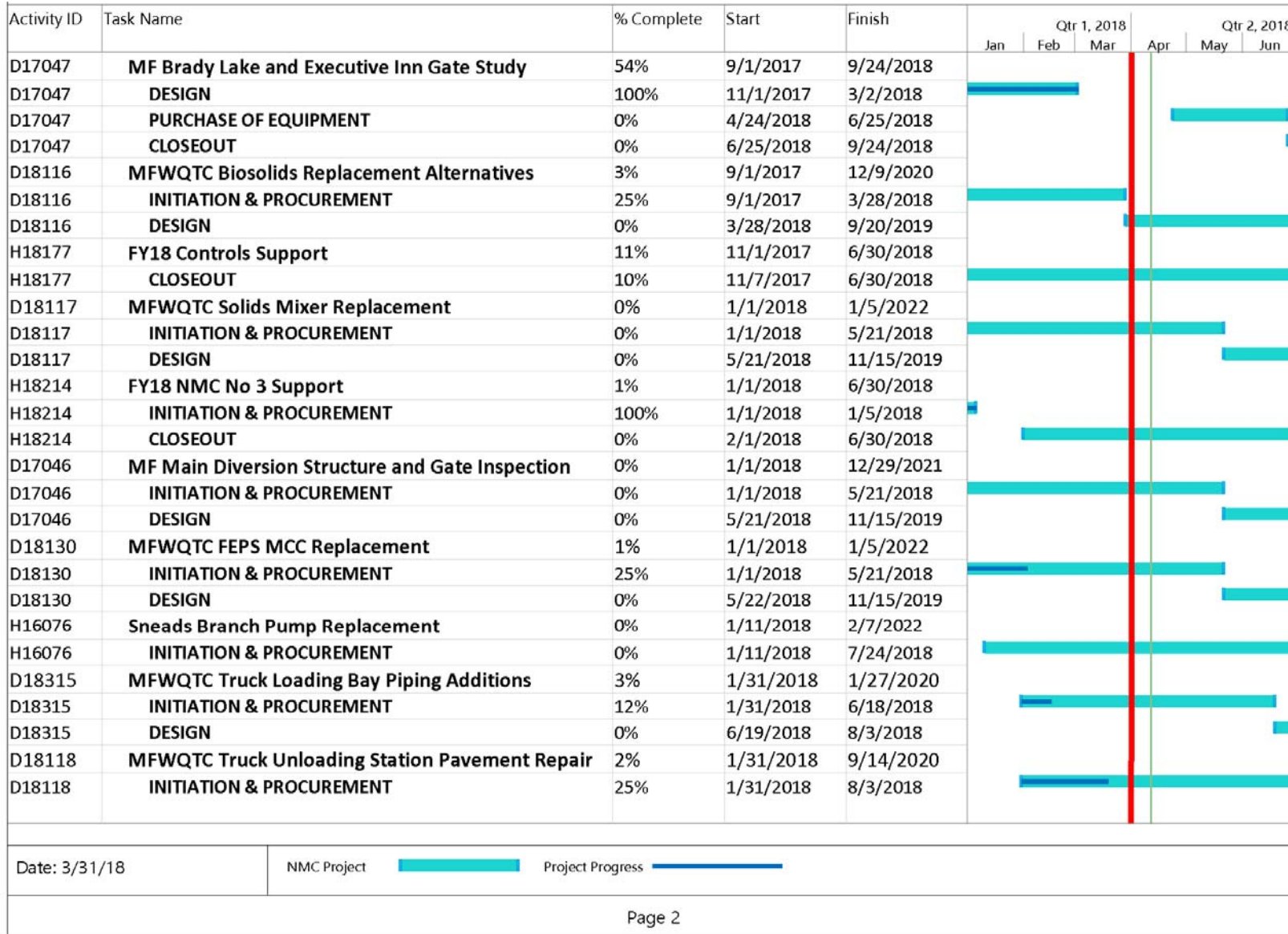
Activity ID	Task Name	% Complete	Start	Finish	Qtr 1, 2018			Qtr 2, 2018		
					Jan	Feb	Mar	Apr	May	Jun
	<b>MSD NMC Quarterly Commitments Schedule</b>	45%	1/1/2014	8/25/2023						
D15017	<b>MFWQTC Centrifuge Elec Controls</b>	99%	11/12/2014	3/26/2019						
D15017	CONSTRUCTION	100%	10/1/2015	3/15/2018	█	█	█			
D15017	CLOSEOUT	0%	12/6/2017	3/26/2019				█	█	█
D15127	<b>MFWQTC Process Water Line Replacement</b>	100%	1/21/2015	3/8/2018						
D15127	CLOSEOUT	100%	1/21/2015	3/8/2018	█	█	█			
D15016	<b>MFWQTC Biotower Repairs</b>	0%	6/1/2015	8/25/2023						
F14183	<b>MFWQTC FEPS Generator</b>	97%	6/5/2015	3/27/2019						
F14183	CONSTRUCTION	99%	6/5/2015	4/13/2018	█	█	█			
F14183	CLOSEOUT	0%	12/5/2017	3/27/2019				█	█	█
F13016	<b>MF High Yard Modification</b>	88%	7/2/2015	3/8/2019						
F13016	CONSTRUCTION	90%	7/2/2015	4/12/2018	█	█	█			
F13016	CLOSEOUT	0%	3/21/2018	3/8/2019				█	█	█
F09510	<b>MF OGA Plants 1 and 2 Replacement</b>	97%	9/14/2015	3/27/2019						
F09510	CONSTRUCTION	98%	12/1/2015	4/30/2018	█	█	█			
F09510	CLOSEOUT	3%	11/20/2017	3/27/2019				█	█	█
F13041	<b>Vactor Pit</b>	88%	11/1/2015	3/4/2019						
F13041	CONSTRUCTION	86%	9/29/2016	3/2/2018	█	█	█			
F13041	CLOSEOUT	2%	11/10/2017	3/4/2019				█	█	█
H16357	<b>SWOR2 Generator</b>	75%	4/1/2016	7/1/2018						
H16357	CLOSEOUT	0%	10/23/2017	7/1/2018				█	█	█
H17005	<b>RTC Support</b>	96%	7/1/2016	6/30/2018						
H17005	CLOSEOUT	75%	7/1/2016	6/30/2018				█	█	█
H18215	<b>FY18 Local Limits for CCWQTC</b>	4%	9/1/2017	6/30/2018						
H18215	CLOSEOUT	0%	2/1/2018	6/30/2018				█	█	█
H14065	<b>FY18 NMC</b>	83%	9/1/2017	6/30/2018						
H14065	CLOSEOUT	0%	9/1/2017	6/30/2018				█	█	█

Date: 3/31/18

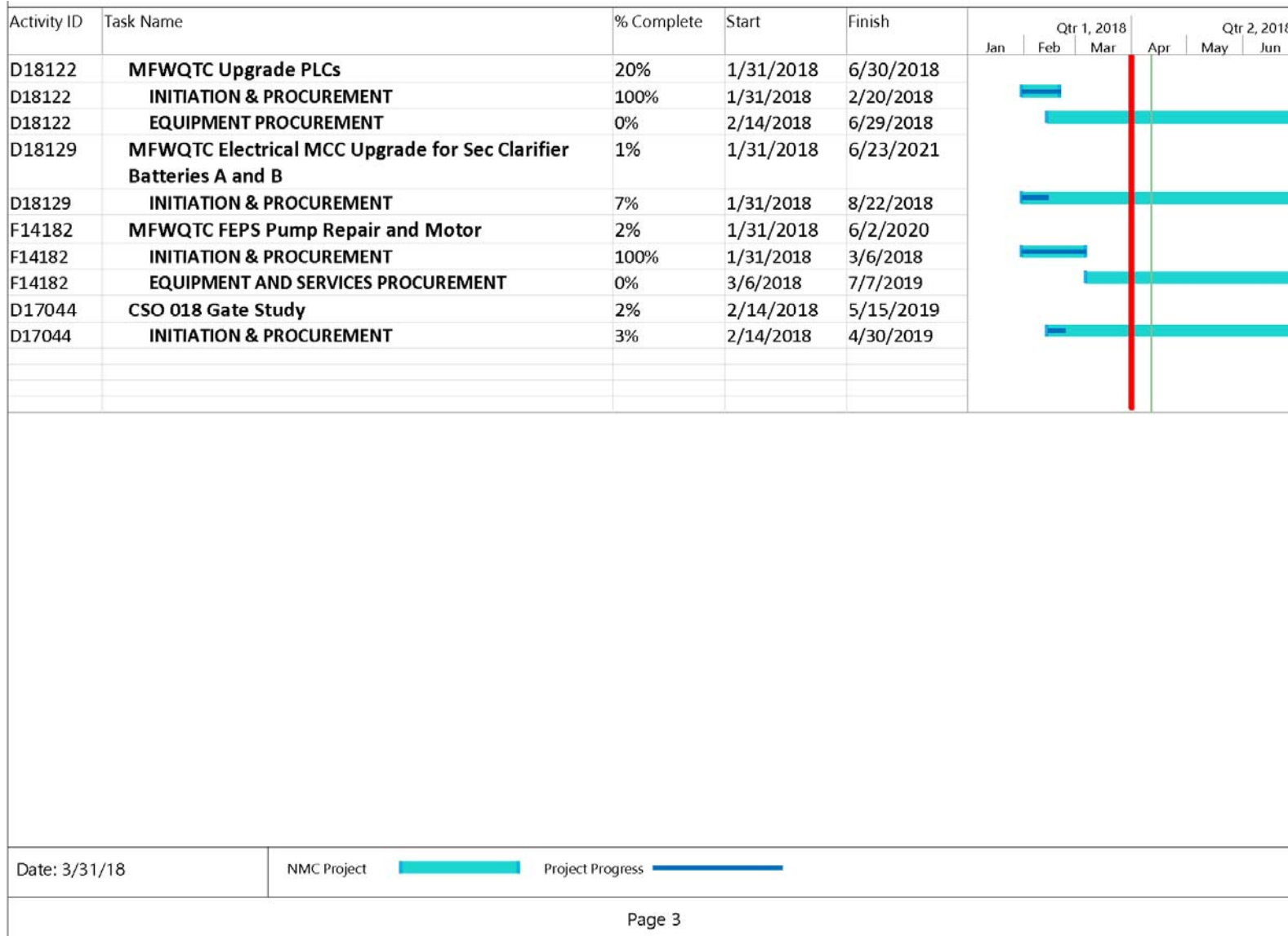
NMC Project █ Project Progress █

Page 1

**Figure 1.5. NMC Quarterly Commitments Schedule**



**Figure 1.5. NMC Quarterly Commitments Schedule**



## SECTION 2: PROGRAM ACTIVITIES FOR SEWER OVERFLOW RESPONSE PROTOCOL (SORP)

### 2.1. PROGRAM BACKGROUND

Per Paragraph 24.d. of the Amended Consent Decree, MSD initially submitted the Sewer Overflow Response Protocol (SORP) to EPA and KDEP on February 10, 2006, and received comments on March 13, 2006.

MSD completely revised the SORP documentation in 2011. The draft of this revised document was submitted for comment on August 22, 2011. Comments from EPA and KDEP were received and addressed, and the document was resubmitted October 28, 2011. Final approval of the updated SORP document was received February 21, 2012. Modifications were made to the document in 2016 to reflect the elimination of the Jeffersontown WQTC, and were approved on July 21, 2017. A hard copy of the approved document has been distributed to each division throughout MSD and a viewable, downloadable electronic version has been posted to the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org). The following activities were performed during this reporting period.

### 2.2. OVERFLOW MANAGEMENT AND FIELD DOCUMENTATION

MSD monitored approximately 134 sanitary sewer overflow (SSO) sites, which have been grouped into routes based on the range of rainfall rates necessary to cause a SSO. These routes are monitored during rain events depending on the magnitude and location of the storm. If an overflow is observed, a Discharge Work Order is created to document the event. During this quarter, 81 unauthorized discharges were identified through route reconnaissance. Inspection routes were run during rain events, as described in Table 2.1.

MSD Operations staff hauled 382,700 gallons due to capacity-related issues during this reporting period. Hauling was also initiated due to other issues as indicated in Table 2.2.

**Table 2.1. Rain Event Inspection Routes**

DATE	ENGINEERING	HIKES POINT	JTOWN	JTOWN & FERN CREEK	MIDDLE FORK & MUDDY FORK	WEST COUNTY
February 11, 2018	X	X	X	X	X	X
February 16, 2018	X	X	X	X	X	X
February 21, 2018		X	X	X	X	X
February 22, 2018	X					
February 23, 2018	X					
February 24, 2018	X					
February 25, 2018	X					
March 24, 2018		X	X	X	X	X
March 28, 2018		X			X	X
March 29, 2018		X	X	X	X	X

**Table 2.2. Hauled Volumes in Gallons**

PROBLEM	JAN	FEB	MAR
LACK OF SYSTEM CAPACITY	0	360,700	22,000
ELECTRICAL PROBLEMS	0	0	7,000

### 2.3. STAFF TRAINING AND COMMUNICATION

MSD launched a new online training delivery system to allow more flexibility for employees to complete training at convenient times during the quarter and to integrate SORP training with new employee and contractor orientation. The existing training program was reviewed, updated, and repackaged into an enhanced online format for the 2018 first quarter SORP training that included three modules under Reporting and Follow-up:

- SORP Overview
- SORP Process Overview
- Monitoring & Mobilization

A fourth module was developed that included updates related to progress under the IOAP and projects under the CMOM and NMC programs. The modules were successfully delivered to 296 staff in Operations and Engineering.

The two modules being developed to provide a SORP overview include the purpose for the SORP process, definitions and history related to overflows and the Clean Water Act, applicable regulations, obligations of MSD employees and contractors, and an overview of the procedures, including the procedure MSD employees and contractors need to follow should an overflow occur. It is anticipated that these modules will be customized for contractors and for MSD employees who are not directly responsible for overflow response, to be used for annual training and onboarding.

Second quarter training is now being repackaged to utilize the online format, and includes three modules under Assessment, Mitigation, & Documentation:

- Overflow Assessment
- Overflow Mitigation
- Minimum Documentation for Reporting

A fourth module is also being developed to provide continued updates related to progress under the IOAP and projects under the CMOM and NMC programs.



## SECTION 3: PROGRAM ACTIVITIES FOR DISCHARGE ABATEMENT PLANS (DAP)

### 3.1. INTEGRATED OVERFLOW ABATEMENT PLAN (IOAP)

As a requirement of the Amended Consent Decree, per Paragraph 25, MSD is to prepare and submit for review and approval discharge abatement plans for the elimination of unauthorized discharges from the separate sanitary and the combined sewer systems, the reduction and control of discharges from the CSO locations identified in the Morris Forman WQTC KPDES permit, and the improvement of water quality in the receiving waters.

The Final Sanitary Sewer Discharge Plan (SSDP) and the Final CSO Long Term Control Plan (LTCP) were submitted concurrently and certified on December 19, 2008, under the title of the Integrated Overflow Abatement Plan (IOAP). The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by a Federal Order signed February 12, 2010, and was entered into public record on February 15, 2010.

MSD submitted an IOAP modification request to EPA/KDEP on September 20, 2012, with partial approval granted via certified letter on October 25, 2012. The modified project package, including program descriptions, progress, and updated supporting text, was submitted to EPA/KDEP for approval on June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The project and program modifications proposed within this submittal resulted from additional information gathered from ongoing system monitoring, hydraulic modeling and best professional judgment. MSD's adaptive management approach to overflow abatement has justified modifications which provide a higher level of overflow control. These modifications will be completed faster than originally proposed for approximately the same overall budget.

Since the June 19, 2014, approval of the 2012 IOAP Modification, minor project modification requests have been submitted and approved on an individual project basis.

### 3.2. SANITARY SEWER DISCHARGE PLAN (SSDP)

The Sanitary Sewer Discharge Plan (SSDP) addresses the overflows and unauthorized discharges from the separate sanitary sewer system. Three separate plans have been submitted under this program as described below and outlined in Paragraph 25.a. of the Amended Consent Decree.

#### 3.2.1. UPDATED SANITARY SEWER OVERFLOW PLAN (SSOP) IMPLEMENTATION

MSD prepared and submitted the Updated Sanitary Sewer Overflow Plan (SSOP) on February 10, 2006. This plan included an overview of the MSD sanitary sewer overflow abatement program and specific actions taken to reduce/eliminate overflows from the sanitary sewer system. This document included a list of the proposed improvements to be accomplished by December 31, 2008. Activities required under the Updated SSOP have been completed.

### 3.2.2. INTERIM SANITARY SEWER DISCHARGE PLAN (ISSDP)

MSD submitted an Interim Sanitary Sewer Discharge Plan (ISSDP) for approval on September 30, 2007. Comments were received on January 8, 2008. MSD resubmitted the revised ISSDP on March 7, 2008, and received an approval letter for the ISSDP on July 24, 2008. The approved document can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org).

All projects required by the ISSDP have been completed and certified. The Derek R. Guthrie WQTC Project's completion was delayed in accordance with the construction contract documents due to existing litigation and performance by the general contractor. However, the full functionality and capacity of the plant upgrades under this project met the demands of the service area. With this understanding, a revised certification letter dated October 19, 2015, was submitted certifying that the Derek R. Guthrie WQTC Project is performing in accordance with its stated intent and purpose, and is in compliance with the Consent Decree requirements.

### 3.2.3. FINAL SANITARY SEWER DISCHARGE PLAN (SSDP)

MSD submitted for approval a Final SSDP on December 19, 2008, as Volume 3 of the IOAP. The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by a Federal Order signed February 12, 2010, and was entered into public record on February 15, 2010. A revised SSDP was included in the 2012 IOAP Modification, submitted on June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The approved document can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org).

## 3.3. CSO LONG TERM CONTROL PLAN (LTCP)

The CSO Long Term Control Plan (LTCP) addresses the overflows and unauthorized discharges from the Combined Sewer System (CSS). Two separate plans have been submitted under this program as described below and outlined in Paragraph 25.b. of the Amended Consent Decree.

### 3.3.1. INTERIM CSO LONG TERM CONTROL PLAN (LTCP)

The Interim CSO LTCP was initially submitted to EPA and KDEP on February 10, 2006, and MSD received an approval letter dated February 22, 2007. The approved Interim LTCP can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org). This plan includes an overview of the MSD program, efforts taken to reduce/eliminate discharges from the CSS, and the list of proposed improvements to be accomplished by December 31, 2008. All projects associated with this plan have been completed.

### 3.3.2. FINAL CSO LONG TERM CONTROL PLAN (LTCP)

MSD submitted for approval the Final CSO LTCP on December 19, 2008, as Volume 2 of the Integrated Overflow Abatement Plan. The IOAP was accepted by the Federal Court and incorporated by reference into the Amended Consent Decree by an Order signed February 12, 2010, and was entered into public record on February 15, 2010. A revised LTCP was included in the 2012 IOAP Modification, submitted June 14, 2013. On June 19, 2014, MSD received approval of the 2012 IOAP Modification from EPA/KDEP. The approved document can be viewed on the MSD Project WIN website, available at [www.msprojectwin.org](http://www.msprojectwin.org).

### 3.3.3. GREEN INFRASTRUCTURE PROGRAM UPDATE

No new Green Infrastructure Program projects were procured during the current reporting period. The intent of the Green Infrastructure Program is to provide additional overflow volume reduction benefits to complement LTCP projects. Projects are selected for incentive by providing high value for residual AAOV reduction based on the latest modeling results.

## 3.4. DISCHARGE ABATEMENT PLAN PROJECT STATUS

### 3.4.1. SANITARY SEWER DISCHARGE PLAN (SSDP)

Per the current approved schedule, no SSDP projects were completed during the reporting period. Per the current approved schedule, no SSDP projects are anticipated to be completed or certified during the next reporting period.

### 3.4.2. COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN (LTCP)

Per the current approved schedule, no CSO LTCP projects were completed during the current reporting period. Per the current approved schedule, no CSO LTCP projects are anticipated to be completed or certified during the next reporting period.

### 3.4.3. ACTIVITY PROGRESS CHART

A Gantt chart showing the 2012 IOAP Modification project schedules and subsequent approved minor modifications for the entire program is provided in Figure 3.1. Refer to IOAP, Volume 1 – Figure 6.3.1 for the previous chart.

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Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)

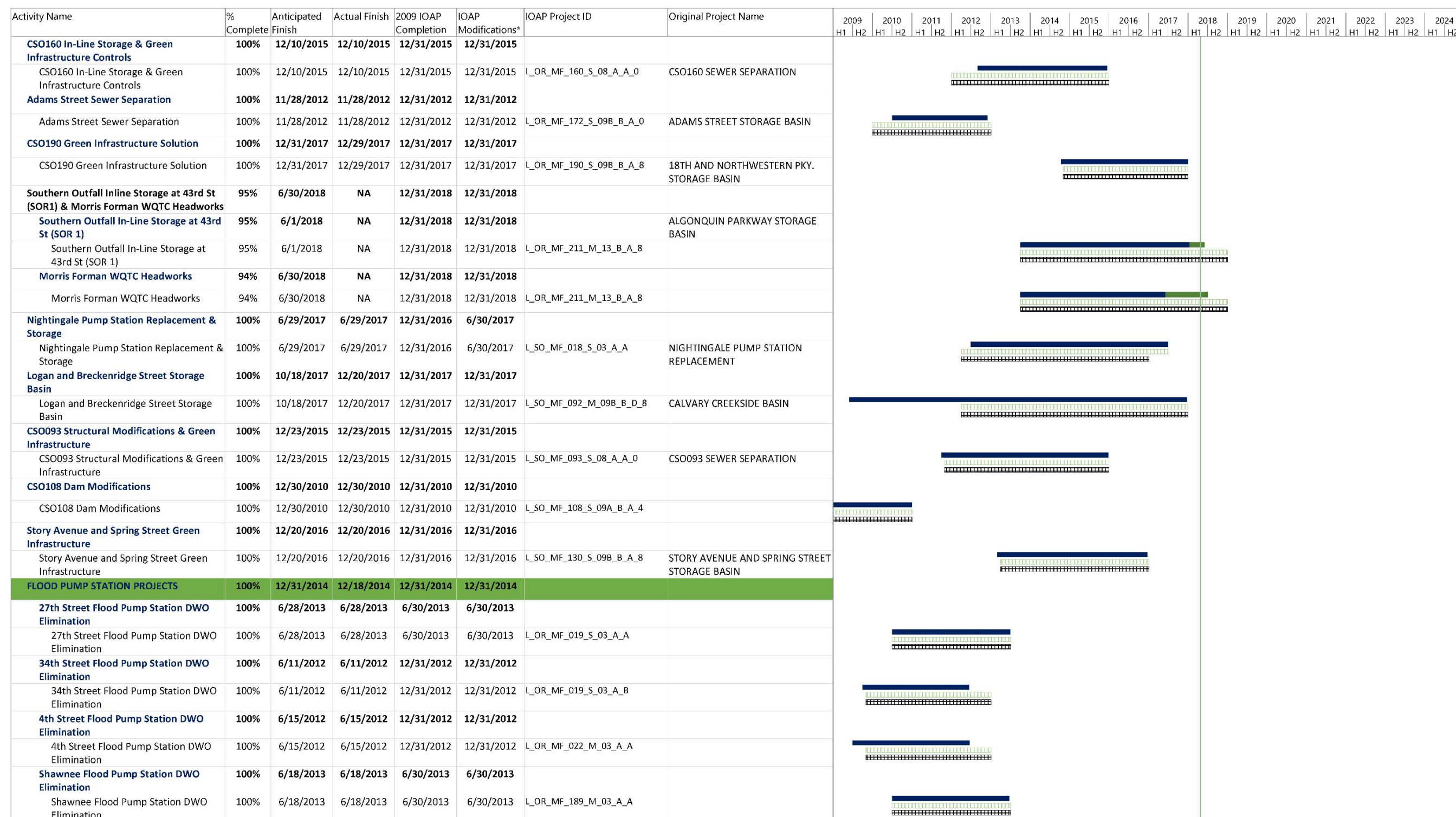
Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009-2024																							
								2009 H1	2009 H2	2010 H1	2010 H2	2011 H1	2011 H2	2012 H1	2012 H2	2013 H1	2013 H2	2014 H1	2014 H2	2015 H1	2015 H2	2016 H1	2016 H2	2017 H1	2017 H2	2018 H1	2018 H2	2019 H1	2019 H2	2020 H1	2020 H2
<b>MSD IOAP ANNUAL SCHEDULE</b>																															
<b>LONG TERM CONTROL PLAN</b>																															
<b>GREEN DEMONSTRATION PROJECTS</b>																															
Green Infrastructure Demonstration Projects	100%	12/19/2011	12/19/2011	12/31/2011	12/31/2011			[Gantt chart bars for Green Infrastructure Demonstration Projects]																							
Green Infrastructure Program	76%	12/31/2020	NA	12/31/2020	12/31/2020			[Gantt chart bars for Green Infrastructure Program]																							
<b>GRAY INFRASTRUCTURE PROJECTS</b>																															
Ohio River Tunnel	36%	7/29/2020	NA	12/31/2020	12/31/2020	L_OR_MF_155_M_09B_B_B_4 L_OR_MF_020_S_09B_B_A_8 L_OR_MF_083_M_09B_B_A_8	13TH STREET AND ROWAN STREET STORAGE BASIN, STORY AVENUE AND MAIN STREET STORAGE BASIN,	[Gantt chart bars for Ohio River Tunnel]																							
CSO058 In-Line Storage and Green Infrastructure	100%	12/23/2014	12/18/2014	12/31/2014	12/31/2014	L_OR_MF_058_S_08_A_A_0		[Gantt chart bars for CSO058 In-Line Storage and Green Infrastructure]																							
CSO123 Downspout Disconnection	100%	12/30/2012	12/30/2012	12/31/2012	12/31/2012	L_MI_MF_123_S_08_A_A_0		[Gantt chart bars for CSO123 Downspout Disconnection]																							
I-64 and Grinstead Drive Storage Basin	64%	9/16/2019	NA	12/21/2014	12/31/2020	L_MI_MF_127_M_09B_B_A_8		[Gantt chart bars for I-64 and Grinstead Drive Storage Basin]																							
CSO140 In-Line Storage & Green Infrastructure Controls	100%	12/23/2015	12/23/2015	12/31/2015	12/31/2015	L_MI_MF_140_S_08_A_A_0	CSO140 SEWER SEPARATION	[Gantt chart bars for CSO140 In-Line Storage & Green Infrastructure Controls]																							
CSO206 Sewer Separation	100%	12/12/2013	12/12/2013	12/31/2013	12/30/2013	L_MI_MF_206_S_08_A_A_0		[Gantt chart bars for CSO206 Sewer Separation]																							
Clifton Heights Storage Basin	88%	9/5/2018	NA	12/31/2018	12/31/2018	L_MU_MF_154_M_09B_B_A_8		[Gantt chart bars for Clifton Heights Storage Basin]																							
Bells Lane Wet Weather Treatment Facility	100%	7/24/2017	7/24/2017	12/31/2014	9/30/2017	L_OR_MF_015_M_13_B_B_8	PADDY'S RUN WET WEATHER TREATMENT FACILITY	[Gantt chart bars for Bells Lane Wet Weather Treatment Facility]																							
Portland CSO Basin	66%	9/25/2019	NA	12/31/2019	12/31/2019	L_OR_MF_019_S_13_B_A_8	PORTLAND WHARF STORAGE BASIN	[Gantt chart bars for Portland CSO Basin]																							
Southwestern Parkway Storage Basin	67%	12/31/2018	NA	12/31/2018	12/31/2018	L_OR_MF_105_M_13_B_A_0	SOUTHWESTERN PARKWAY STORAGE BASIN	[Gantt chart bars for Southwestern Parkway Storage Basin]																							
Central Relief Drain CSO In-Line Storage, Green Infrastructure & Distributed Storage	75%	8/16/2018	NA	NA	12/31/2018	L_OR_MF_155_M_09B_B_B_4		[Gantt chart bars for Central Relief Drain CSO In-Line Storage, Green Infrastructure & Distributed Storage]																							

Approved 2009 IOAP [dotted line] IOAP Modifications [dashed line] Remaining Work [dotted line] Completed Work [solid green line] Composite Schedule [solid blue line] Composite Completed [solid orange line]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)



Approved 2009 IOAP IOAP Modifications Remaining Work Completed Work Composite Schedule Composite Completed

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	Schedule																							
								2009 H1	2009 H2	2010 H1	2010 H2	2011 H1	2011 H2	2012 H1	2012 H2	2013 H1	2013 H2	2014 H1	2014 H2	2015 H1	2015 H2	2016 H1	2016 H2	2017 H1	2017 H2	2018 H1	2018 H2	2019 H1	2019 H2	2020 H1	2020 H2
<b>17th Street Flood Pump Station DWO Elimination</b>	100%	12/18/2014	12/18/2014	12/31/2014	12/31/2014			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2]																							
17th Street Flood Pump Station DWO Elimination	100%	12/18/2014	12/18/2014	12/31/2014	12/31/2014	L_OR_MF_190_S_03_A_A		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2]																							
<b>SANITARY SEWER DISCHARGE PLAN</b>																															
<b>BEARGRASS CREEK MIDDLE FORK AREA</b>	66%	12/31/2024	NA	12/31/2024	12/31/2024			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Goose Creek PS Improvements and Wet Weather Storage</b>	58%	12/31/2024	NA	12/31/2024	12/31/2024			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Goose Creek PS Improvements &amp; Wet Weather Storage 1 - Devondale PS and Bancroft WQTC Elimination</b>	100%	6/29/2017	7/25/2017	12/31/2024	12/31/2024			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Goose Creek PS Improvements & Wet Weather Storage 1 - Devondale PS and Bancroft WQTC Elimination	100%	6/29/2017	7/25/2017	12/31/2024	12/31/2024	S_MI_MF_NB04_M_03_B		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Goose Creek PS Improvements &amp; Wet Weather Storage 2 - PS and FM Upgrades</b>	0%	12/31/2024	NA	12/31/2024	12/31/2024			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Goose Creek PS Improvements & Wet Weather Storage 2 - PS and FM Upgrades	0%	12/31/2024	NA	12/31/2024	12/31/2024	S_MI_MF_NB04_M_03_B		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Anchor Estates Pump Station Elimination</b>	100%	4/15/2016	4/15/2016	12/31/2016	12/31/2016			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination</b>	100%	4/15/2016	4/15/2016	12/31/2016	12/31/2016			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Anchor Estates PS Elimination 2 - Anchor Estates #1 and #2 PS Elimination	100%	4/15/2016	4/15/2016	12/31/2016	12/31/2016	S_MI_MF_NB06_M_01_A_A - 1		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Anchor Estates PS Elimination 1 - Vannah PS Elimination</b>	100%	10/15/2011	10/15/2011	12/31/2013	12/31/2013			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Anchor Estates PS Elimination 1 - Vannah PS Elimination	100%	10/15/2011	10/15/2011	12/31/2013	12/31/2013	S_MI_MF_NB06_M_01_A_A - 2		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Hurstbourne I/I Investigation &amp; Rehabilitation</b>	100%	12/27/2011	12/27/2011	12/31/2011	12/31/2011			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Hurstbourne I/I Investigation & Rehabilitation	100%	12/27/2011	12/27/2011	12/31/2011	12/31/2011	S_MI_MF_NB07_S_07_C		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion</b>	48%	12/31/2023	NA	12/31/2023	12/31/2023			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1 - Buechel Basin</b>	100%	12/27/2013	12/27/2013	12/31/2013	12/31/2013			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 1 - Buechel Basin	100%	12/27/2013	12/27/2013	12/31/2013	12/31/2013	S_MISF_MF_NB01_M_01_C_A1		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
<b>Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage</b>	0%	12/31/2023	NA	12/31/2023	12/31/2023			[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							
Middle Fork Relief Interceptor, Wet Weather Storage, and UMFLS Diversion 2 - PS Diversion and Storage	0%	12/31/2023	NA	12/31/2023	12/31/2023	S_MISF_MF_NB01_M_01_C_A1		[Gantt bar: 2009 H1-H2, 2010 H1-H2, 2011 H1-H2, 2012 H1-H2, 2013 H1-H2, 2014 H1-H2, 2015 H1-H2, 2016 H1-H2, 2017 H1-H2, 2018 H1-H2, 2019 H1-H2, 2020 H1-H2, 2021 H1-H2, 2022 H1-H2, 2023 H1-H2, 2024 H1-H2]																							

Approved 2009 IOAP [Dotted Line] IOAP Modifications [Dashed Line] Remaining Work [Green Line] Completed Work [Blue Line] Composite Schedule [Orange Line] Composite Completed [Dark Blue Line]

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Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009-2024																							
								2009 H1 H2	2010 H1 H2	2011 H1 H2	2012 H1 H2	2013 H1 H2	2014 H1 H2	2015 H1 H2	2016 H1 H2	2017 H1 H2	2018 H1 H2	2019 H1 H2	2020 H1 H2	2021 H1 H2	2022 H1 H2	2023 H1 H2	2024 H1 H2								
<b>CEDAR CREEK AREA</b>	<b>52%</b>	<b>12/31/2024</b>	<b>NA</b>	<b>12/31/2024</b>	<b>12/31/2024</b>																										
<b>Little Cedar Creek Interceptor Improvements</b>	<b>0%</b>	<b>12/31/2024</b>	<b>NA</b>	<b>12/31/2024</b>	<b>12/31/2024</b>																										
Little Cedar Creek Interceptor Improvements	0%	12/31/2024	NA	12/31/2024	12/31/2024	S_CC_CC_67997_M_01_C																									
<b>Idlewood Inline Storage</b>	<b>0%</b>	<b>6/30/2021</b>	<b>NA</b>	<b>12/31/2023</b>	<b>12/31/2023</b>																										
Idlewood Inline Storage	0%	6/30/2021	NA	12/31/2023	12/31/2023	S_CC_CC_70158_M_09A_C																									
<b>Bardstown Rd. PS Improvements</b>	<b>0%</b>	<b>6/30/2021</b>	<b>NA</b>	<b>12/31/2021</b>	<b>12/31/2021</b>																										
Bardstown Rd. PS Improvements	0%	6/30/2021	NA	12/31/2021	12/31/2021	S_CC_CC_MSD1025_S_03_B																									
<b>Running Fox PS Elimination</b>	<b>100%</b>	<b>3/10/2010</b>	<b>3/10/2010</b>	<b>12/31/2010</b>	<b>12/31/2010</b>																										
Running Fox PS Elimination	100%	3/10/2010	3/10/2010	12/31/2010	12/31/2010	S_CC_CC_MSD1080_S_01_C																									
<b>Fairmount Road Pump Station</b>	<b>100%</b>	<b>3/30/2016</b>	<b>3/31/2016</b>	<b>12/31/2023</b>	<b>12/31/2023</b>																										
Fairmount Rd PS Improvements	100%	4/24/2012	4/24/2012	12/31/2023	12/31/2023	S_FF_CC_81316_M_03_C_A																									
<b>Fairmount PS Offline Storage Basin</b>	<b>100%</b>	<b>3/31/2016</b>	<b>3/31/2016</b>	<b>12/31/2023</b>	<b>3/31/2016</b>																										
Fairmount PS Offline Storage Basin	100%	3/31/2016	3/31/2016	12/31/2023	3/31/2016	S_FF_CC_81316_M_03_C_A																									
<b>COMBINED SEWER SYSTEM AREA</b>	<b>100%</b>	<b>12/15/2023</b>	<b>12/15/2017</b>	<b>6/30/2011</b>	<b>6/30/2011</b>																										
<b>Hazelwood PS I/I Investigation &amp; Rehabilitation</b>	<b>100%</b>	<b>6/30/2011</b>	<b>6/30/2011</b>	<b>6/30/2011</b>	<b>6/30/2011</b>																										
Hazelwood PS I/I Investigation & Rehabilitation	100%	6/30/2011	6/30/2011	6/30/2011	6/30/2011	S_MC_MF_55665_S_07_C																									
<b>Sonne Pump Station I/I Investigation &amp; Rehabilitation</b>	<b>100%</b>	<b>6/30/2011</b>	<b>6/30/2011</b>	<b>6/30/2011</b>	<b>6/30/2011</b>																										
Sonne Pump Station I/I Investigation & Rehabilitation	100%	6/30/2011	6/30/2011	6/30/2011	6/30/2011	S_OR_MF_42007_S_07_C																									
<b>Camp Taylor</b>	<b>100%</b>	<b>12/15/2023</b>	<b>12/15/2017</b>	<b>12/31/2017</b>	<b>12/31/2017</b>																										
<b>Camp Taylor Phase 1 - SSES</b>	<b>100%</b>	<b>7/8/2011</b>	<b>7/8/2011</b>	<b>12/31/2011</b>	<b>12/31/2013</b>																										
Camp Taylor Phase 1 - SSES	100%	7/8/2011	7/8/2011	12/31/2011	12/31/2013	S_SF_MF_30917_M_09_A	CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 1 - SSES																								
<b>Camp Taylor Phase 2 - Sewer Replacement and Rehabilitation</b>	<b>100%</b>	<b>12/20/2013</b>	<b>12/20/2013</b>	<b>12/31/2013</b>	<b>12/31/2017</b>																										
Camp Taylor Phase 2 - Sewer Replacement and Rehabilitation	100%	12/20/2013	12/20/2013	12/31/2013	12/31/2017	S_SF_MF_30917_M_09_A	CAMP TAYLOR SYSTEM IMPROVEMENTS PHASE 2 - SEWER																								
<b>Camp Taylor Phase 3 - Sewer Replacement and Rehabilitation</b>	<b>100%</b>	<b>12/31/2017</b>	<b>12/15/2017</b>	<b>12/31/2017</b>	<b>12/31/2017</b>																										
Camp Taylor Phase 3 - Sewer Replacement and Rehabilitation	100%	12/15/2017	12/15/2017	12/31/2017	12/31/2017	S_SF_MF_30917_M_09_A	CAMP TAYLOR SYSTEM IMPROVEMENTS 3 - SEWER																								
<b>FLOYDS FORK AREA</b>	<b>100%</b>	<b>3/4/2010</b>	<b>3/4/2010</b>	<b>12/31/2021</b>	<b>4/1/2010</b>																										
<b>Woodland Hill PS Diversion</b>	<b>100%</b>	<b>3/4/2010</b>	<b>3/4/2010</b>	<b>6/30/2011</b>	<b>4/1/2010</b>																										
Woodland Hill PS Diversion	100%	3/4/2010	3/4/2010	6/30/2011	4/1/2010	S_FF_FF_NB01_S_01_C_A																									
<b>Ashburton PS Improvements &amp; Diversion</b>	<b>100%</b>	<b>12/30/2009</b>	<b>12/30/2009</b>	<b>12/31/2021</b>	<b>1/22/2010</b>																										
Ashburton PS Improvements & Diversion	100%	12/30/2009	12/30/2009	12/31/2021	1/22/2010	S_FF_FF_NB03_M_01_C_A																									
<b>HITE CREEK AREA</b>	<b>62%</b>	<b>11/26/2024</b>	<b>NA</b>	<b>12/31/2024</b>	<b>12/31/2024</b>																										

Approved 2009 IOAP [dotted line] IOAP Modifications [dashed line] Remaining Work [green bar] Completed Work [blue bar] Composite Schedule [orange bar] Composite Completed [dark blue bar]

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Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009-2024																							
								2009 H1	2009 H2	2010 H1	2010 H2	2011 H1	2011 H2	2012 H1	2012 H2	2013 H1	2013 H2	2014 H1	2014 H2	2015 H1	2015 H2	2016 H1	2016 H2	2017 H1	2017 H2	2018 H1	2018 H2	2019 H1	2019 H2	2020 H1	2020 H2
<b>Meadow Stream Pump Station &amp; Force Main Upgrade</b>	100%	12/18/2012	12/18/2012	12/31/2016	12/31/2016																										
Meadow Stream Pump Station & Force Main Upgrade	100%	12/18/2012	12/18/2012	12/31/2016	12/31/2016	S_HC_HC_MSD1082_S_09A_C	MEADOW STREAM PUMP STATION IN-LINE STORAGE	[Gantt chart showing completed work in 2010-2012 and 2014-2016]																							
<b>Kavanaugh Rd. PS Improvements</b>	0%	11/26/2024	NA	12/31/2024	12/31/2024																										
Kavanaugh Rd. PS Improvements	0%	11/26/2024	NA	12/31/2024	12/31/2024	S_HC_HC_MSD1085_S_03_A		[Gantt chart showing remaining work from 2024]																							
<b>Floydsburg Rd. I/I Investigation &amp; Rehabilitation</b>	100%	12/17/2010	12/17/2010	12/31/2010	12/31/2010																										
Floydsburg Rd. I/I Investigation & Rehabilitation	100%	12/17/2010	12/17/2010	12/31/2010	12/31/2010	S_HC_HC_MSD1086_M_07_C_A		[Gantt chart showing completed work in 2010]																							
<b>INTERIM SSP PROJECTS</b>	100%	11/27/2012	11/27/2012	11/27/2012	11/27/2012																										
<b>Beechwood Village Sanitary Sewer Replacement</b>	100%	9/29/2010	9/29/2010	4/27/2011	4/27/2011																										
Beechwood Village Sanitary Sewer Replacement	100%	9/29/2010	9/29/2010	4/27/2011	4/27/2011			[Gantt chart showing completed work in 2010-2011]																							
<b>Sinking Fork Relief Sewer</b>	100%	11/30/2009	11/30/2009	12/30/2010	12/23/2009																										
Sinking Fork Relief Sewer	100%	11/30/2009	11/30/2009	12/30/2010	12/23/2009			[Gantt chart showing completed work in 2009-2010]																							
<b>Derek R. Guthrie Water Quality Treatment Center</b>	100%	11/27/2012	11/27/2012	11/27/2012	11/27/2012																										
Derek R. Guthrie Water Quality Treatment Center	100%	11/27/2012	11/27/2012	11/27/2012	11/27/2012			[Gantt chart showing completed work in 2012]																							
<b>Hikes Lane Interceptor and Highgate Springs PS</b>	100%	11/2/2012	11/2/2012	11/27/2012	11/27/2012																										
Hikes Lane Interceptor and Highgate Springs PS	100%	11/2/2012	11/2/2012	11/27/2012	11/27/2012			[Gantt chart showing completed work in 2012]																							
<b>Northern Ditch Diversion Interceptor</b>	100%	2/16/2011	2/16/2011	7/31/2011	7/31/2011																										
Northern Ditch Diversion Interceptor	100%	2/16/2011	2/16/2011	7/31/2011	7/31/2011			[Gantt chart showing completed work in 2011]																							
<b>Southeastern Diversion Structure and Interceptor</b>	100%	12/19/2011	12/19/2011	5/12/2012	5/12/2012																										
Southeastern Diversion Structure and Interceptor	100%	12/19/2011	12/19/2011	5/12/2012	5/12/2012			[Gantt chart showing completed work in 2011-2012]																							
<b>JEFFERSONTOWN AREA</b>	54%	12/31/2022	NA	12/31/2022	12/31/2022																										
<b>Jeffersontown WQTC Elimination</b>	100%	12/23/2015	12/23/2015	12/31/2015	12/31/2015																										
Jeffersontown WQTC Elimination	100%	12/23/2015	12/23/2015	12/31/2015	12/31/2015	S_JT_JT_NB01_M_01_C_A		[Gantt chart showing completed work in 2015]																							
<b>Elimination of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS</b>	100%	9/22/2014	9/22/2014	12/31/2015	12/31/2015																										
Elimination of Chenoweth Hills WQTC, Chenoweth Run PS, and Chippewa PS	100%	9/22/2014	9/22/2014	12/31/2015	12/31/2015	S_JT_JT_NB01A_M_03_C	CHENOWETH HILLS WATER QUALITY TREATMENT CENTER ELIMINATION AND PS IMPROVEMENTS PROJECT	[Gantt chart showing completed work in 2014-2015]																							
<b>Dell Rd and Charlane Pkwy Interceptor Improvements</b>	0%	6/30/2021	NA	12/31/2022	12/31/2022																										
Dell Rd and Charlane Pkwy Interceptor Improvements	0%	6/30/2021	NA	12/31/2022	12/31/2022	S_JT_JT_NB02_M_01_C		[Gantt chart showing remaining work from 2021]																							
<b>Raintree and Marian Ct 1</b>	0%	6/30/2021	NA	12/31/2021	12/31/2021																										
Raintree and Marian Ct 1 - PS Elimination	0%	6/30/2021	NA	12/31/2021	12/31/2021	S_JT_JT_NB03_M_01_C		[Gantt chart showing remaining work from 2021]																							
<b>Raintree and Marian Ct 2 - Pipe Upgrades</b>	0%	6/30/2021	NA	12/31/2021	12/31/2021																										

Approved 2009 IOAP [Pattern] IOAP Modifications [Pattern] Remaining Work [Pattern] Completed Work [Pattern] Composite Schedule [Pattern] Composite Completed [Pattern]

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MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)

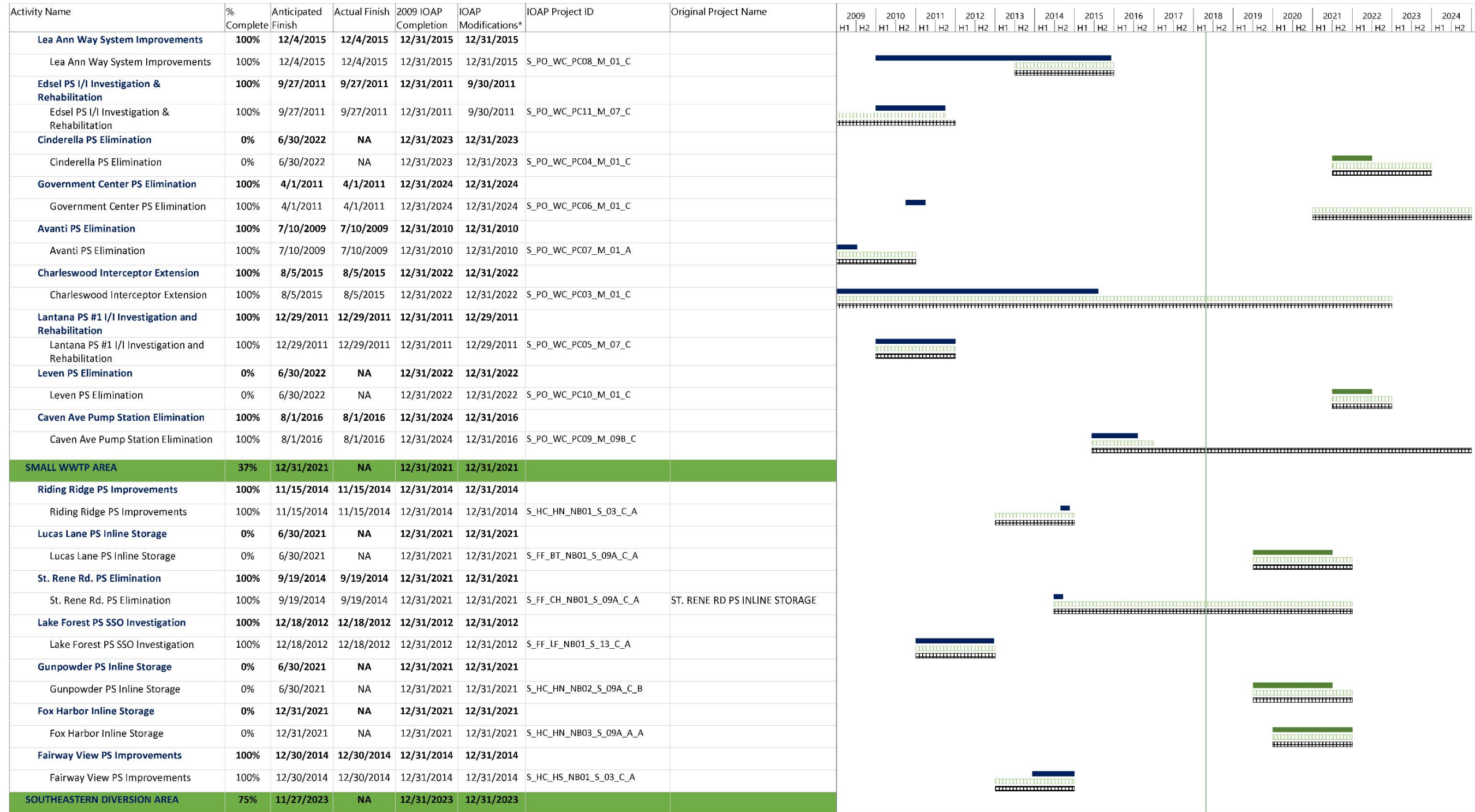
Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	2009-2024																							
								2009 H1 H2	2010 H1 H2	2011 H1 H2	2012 H1 H2	2013 H1 H2	2014 H1 H2	2015 H1 H2	2016 H1 H2	2017 H1 H2	2018 H1 H2	2019 H1 H2	2020 H1 H2	2021 H1 H2	2022 H1 H2	2023 H1 H2	2024 H1 H2								
Raintree and Marian Ct 2 - Pipe Upgrades	0%	6/30/2021	NA	12/31/2021	12/31/2021	S_JT_JT_NB03_M_01_C		[Gantt bar: 2020 H2 - 2021 H1]																							
Monticello PS Elimination	0%	12/31/2022	NA	12/31/2022	12/31/2022			[Gantt bar: 2020 H2 - 2022 H1]																							
Monticello PS Elimination	0%	12/31/2022	NA	12/31/2022	12/31/2022	S_JT_JT_NB04_M_01_A		[Gantt bar: 2021 H1 - 2022 H2]																							
<b>MILL CREEK AREA</b>	<b>100%</b>	<b>4/13/2012</b>	<b>4/13/2012</b>	<b>12/31/2021</b>	<b>12/31/2021</b>			[Gantt bar: 2009 H1 - 2012 H1]																							
Shively Interceptor	100%	4/13/2012	4/13/2012	12/31/2014	12/31/2014			[Gantt bar: 2009 H1 - 2014 H1]																							
Shively Interceptor	100%	4/13/2012	4/13/2012	12/31/2014	12/31/2014	S_MC_WC_NB01_M_01_A		[Gantt bar: 2009 H1 - 2014 H1]																							
East Rockford PS Relocation	100%	3/30/2012	3/30/2012	12/31/2021	12/31/2021			[Gantt bar: 2009 H1 - 2012 H1]																							
East Rockford PS Relocation	100%	3/30/2012	3/30/2012	12/31/2021	12/31/2021	S_MC_WC_NB02_S_03_C		[Gantt bar: 2009 H1 - 2012 H1]																							
<b>OHIO RIVER FORCE MAIN AREA</b>	<b>84%</b>	<b>10/3/2024</b>	<b>NA</b>	<b>12/31/2024</b>	<b>12/31/2024</b>			[Gantt bar: 2009 H1 - 2024 H1]																							
Mellwood System Improvements & PS Elimination	49%	12/19/2012	NA	12/31/2024	12/31/2024			[Gantt bar: 2009 H1 - 2012 H1]																							
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	100%	12/19/2012	12/19/2012	12/31/2012	12/31/2012			[Gantt bar: 2009 H1 - 2012 H1]																							
Mellwood System Improvements & PS Elimination - Mellwood PS and FM Improvements	100%	12/19/2012	12/19/2012	12/31/2012	12/31/2012	S_OR_MF_NB01_M_01_B		[Gantt bar: 2009 H1 - 2012 H1]																							
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	0%	10/3/2024	NA	12/31/2024	12/31/2024			[Gantt bar: 2020 H1 - 2024 H1]																							
Mellwood System Improvements & PS Elimination - Winton and Mockingbird Valley Elimination	0%	10/3/2024	NA	12/31/2024	12/31/2024	S_OR_MF_NB01_M_01_B		[Gantt bar: 2020 H1 - 2024 H1]																							
Derington Ct. PS I/I Investigation & Rehabilitation	100%	3/30/2012	3/30/2012	3/31/2012	3/31/2012			[Gantt bar: 2012 H1 - 2012 H1]																							
Derington Ct. PS I/I Investigation & Rehabilitation	100%	3/30/2012	3/30/2012	3/31/2012	3/31/2012	S_OR_MF_NB03_S_07_C		[Gantt bar: 2012 H1 - 2012 H1]																							
Prospect WQTC Eliminations, Harrods Creek PS and ORFM System Improvements	100%	12/19/2016	12/19/2016	12/31/2016	12/31/2016			[Gantt bar: 2016 H1 - 2016 H1]																							
Prospect #1 - WQTC Eliminations	100%	12/15/2015	12/15/2015	12/31/2015	12/31/2015			[Gantt bar: 2015 H2 - 2015 H2]																							
Prospect #1 - WQTC Eliminations	100%	12/15/2015	12/15/2015	12/31/2015	12/31/2015	S_OR_MF_NB04_M_03_B_B		[Gantt bar: 2015 H2 - 2015 H2]																							
Prospect #2 - Harrods Creek PS and FM	100%	12/15/2015	12/15/2015	12/31/2015	12/31/2015			[Gantt bar: 2015 H2 - 2015 H2]																							
Prospect #2 - Harrods Creek PS and FM	100%	12/15/2015	12/15/2015	12/31/2015	12/31/2015	S_OR_MF_NB04_M_03_B_B		[Gantt bar: 2015 H2 - 2015 H2]																							
Prospect #3 - ORFM System Improvements	100%	12/19/2016	12/19/2016	12/31/2016	12/31/2016			[Gantt bar: 2016 H1 - 2016 H1]																							
Prospect #3 - ORFM System Improvements	100%	12/19/2016	12/19/2016	12/31/2016	12/31/2016	S_OR_MF_NB04_M_03_B_B		[Gantt bar: 2016 H1 - 2016 H1]																							
<b>OTHER PROJECTS</b>	<b>63%</b>	<b>12/31/2024</b>	<b>NA</b>	<b>12/31/2024</b>	<b>12/30/2024</b>			[Gantt bar: 2009 H1 - 2024 H1]																							
CPE_CCP Modifications To WQTC	100%	12/19/2011	12/19/2011	12/31/2011	12/31/2011			[Gantt bar: 2011 H1 - 2011 H1]																							
CPE_CCP Modifications To WQTC	100%	12/19/2011	12/19/2011	12/31/2011	12/31/2011			[Gantt bar: 2011 H1 - 2011 H1]																							
I/I Reduction Program	56%	12/31/2024	NA	12/31/2024	12/31/2024			[Gantt bar: 2009 H1 - 2024 H1]																							
I/I Reduction Program	56%	12/31/2024	NA	12/31/2024	12/31/2024			[Gantt bar: 2009 H1 - 2024 H1]																							
<b>POND CREEK AREA</b>	<b>93%</b>	<b>6/30/2022</b>	<b>NA</b>	<b>12/31/2024</b>	<b>12/31/2024</b>			[Gantt bar: 2009 H1 - 2024 H1]																							

Approved 2009 IOAP [Pattern] IOAP Modifications [Pattern] Remaining Work [Pattern] Completed Work [Pattern] Composite Schedule [Pattern] Composite Completed [Pattern]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)



Approved 2009 IOAP [Pattern] IOAP Modifications [Pattern] Remaining Work [Pattern] Completed Work [Pattern] Composite Schedule [Pattern] Composite Completed [Pattern]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

Figure 3.1. MSD Integrated Overflow Abatement Plan Implementation Schedule

MSD Integrated Overflow Abatement Plan Implementation Schedule (01 Jan 2009 - 31 Dec 2024)

Activity Name	% Complete	Anticipated Finish	Actual Finish	2009 IOAP Completion	IOAP Modifications*	IOAP Project ID	Original Project Name	Schedule																							
								2009 H1	2009 H2	2010 H1	2010 H2	2011 H1	2011 H2	2012 H1	2012 H2	2013 H1	2013 H2	2014 H1	2014 H2	2015 H1	2015 H2	2016 H1	2016 H2	2017 H1	2017 H2	2018 H1	2018 H2	2019 H1	2019 H2	2020 H1	2020 H2
<b>Parkview Estates I/I Investigation &amp; Rehabilitation</b>	100%	6/28/2011	6/28/2011	12/31/2011	12/31/2011			[Gantt bar: 2009 H1-H2]																							
Parkview Estates I/I Investigation & Rehabilitation	100%	6/28/2011	6/28/2011	12/31/2011	12/31/2011	S_SD_MF_NB03_S_07_C		[Gantt bar: 2009 H1-H2]																							
<b>Klondike Interceptor</b>	100%	12/5/2013	12/5/2013	12/31/2015	12/31/2015			[Gantt bar: 2010 H2-2011 H2]																							
Klondike Interceptor	100%	12/5/2013	12/5/2013	12/31/2015	12/31/2015	S_SD_MF_NB04_S_01_B_A		[Gantt bar: 2010 H2-2011 H2]																							
<b>Sutherland Interceptor</b>	0%	11/27/2023	NA	12/31/2023	12/31/2023			[Gantt bar: 2023 H1-H2]																							
Sutherland Interceptor	0%	11/27/2023	NA	12/31/2023	12/31/2023	S_SD_MF_NB05_M_01_A		[Gantt bar: 2023 H1-H2]																							
<b>Beargrass Interceptor Rehab Ph. 2</b>	100%	12/14/2010	12/14/2010	12/31/2010	12/31/2010			[Gantt bar: 2009 H2]																							
Beargrass Interceptor Rehab Ph. 2	100%	12/14/2010	12/14/2010	12/31/2010	12/31/2010	S_SD_MF_NB06_S_13_C		[Gantt bar: 2009 H2]																							

Approved 2009 IOAP [Dotted Line] IOAP Modifications [Dashed Line] Remaining Work [Green Line] Completed Work [Blue Line] Composite Schedule [Orange Line] Composite Completed [Dark Blue Line]

Includes 2014 approval of 2012 IOAP Modification as well as all minor mod letter approvals to date.

## SECTION 4: PROGRAM ACTIVITIES FOR PUBLIC OUTREACH, EDUCATION, NOTIFICATION AND PARTICIPATION

### 4.1. PUBLIC NOTIFICATION PROGRAM

MSD has developed a program aimed at notifying the community of the objectives of Project WIN and how to lessen the risks associated with coming into contact with sewage overflows.

### 4.2. PUBLIC EDUCATION PROGRAMS

A public education program aimed at disseminating information to the public on MSD’s primary business functions with emphasis on wastewater, stormwater and flood protection has been developed and implemented. Efforts continued to utilize various media outlets, including television, radio, magazines and newspapers, social media, and MSD websites, to serve as a conduit for circulating information to the public.

MSD included Consent Decree compliance, wastewater facility upgrades, and aging infrastructure as key topics in its Critical Repair & Reinvestment Plan. Public education about this initiative included public meetings and posts on MSD’s website and social media accounts.

MSD has launched a new One Water education effort. This partnership with Louisville Water enables MSD to reach a wider audience through use of classroom educators and educational tours.

During the reporting period, MetroTV aired the programs listed in Table 4.1.

**Table 4.1. MetroTV Broadcasts**

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
January 2, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 3, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 4, 2018	Southwestern Parkway CSO Basin: Construction Meeting	March 23, 2015
January 5, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
January 8, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 10, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 11, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 14, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 14, 2018	Story & Main CSO Basin: Conceptual Design Meeting	February 9, 2016
January 14, 2018	Story & Main CSO Basin: Orientation Meeting	June 16, 2015
January 15, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 15, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 15, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
January 16, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017

**Table 4.1. MetroTV Broadcasts**

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
January 17, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 18, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 19, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
January 19, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
January 19, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 19, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
January 20, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
January 20, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 21, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
January 22, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
January 22, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 22, 2018	Portland CSO Basin: Conceptual Design Meeting	January 26, 2016
January 23, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 24, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
January 24, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
January 25, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 25, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
January 25, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 26, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
January 26, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
January 27, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
January 27, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 27, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
January 27, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
January 28, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
January 28, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
January 28, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
January 29, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
January 29, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 2, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 2, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 2, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 3, 2018	Logan Street Basin: Ribbon Cutting Ceremony	December 19, 2017
February 3, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 3, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018

**Table 4.1. MetroTV Broadcasts**

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
February 4, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 4, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 4, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 5, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 5, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 5, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 6, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 7, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 7, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 8, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 8, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 9, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 9, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 10, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 10, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 10, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 11, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 11, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 11, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 12, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 13, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 16, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 16, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 16, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 16, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 17, 2018	Ohio River Tunnel: Groundbreaking Ceremony	January 10, 2018
February 18, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 18, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 19, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 19, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 20, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 21, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 21, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 22, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 23, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016

**Table 4.1. MetroTV Broadcasts**

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
February 23, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 24, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 24, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
February 24, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
February 25, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
February 25, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
February 26, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 2, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
March 2, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
March 2, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 3, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 10, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 10, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
March 10, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 11, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 11, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
March 16, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 16, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 18, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 18, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
March 19, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 19, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 20, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
March 21, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
March 22, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 22, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 23, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 24, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
March 24, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017
March 24, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 25, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 25, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016
March 30, 2018	Clifton Heights CSO Basin: Advanced Design Meeting	September 15, 2015
March 30, 2018	I64 & Grinstead CSO Basin: Advanced Design Meeting	November 15, 2016
March 30, 2018	Portland CSO Basin: Conceptual Design Meeting	June 14, 2016



**Table 4.1. MetroTV Broadcasts**

DATE	PROGRAM TITLE	ORIGINAL MEETING DATE
March 31, 2018	Ohio River Tunnel: Advanced Design Meeting	July 19, 2017

### 4.3. PUBLIC OUTREACH PROGRAMS

MSD has developed a public education program aimed at expanding the public’s knowledge of MSD’s primary business functions of wastewater, stormwater and flood protection, with an emphasis on Project WIN Program elements.

#### 4.3.1. IOAP PROJECT AND PROGRAM MEETINGS

MSD facilitates meetings for the Wet Weather Team and the public to review regulatory commitments, update progress on projects and initiatives, and to gather public input on efforts.

MSD has developed a partnership with Louisville Metro for providing project information and soliciting feedback from stakeholders using a Structured Public Involvement approach. Structured Public Involvement is meant to facilitate relevant input on the design process as MSD prepares to design and construct CSO basins. The current IOAP outreach activities and public meetings are using this process to elicit qualitative and quantitative information and enhance engagement with customers. Additional information regarding the Structured Public Involvement Process and meetings held during this reporting period may be found at the Project WIN Public Input Website, available at <http://www.msdpjprojectwin.org/Public-Input.aspx>.

During the reporting period, MSD facilitated and planned for the meetings shown in Table 4.2. Meetings anticipated during the upcoming reporting period are shown in Table 4.3.

**Table 4.2. IOAP Project and Program Meetings – Current Reporting Period**

DATE	EVENT
January 9, 2018	Southwestern Parkway CSO Basin: Stakeholder Advisory Group Meeting
January 10, 2018	Ohio River Tunnel: Groundbreaking Ceremony
February 13, 2018	Lexington & Payne CSO Interceptor: Construction Meeting

**Table 4.3. IOAP Project and Program Meetings – Upcoming Reporting Period**

DATE	EVENT
April 9, 2018	Ohio River Tunnel: Construction Meeting
April 10, 2018	Southwestern Parkway CSO Basin: Stakeholder Advisory Group Meeting
May 7, 2018	Ohio River Tunnel: Construction Meeting

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## SECTION 5: CAPACITY MANAGEMENT OPERATIONS AND MAINTENANCE (CMOM) REPORT

Per Paragraph 24.c. of the Amended Consent Decree, the Capacity Management Operations and Maintenance (CMOM) Self-Assessment Report was submitted to EPA and KDEP on February 10, 2006. MSD received a letter of approval on August 22, 2006. The approved CMOM document can be viewed on the MSD Project WIN website, available at [www.msdpowerwin.org](http://www.msdpowerwin.org).

The primary objectives of CMOM are as follows:

- **Capacity** – Ensuring that adequate wet and dry weather capacity is maintained in existing and new infrastructure.
- **Management** – Implementing programs in support of operations and maintenance activities required to ensure KPDES permit compliance and promote public health by remedying design, construction and operational deficiencies; training staff; and performing activities in a safe manner.
- **Operations** – Implementing written standard operating procedures to operate system components as designed to meet permit requirements.
- **Maintenance** – Implementing systematic, comprehensive asset maintenance and rehabilitation programs to prevent overflows, maximize system reliability, and ensure system sustainability.

Although the program implementation deadlines from the CMOM Self-Assessment Report were previously met, MSD continues to enhance the activities. Highlights of the CMOM program implementation over this reporting period are outlined below.

### 5.1. MANAGEMENT PROGRAMS

#### M-E-9 Infrastructure Rehabilitation

Refer to the CMOM activity schedule provided in Section 5.4.

#### M-E-10 System Capacity Assurance Program

Included in the goals of the CMOM Self-Assessment Report, the System Capacity Assurance Plan (SCAP) is the basis for applying capacity decision criteria to support watershed community values. It provides a programmatic approach for confirming available capacity within MSD's sanitary sewer system, creating capacity credits through system improvement and rehabilitation, identifying hydraulic constrictions, and proposing capacity improvements that support interim and long-term performance objectives. SCAP revisions, including credit and balance projections and discussion of approach for multi-family residential unit populations, were discussed with EPA and KDEP and submitted electronically for review on July 21, 2014. The final SCAP revision was submitted for approval on December 9, 2014, and approval was received February 5, 2015. A copy of the approved SCAP can be found on the Project WIN website, available at [www.msdpowerwin.org](http://www.msdpowerwin.org).

A current copy of the SCAP Credit Balance is included as Appendix B.

## 5.2. OPERATIONS PROGRAMS

O-A-1 Pump Station Operations Programs (Routine Operating Programs)

O-A-2 Pump Station Operations Programs (Emergency Operating Programs)

Refer to the CMOM activity schedule provided in Section 5.4.

## 5.3. COMPREHENSIVE PERFORMANCE EVALUATIONS AND COMPOSITE CORRECTION PLANS (CPE/CCP)

Per requirements of MSD's 2009 Amended Consent Decree, MSD implemented a Comprehensive Performance Evaluation (CPE) and Composite Correction Plan (CCP) program for the District's WQTCs. Although the IOAP CPE assessments that defined specific WQTC improvements were completed by December 31, 2011, MSD will continue to implement CPE/CCP activities as part of the District's CMOM Program. This section lists activities per WQTC as they occur during the reporting period.

Refer to the CMOM activity schedule provided in Section 5.4 for CPE/CCP-related capital projects.

### 5.3.1. HITE CREEK WATER QUALITY TREATMENT CENTER

The Hite Creek WQTC Expansion project, to expand the capacity of the Hite Creek WQTC from 6 MGD to 9 MGD, is underway. Design is expected to be completed during the next reporting period.

Construction of the Preliminary Treatment Odor Control Improvements project is nearly complete. The project is expected to reach substantial completion during the next reporting period.

### 5.3.2. FLOYDS FORK WATER QUALITY TREATMENT CENTER

During this reporting period, there is no activity to report for the Floyds Fork WQTC.

### 5.3.3. DEREK R. GUTHRIE WATER QUALITY TREATMENT CENTER

The DRG Return Activated Sludge (RAS) 1 and 4 Pump Replacement project is under construction. This project calls for the replacement and upsizing of RAS pumps 1 and 4, replacement of all four pump VFDs (Variable Frequency Drive), and placement into the expanded and renovated electrical room. Project completion is scheduled for the end of the 2<sup>nd</sup> quarter of FY19. The pump capacity upgrade will provide the treatment facility more flexibility on a daily average and wet weather operation basis, and also help to re-rate the facility to a higher average daily discharge permit.

Design of the DRG Clarifier #7-12 Floor Repair and Gate Replacement project is expected to begin in the next reporting period.

### 5.3.4. CEDAR CREEK WATER QUALITY TREATMENT CENTER

The Cedar Creek WQTC Influent Pump Station MCC project has been expanded to include further enhancement, including valve actuators. The project is expected to be bid for construction during the next reporting period.

#### 5.3.5. PROSPECT AREA WATER QUALITY TREATMENT CENTER UPDATES

An elimination plan for the five WQTCs serving Prospect (Timberlake, Hunting Creek North, Hunting Creek South, Ken Carla, and Shadow Wood) was submitted to EPA/KDEP on March 31, 2009. Approval of this plan was received on September 24, 2009, and work is now complete. A certification letter dated December 15, 2015, was submitted finalizing the completion of the project.

#### 5.3.6. JEFFERSONTOWN WATER QUALITY TREATMENT CENTER

A certification letter dated December 23, 2015, was submitted finalizing the completion of the Jeffersontown WQTC Elimination Project.

#### 5.3.7. OTHER WATER QUALITY TREATMENT CENTERS

All non-regional WQTCs owned or operated by MSD have been eliminated as of May 27, 2016.

### 5.4. CMOM ACTIVITY SCHEDULE

CMOM capital project milestones for the current reporting period as well as a look-ahead for the upcoming reporting period are provided in Figure 5.1.

**Figure 5.1. CMOM Quarterly Commitments Schedule**

Activity ID	Task Name	% Complete	Start	Finish	Qtr 1, 2018			Qtr 2, 2018		
					Jan	Feb	Mar	Apr	May	Jun
	<b>MSD CMOM Quarterly Commitments Schedule</b>	63%	8/1/2009	1/7/2031						
H14125	HCWQTC Improvements	92%	3/16/2015	4/24/2018						
H14125	CLOSEOUT	26%	2/28/2017	4/24/2018						
D15132	CCWQTC Influent PS Gate Repair and UV Gate Replacement	85%	4/20/2015	6/29/2018						
D15132	CLOSEOUT	26%	6/2/2017	6/29/2018						
F14167	District Wide Arc Flash Study	79%	5/25/2015	8/3/2018						
F14167	STUDY	80%	5/25/2015	7/22/2018						
H16356	South Pope Lick Pump Station Repair	99%	7/27/2015	1/19/2019						
H16356	CLOSEOUT	98%	12/5/2017	1/19/2019						
H14126	HCWQTC Expansion	33%	11/2/2015	10/6/2021						
H14126	DESIGN	55%	2/8/2016	6/29/2018						
D17153	HCWQTC Bioscrubber Installation	85%	1/1/2016	6/7/2019						
D17153	CONSTRUCTION	96%	5/15/2017	2/23/2018						
D17153	CLOSEOUT	0%	4/24/2018	6/7/2019						
F14156	DRGWQTC RAS Pump No 1 and 4 and VFD Replacement	69%	1/1/2016	1/31/2020						
F14156	CONSTRUCTION	55%	4/1/2017	11/20/2018						
D16272	CCWQTC Influent PS MCC Upgrades	17%	2/4/2016	9/11/2020						
D16272	DESIGN	68%	2/4/2016	5/18/2018						
D16272	CONSTRUCTION	0%	6/25/2018	9/26/2019						
E15033	Shively PS Generator Replacement	63%	4/1/2016	6/25/2020						
E15033	CONSTRUCTION	9%	11/27/2017	4/15/2019						
E17010	Collection System Spare Pump Inventory	82%	7/1/2016	6/30/2018						
E17010	CLOSEOUT	82%	7/7/2016	6/30/2018						
H14123	FY17 SSES ICA	69%	7/1/2016	6/30/2018						
H14123	CLOSEOUT	69%	7/7/2016	5/1/2018						
D17119	Ohio River FM Odor Study	49%	10/3/2016	2/16/2018						
D17119	CLOSEOUT	10%	1/15/2018	1/30/2018						
F14004	FY17 Sewer Cleaning and TV Gline	57%	1/1/2017	6/30/2018						
F14004	CLOSEOUT	57%	1/1/2017	6/30/2018						

Date: 3/31/18

CMOM Project  Project Progress

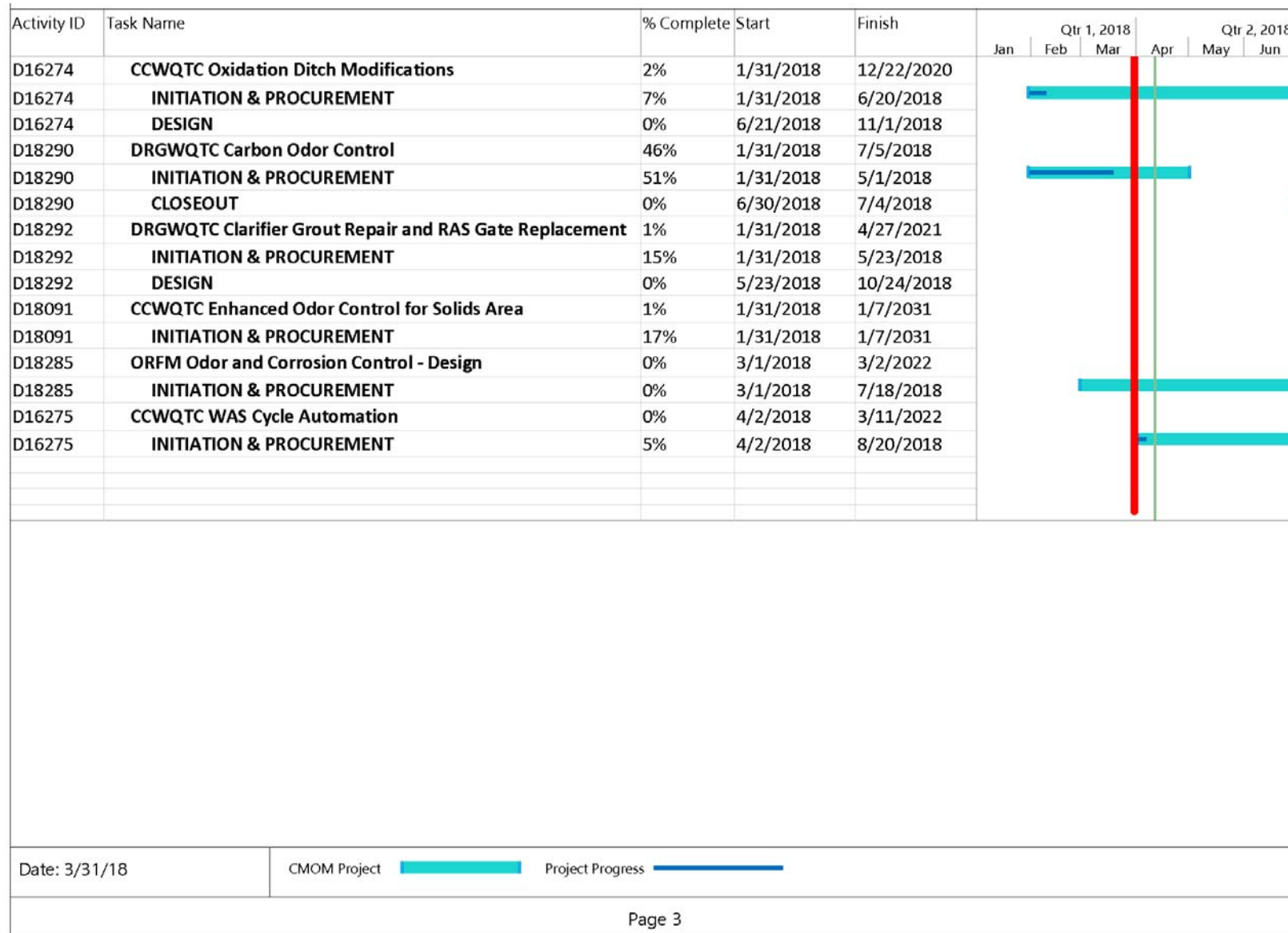
**Figure 5.1. CMOM Quarterly Commitments Schedule**

Activity ID	Task Name	% Complete	Start	Finish	Qtr 1, 2018			Qtr 2, 2018		
					Jan	Feb	Mar	Apr	May	Jun
A16073	<b>Mud Lane Interceptor</b>	30%	3/20/2017	12/5/2020						
A16073	DESIGN	45%	8/4/2017	11/5/2018						
A16073	EASEMENTS/LAND ACQUISITION	0%	10/20/2017	8/23/2018						
H17154	<b>ORFM Biofilter for AVR67839</b>	99%	3/28/2017	8/31/2018						
H17154	CLOSEOUT	0%	8/31/2017	8/31/2018						
H14117	<b>FY18 CMOM PS-Generator Upgrades</b>	55%	9/1/2017	6/30/2018						
H14117	CLOSEOUT	10%	11/7/2017	6/30/2018						
H14106	<b>FY18 CMOM SCAP, AAM &amp; FOG</b>	1%	9/1/2017	6/30/2018						
H14106	CLOSEOUT	0%	9/1/2017	6/30/2018						
G16029	<b>FY18 Development Team Support</b>	2%	9/1/2017	6/30/2018						
G16029	CLOSEOUT	0%	9/1/2017	6/30/2018						
H14120	<b>FY18 PMP</b>	2%	9/1/2017	6/30/2018						
H14120	CLOSEOUT	0%	9/1/2017	6/30/2018						
G18001	<b>FY18 Renewal and Replacement</b>	25%	9/1/2017	6/30/2018						
G18001	CLOSEOUT	23%	9/1/2017	6/30/2018						
D18225	<b>DRGWQTC WWPS Finite Element Analysis</b>	13%	10/11/2017	6/30/2018						
D18225	ANALYSIS	65%	10/11/2017	6/30/2018						
D18225	CLOSEOUT	0%	10/19/2017	6/30/2018						
H18217	<b>FY18 Consent Decree Operating Program Support</b>	11%	11/1/2017	6/30/2018						
H18217	CLOSEOUT	10%	11/1/2017	6/30/2018						
F14005	<b>FY18 Sewer Cleaning and TV Gline</b>	0%	1/1/2018	12/31/2018						
F14005	INITIATION & PROCUREMENT	0%	1/1/2018	1/5/2018						
F14005	CLOSEOUT	0%	1/1/2018	6/30/2018						
H14124	<b>FY18 SSES ICA</b>	0%	1/1/2018	6/30/2018						
H14124	INITIATION & PROCUREMENT	0%	1/1/2018	1/5/2018						
H14124	CLOSEOUT	0%	1/1/2018	6/30/2018						
E18169	<b>FY18-FY22 Operations Renewal and Replacement</b>	0%	1/1/2018	6/30/2022						
E18169	INITIATION & PROCUREMENT	0%	1/1/2018	1/5/2018						
E18169	CLOSEOUT	0%	1/1/2018	6/30/2022						

Date: 3/31/18

CMOM Project  Project Progress 

**Figure 5.1. CMOM Quarterly Commitments Schedule**





## SECTION 6: PROJECT WATERWAY IMPROVEMENTS NOW (WIN) PERFORMANCE OVERVIEW

### 6.1. COMBINED SEWER OVERFLOW REDUCTION AND SANITARY SEWER OVERFLOW ABATEMENT ACTIVITIES

The following sections outline the activities performed during the reporting period to reduce or control CSOs and eliminate SSOs.

#### 6.1.1. SANITARY SEWER OVERFLOW ELIMINATION ACTIVITIES

Refer to Section 3.4.1 for Final SSDP project updates.

#### 6.1.2. COMBINED SEWER OVERFLOW REDUCTION AND CONTROL ACTIVITIES

Refer to Section 3.4.2 for CSO LTCP project updates.

### 6.2. SYSTEMWIDE PERFORMANCE

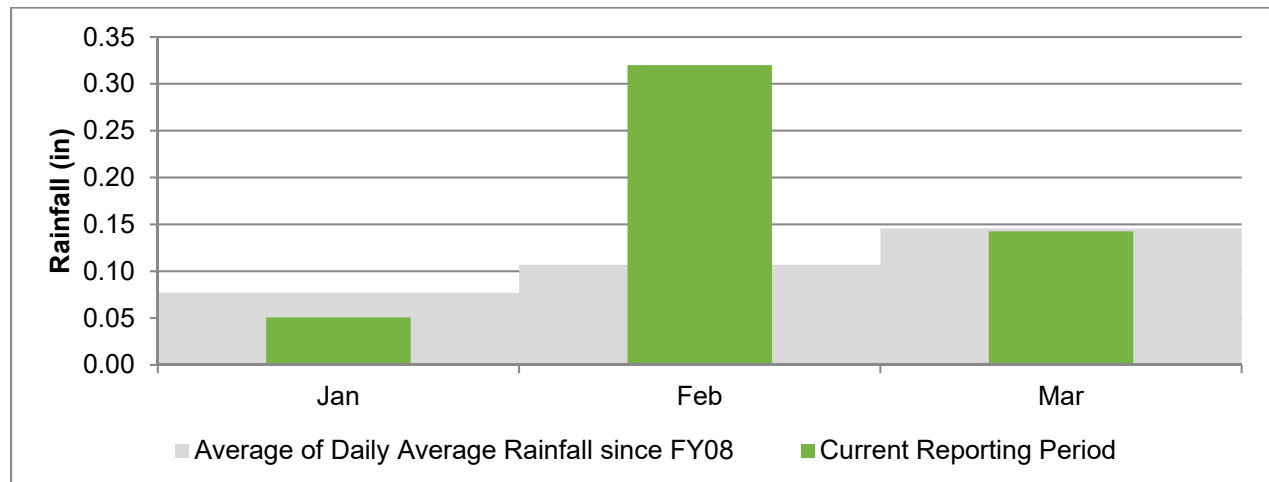
#### 6.2.1. RAINFALL

The number and the volume of wet weather overflows are directly related to the amount of rain that has fallen during the reporting period. Figure 6.1 shows the Jefferson County daily average rainfall amounts for each month of the last quarter, compared with the average of the daily average rainfall since FY08. Data was pulled from MSD's Rain Gauge Network.

#### Weather Event Summary

Daily average rainfall was significantly above average for February and at or below average for January and March when compared with the previous fiscal year average for these months.

**Figure 6.1. Daily Average Rainfall by Month**



## 6.3. WATER QUALITY TREATMENT CENTER PERFORMANCE

### 6.3.1. BYPASSES

Table 6.1 summarizes the 2 bypass events that occurred during this reporting period, and details are included in Appendix A-2 . Each quarter, an assessment of bypasses is conducted to determine the root cause of the bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and corrective action completion date, included in Table 6.2.

**Table 6.1. Bypass Events – Current Reporting Period**

DATE	TYPE OF BYPASS	ID	FACILITY NAME
1/22/2018 10:30	RAIN EVENT DISCHARGE	MSD0278	MORRIS FORMAN
3/3/2018 14:55	DRY WEATHER DISCHARGE	MSD0202	HITE CREEK

### 6.3.2. JEFFERSONTOWN WATER QUALITY TREATMENT CENTER

A letter dated December 23, 2015 certified the elimination of Jeffersontown WQTC. Inspections were conducted upstream of what was previously Jeffersontown WQTC Headworks during the reporting period. There were no overflows reported as a result of these inspections. Refer to Section 2.2 for SSO Route information.

### 6.3.3. PHOSPHORUS MONITORING AT THE PROSPECT WQTCs

An elimination plan for the five WQTCs serving Prospect (Timberlake, Hunting Creek North, Hunting Creek South, Ken Carla, and Shadow Wood) was submitted to EPA/KDEP on March 31, 2009. Approval of this plan was received on September 24, 2009, and work is now complete. A certification letter dated December 15, 2015, was submitted finalizing the completion of the project.

## 6.4. COMBINED SEWER OVERFLOW PERFORMANCE

### 6.4.1. AUTHORIZED DISCHARGES – WET WEATHER CSOs

The observed CSO data for the reporting period for each monitored overflow has been tabulated, along with rainfall information from the nearest rain gauge to facilitate review of the overflows that occurred. This data is included as Appendix B. During development of this appendix for the current reporting period, MSD identified a potential issue with the rainfall analysis tool that will be investigated during the next reporting period.

### 6.4.2. UNAUTHORIZED DISCHARGES – DRY WEATHER CSOs

MSD recorded information related to dry weather overflows from permitted combined sewer overflow outfalls. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. A detailed report of these overflows will be included in the Annual Report for the current reporting period. There were no dry weather overflows reported at CSOs during the reporting period, as reflected in Appendix A-1 .

**Table 6.2. Bypass Summary – Current Reporting Period**

DATE	WQTC	WORK ORDER	FAILURE CODE	BYPASS DESCRIPTION	FAILURE RESOLUTION
FACILITY FAILURE (MECHANICAL-MCH, ELECTRICAL-ELE, STRUCTURAL-STR)					
1/22/2018 10:30	MORRIS FORMAN	2855275	STR	(RAIN EVENT DISCHARGE) PLANT OPERATIONS IDENTIFIED A HYPOCHLORITE LEAK FROM AN UNDERGROUND PVC LINE GOING TO THE CHLORINE CONTACT CHAMBER. THE HYPOCHLORITE FEED TO THE TREATMENT PROCESS HAD TO BE STOPPED FOR A BRIEF PERIOD TO DETERMINE WHICH LINE WAS LEAKING AND TO MAKE REPAIRS.	IWD AND FIRE DEPARTMENT WERE NOTIFIED. THIS PLANT HAS DUAL HYPOCHLORITE FEED LINES. BEING ABLE TO SWITCH LINES ONCE THE LEAK WAS IDENTIFIED GREATLY REDUCED THE OVERALL AMOUNT THAT WAS BYPASSED.
3/3/2018 14:55	HITE CREEK	2874099	ELE	(DRY WEATHER DISCHARGE) THE UNINTERRUPTIBLE POWER SUPPLY (UPS) AT THE INFLUENT PUMP STATION FAILED, RESULTING IN A POWER FAILURE TO THE INFLUENT PUMPS.	MSD STAFF ARE CURRENTLY LOOKING INTO WAYS TO MODIFY PROGRAMMABLE LOGIC CONTROLLERS (PLCS) SO THAT IF A UPS FAILURE OCCURS, THE STATION WILL NOT LOSE CONTROLS POWER AND WILL FUNCTION AS INTENDED.

#### 6.4.3. CSO FLOW MONITORING QUALITY IMPROVEMENT

During the July 2016 – September 2016 reporting period, MSD identified a potential for inaccurate volume reporting at some CSOs. This was identified by comparing measured overflow volumes against modeled overflow volumes for similar storms. It was determined that several CSO flow monitors are affected by backwater levels from the receiving streams causing a discrepancy actual overflow volume, along with other potential variables at some locations. MSD notified EPA and KDEP of data discrepancies on September 29, 2016.

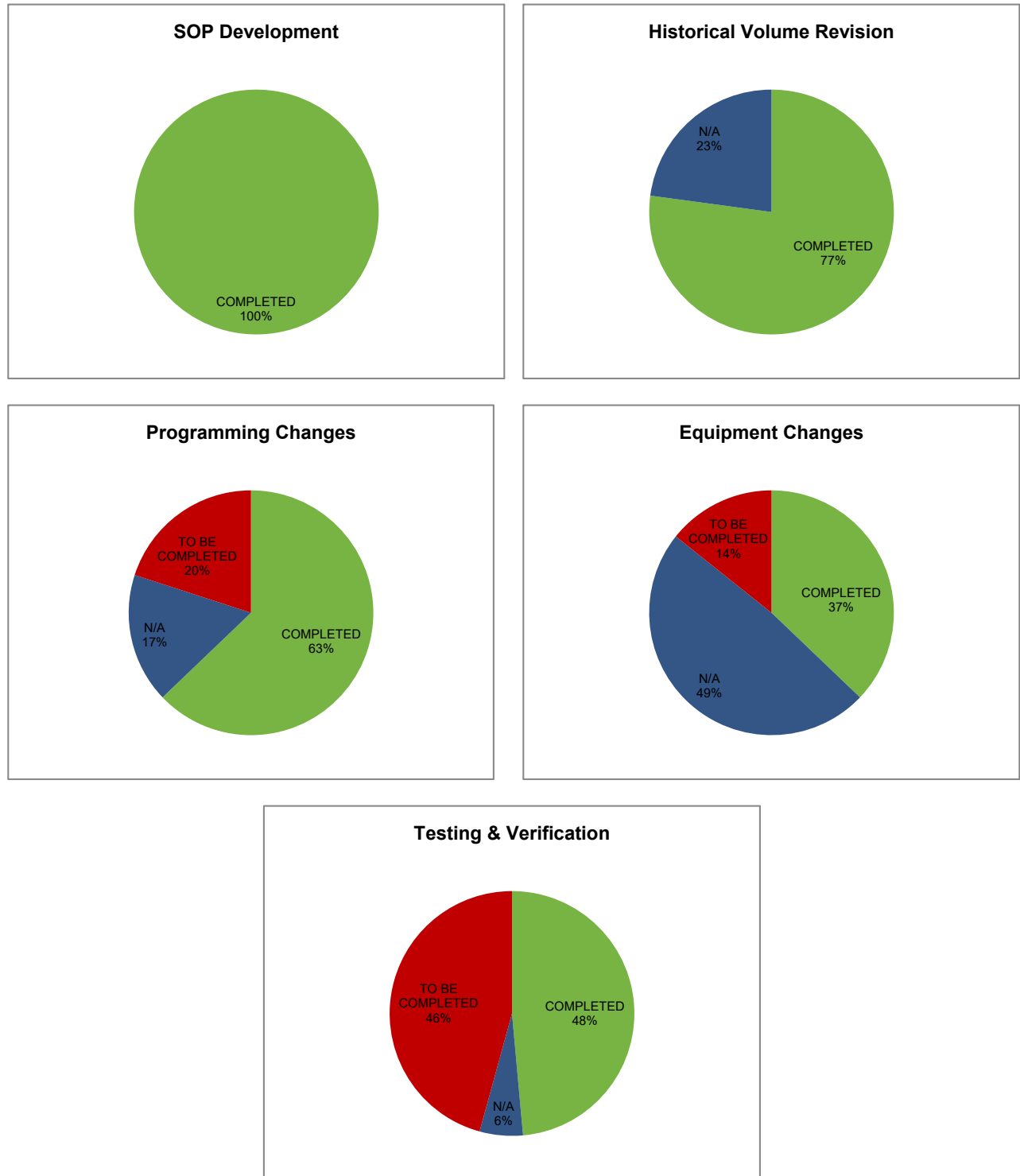
A workgroup was established to review CSO flow monitoring and resolve potential over-reporting of overflow volumes. Initial findings indicated that potentially significant discrepancies between modeling and monitoring data existed at 33 of MSD's 98 CSO locations. This set of 33 CSOs was the highest priority to review, correct data, document SOPs, and implement changes. For these CSO locations, MSD performed site visits including elevation surveys, performed detailed analysis, investigated equipment configurations, and investigated PLC programming or monitoring program logic. This has led to the development of an SOP for each CSO that describes the existing monitoring equipment, configuration, and flow calculation in use as of December 31, 2016, and evaluates the effectiveness of the existing setup. If a more effective arrangement was recommended, MSD added the proposed arrangement to the SOP for implementation and determined if historical data could be updated. In cases where the historical data could be updated, MSD has developed revised volumes for reporting. Locations for which revised volumes have been developed are detailed in Appendix F. In some cases, historical volumes could not be recalculated based on the available data. For instance, CSOs influenced by river or creek elevation for which there was no available historic level data could not be recalculated for historical volumes but will be calculated or measured according to the revised SOPs as they are implemented.

To date, SOPs have been drafted and historical volume data corrections (where possible) have been made for all of the 33 initial CSO locations. These changes have also been made for two additional CSO locations included in the review due to interaction with priority CSOs. Multiple SOPs require programming or equipment changes in order to implement the final SOPs. During the upcoming reporting period, MSD will continue working to procure and replace equipment as required and update the programming at the PLC or with monitoring program logic, as summarized in Figure 6.2 and detailed in Appendix F, to complete implementation of the SOPs.

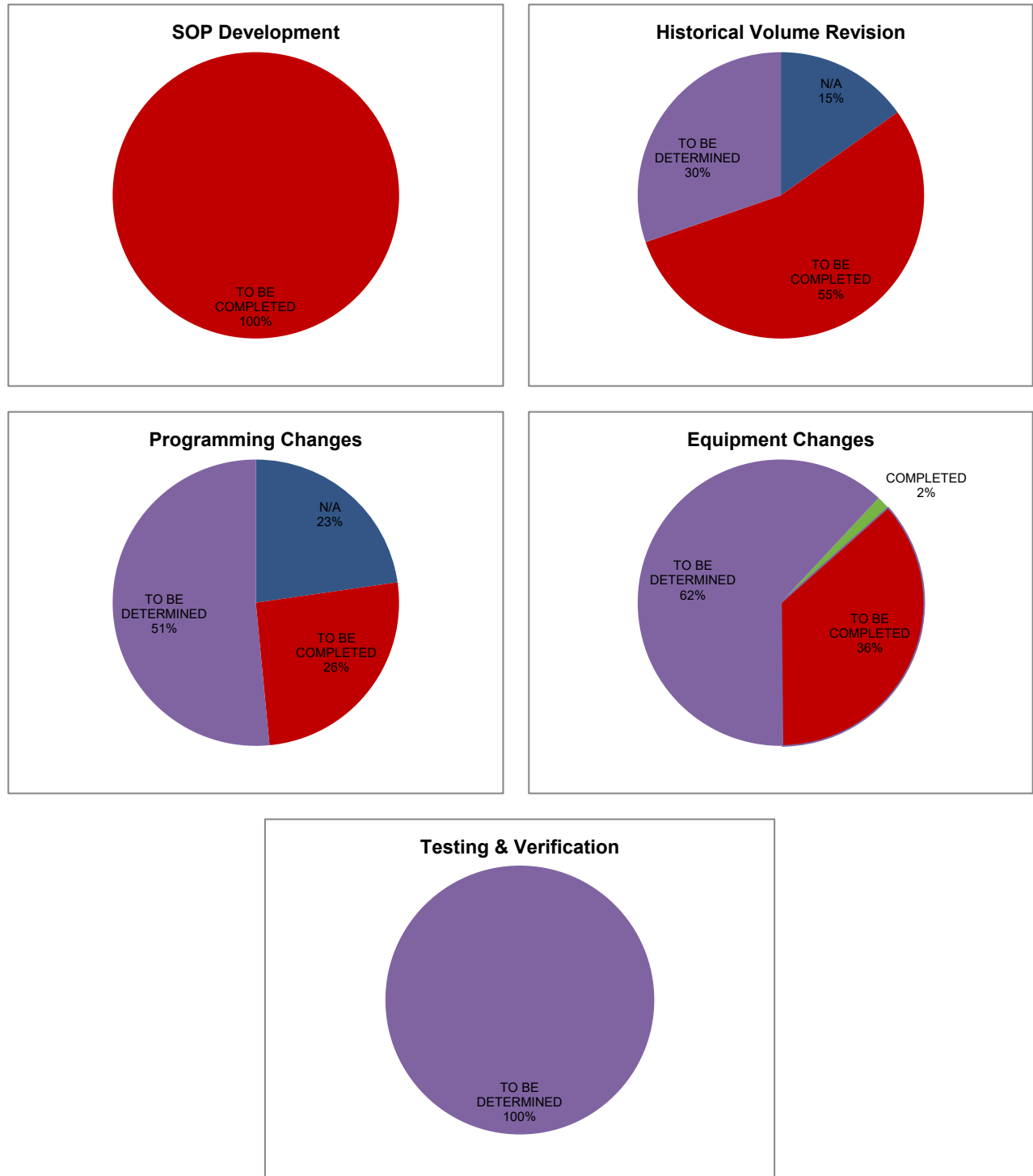
The remaining 65 active CSO locations are being reviewed during the current fiscal year. MSD has also identified two inactive sites with historic data that will be reviewed. MSD has developed a schedule for review of these sites and begun site visits, calculation review, and SOP development. Status for these remaining CSOs is summarized in Figure 6.3 and detailed in Appendix F.

Until the review is complete, CSO flow monitoring data will continue to be included as an appendix to each quarterly report, will be listed as "Draft", and will include the statement "CSO data monitoring procedures are currently being revised". As changes are made to flow meter locations and or flow meter calculation algorithms, MSD will provide status updates in the quarterly reports on progress to evaluate data accuracy, revise monitoring data records, update monitoring procedures, and implement recommendations. CSO flow monitoring data reported quarterly will include updated volumes based on completion of the review and update of the reporting standards for each CSO. Revised volumes for previous reporting periods up to and including FY17 for the 33 CSO locations initially reviewed were included as an appendix to the FY17 Consent Decree Annual Report. Any subsequently developed revised volumes for previous reporting periods up to and including FY18 will be included as an appendix to the FY18 Consent Decree Annual Report.

**Figure 6.2. CSO Flow Monitoring Quality Improvement Status – Phase 1**



**Figure 6.3. CSO Flow Monitoring Quality Improvement Status – Phase 2**



## 6.5. COLLECTION SYSTEM OVERFLOW PERFORMANCE

### 6.5.1. UNAUTHORIZED DISCHARGES TO WATERS OF US

MSD recorded information related to overflows reaching Waters of the United States (WUS) for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. Details of these overflows are included in Appendix A-3 . During this quarter, 161 unauthorized discharges to WUS were reported, summarized in Table 6.3.

**Table 6.3. Dry and Wet Weather SSOs by Cause – Unauthorized Discharges to Waters of US**

PROBLEM	DRY WEATHER	WET WEATHER
ELECTRICAL PROBLEMS AT MSD	0	1
LACK OF SYSTEM CAPACITY	0	155
OBSTRUCTION-NOT GREASE / ROOTS	1	0
PUMPED OVERFLOW	0	1
ROOTS	1	2

### 6.5.2. OVERFLOWS TO THE EXTERIOR

MSD recorded information related to overflows to the ground that did not reach Waters of the United States for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows will be included in the Annual Report for the reporting period.

### 6.5.3. OVERFLOWS TO INTERIOR

MSD recorded information related to overflows to building interiors for the reporting period. This information is entered and maintained in Hansen utilizing procedures reviewed and improved through efforts associated with various components of the Amended Consent Decree. These overflows, that are the result of an issue in the main line, will be included in the Annual Report for the reporting period.

## 6.6. GRAVITY LINE PREVENTIVE MAINTENANCE (GLPM)

Each quarter, data and statistics relating to the cleaning, inspection and maintenance of sewer assets performed under the Gravity Line Preventive Maintenance are reported. Data for the current and previous three reporting periods are shown in Table 6.4.

Targets have been developed for planned maintenance (PM) only, which includes any activities that are routinely scheduled to maintain asset condition and decrease its likelihood of failure. Unscheduled maintenance (UM) activities include those activities performed as a reaction to correct asset deficiencies.

**Table 6.4. Rolling Quarterly GLPM Performance with Targets**

ACTIVITY	ACTIVITY TYPE	AREA	APR-JUN	JUL-SEP	OCT-DEC	JAN-MAR	TOTAL	TARGET / QTR	% OF ANNUAL TARGET
Catch Basins Cleaned	PM	Combine System	6,799	6,317	5,524	3,526	22,166	4,460	20%
		Separate System	2,551	1,587	184	477	4,799	1,144	10%
	UM	Combined System	259	54	274	203	790		
		Separate System	49	367	45	86	547		
CSO Inspections	PM	Combined System	1,273	1,279	1,260	1,250	5,062	1,272	25%
CSO Debris Removal WO	UM		177	149	139	140	605		
Sewer Main Chemical Root Treatment (LF)	UM	Combined System	0	0	0	18,437	18,437		
		Separate System	0	0	0	362,026	362,026		
Sewer Main Flushing and Cleaning (LF)	UM	Combined System	2,624	6,159	1,720	1,908	12,411		
		Separate System	61,634	58,818	29,288	38,469	188,209		
Total Sewer Main Inspections (LF)	PM	County Wide	235,246	93,687	115,147	36,894	480,975	396,000	2%
Sewer Main Root Cutting (LF)	UM	Combined System	1,067	310	0	510	1,887		
		Separate System	21,865	6,228	83,418	20,513	132,024		



## APPENDICES

Appendix A	Discharge Work Orders
Appendix A-1	Discharge Work Orders – Dry Weather CSOs
Appendix A-2	Discharge Work Orders – Bypass
Appendix A-3	Discharge Work Orders – Unauthorized Discharges
Appendix B	CSO Flow Monitoring Data
Appendix C	Acronyms
Appendix D	SCAP Balance
Appendix E	IOAP Project Crosswalk
Appendix F	CSO Flow Monitoring Quality Improvement

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**Appendix A-1**      Discharge Work Orders – Dry Weather CSOs

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ASSOCIATED WASTEWATER TREATMENT PLANT NAME	ASSOCIATED TREATMENT PLANT KPDES #	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	FACILITY DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD

{


No Dry Weather CSOs  
Occurred During the  
Reporting Period

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**Appendix A-2**      Discharge Work Orders – Bypass

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ASSOCIATED WASTEWATER TREATMENT PLANT NAME	ASSOCIATED TREATMENT PLANT KPDES #	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	FACILITY DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	1/22/2018 10:30	1/22/2018 10:58	1,210,000	SEWER TREATMENT PLANT	MSD0278	STREAM	OHIO RIVER	STRUCTURAL FAILURE	BYPASS AT WQTC	DISREV RAIN EVENT DISCHARGE	2855275	MSD PERSONNEL CLEANED	CONTRACTORS REPAIRED LEAKING SODIUM HYPOCHLORITE LINE
HITE CREEK	KY0022420	5500 HITT RD	3/3/2018 14:55	3/3/2018 15:05	500	SEWER TREATMENT PLANT	MSD0202	STREAM	HITE CREEK	LOST POWER TO CONTROL SYSTEM OF INFLUENT PS.	BYPASS AT WQTC	DISDW DRY WEATHER DISCHARGE	2874099	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREAS.	SHUT DOWN STORM WATER PS. MSD PUMPED STORM WATER BACK TO WQTC HEADWORKS.

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**Appendix A-3**

Discharge Work Orders – Unauthorized Discharges

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**Appendix A-3 Discharge Work Orders – Unauthorized Discharges**

ASSOCIATED WASTEWATER TREATMENT PLANT NAME	ASSOCIATED TREATMENT PLANT KPDES #	OVERFLOW LOCATION	OVERFLOW START DATE & TIME	OVERFLOW STOP DATE & TIME	VOLUME OF OVERFLOW (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	FACILITY DISCHARGES TO	RECEIVING STREAM	CAUSE OF OVERFLOW	DUE TO	WEATHER	WO #	CLEANUP EFFORTS BY MSD	REPAIR EFFORTS BY MSD
MORRIS FORMAN	KY0022411	9011 OLD WHIPPS MILL RD	2/25/2018 11:55	2/25/2018 14:29	150	SEWER MANHOLE	02099	GROUND	MIDDLE FORK BEARGRASS CREEK	HEAVY RAIN - LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2869678	MSD PERSONNEL WILL CLEAN AND SANITIZE THE IMPACTED AREA. WO#28670160	A SOLUTION FOR THIS LOCATION IS INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	6000 REGAL SPRINGS DR	2/25/2018 13:27	2/27/2018 10:30	28,800	SEWER MANHOLE	48753	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2869715	WO# 2870901	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1552 CHEROKEE RD	2/25/2018 16:40	2/27/2018 10:30	28,800	SEWER MANHOLE	40471	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2869769	WO 2870906	LOCATED IN IOAP
MORRIS FORMAN	KY0022411	257 ADAMS ST	3/2/2018 12:27	3/2/2018 17:26	1,500	SEWER MANHOLE	100755A-X	CATCH BASIN	OHIO RIVER	CAPACITY ISSUE. MAIN IS IN AREA WHERE RIVER JUST RECEDED. AREA WAS FLOODED. MAIN STILL AT CAPACITY ISSUE WITH RAIN EVENT.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2873914	NO CLEAN UP REQUIRED. NO SOLIDS.	WILL RETURN AFTER DISCHARGE STOPS.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/24/2018 10:00	3/26/2018 21:00	7,400	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880629	WO# 2881335.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	3/24/2018 14:05	3/25/2018 13:43	1,636,965	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880613	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	3/24/2018 15:32	3/25/2018 10:15	4,200	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880630	WO# 2880715.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	3/24/2018 15:38	3/25/2018 10:20	105,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880631	WO# 2880716.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	3/24/2018 15:40	3/26/2018 10:25	1,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880714	WO# 2881038.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	3/24/2018 16:46	3/25/2018 9:52	72,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880642	WO# 2880719.	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CINDERELLA LN	3/24/2018 17:45	3/25/2018	36,000	SEWER MANHOLE	60679	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880634	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9317 LANTANA DR	3/24/2018 18:25	3/25/2018 5:00	16,500	SEWER MANHOLE	25484	STREAM	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880639	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	8800 ADMIRAL DR	3/24/2018 18:45	3/24/2018 19:06	100	SEWER MANHOLE	93703	GROUND	PENNSYLVANIA RUN	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880649	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	LOCATION INCLUDED IN THE IOAP.
HITE CREEK	KY0022420	7302 FLOYDSBURG RD	3/24/2018 19:17	3/24/2018 20:20	1,200	SEWER MANHOLE	108953	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2880656	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/28/2018 13:30	3/28/2018 19:00	3,360	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	A ROOT BLOCKAGE WAS IDENTIFIED IN THE DOWNSTREAM 10" SEWER LINE. WO2884644/WO3884764	ROOTS	DISREV RAIN EVENT DISCHARGE	2884648	NO DEBRIS OR SOLIDS/FLOATABLE. UNABLE TO USE CLEANER IN THE WATERWAYS.	I&FP CREW ROOT CUTTING THE SEWER LINE TO ELIMINATE THE ROOT ISSUE.
MORRIS FORMAN	KY0022411	1726 FRASER DR	3/29/2018 21:15	3/30/2018 15:15	46,800	SEWER MANHOLE	16649	DITCH	SOUTH FORK BEARGRASS CREEK	A ROOT BLOCKAGE WAS IDENTIFIED IN THE DOWNSTREAM 10" SEWER LINE.	ROOTS	DISREV RAIN EVENT DISCHARGE	2885167	NO DEBRIS OR SOLIDS/FLOATABLE. UNABLE TO USE CLEANER IN THE WATERWAYS.	I&FP CREW ROOT CUTTING THE SEWER LINE TO ELIMINATE THE ROOT ISSUE.
MORRIS FORMAN	KY0022411	1001 BRECKENRIDGE LN	3/29/2018 21:42	3/30/2018 20:33	1,655,877	SEWER MANHOLE	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2885166	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO STREAM.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	3/29/2018 23:15	3/31/2018 9:10	180,000	SEWER MANHOLE	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2885171	WO# 2885500.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1132 ROSTREVOR CIR	3/29/2018 23:15	3/31/2018 9:00	68,000	SEWER MANHOLE	45835	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2885170	WO# 2885499.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	3/30/2018	3/31/2018 9:31	180,000	SEWER MANHOLE	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2885174	WO# 2885502.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OXMOOR LN	3/30/2018 0:20	3/31/2018 19:30	180,000	SEWER MANHOLE	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-HEAVY RAIN.	LACK OF SYSTEM CAPACITY	DISREV RAIN EVENT DISCHARGE	2885175	WO# 2885473.	LOCATION INCLUDED IN IOAP.



## Appendix B      CSO Flow Monitoring Data

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CSO	Start Date-Time	End Date-Time	Duration (Minutes)	Rain Total (Inch)	Discharge Volume per Rainfall	Antecedent Rain	Frequency	Period	Standard	Comments	Sum of Overflow Volume (Gal)	Event
	2/23/2018 1:30	2/23/2018 22:15	1245	2.06	1,429,985	5.57	0.94	12	Atlas		2,945,769	1
	2/24/2018 10:00	2/26/2018 5:00	2580	2.26	2,561,197	6.78	0.93	12	Atlas		5,788,306	1
	3/19/2018 17:15	3/19/2018 20:15	180	0.35	1,262,763	0.38	0.19	3	Atlas		441,967	1
	3/20/2018 21:15	3/20/2018 21:15	0	0.56	6,679	0.63	0.22	24	Atlas		3,740	1
	3/24/2018 4:15	3/24/2018 21:15	1020	1.16	7,750,170	2.07	0.45	24	Atlas		8,990,197	1
	3/28/2018 5:15	3/28/2018 10:30	315	1.2	362,122	1.84	0.31	48	Atlas		434,546	1
	3/29/2018 17:00	3/29/2018 23:15	375	1.2	2,120,613	2.24	0.31	48	Atlas		2,544,736	1
<b>CSO050 Total</b>											<b>26,078,219</b>	<b>18</b>
<b>CSO051</b>	1/22/2018 19:30	1/22/2018 19:30	0	0.29	14,869	0.38	0.13	12	Atlas		4,312	1
	3/29/2018 19:15	3/29/2018 19:15	0	1.2	101	2.14	0.31	48	Atlas		121	1
	2/23/2018 3:00	2/23/2018 13:30	630	2.06	296,943	5.24	0.94	12	Atlas		611,702	1
	2/7/2018 3:15	2/7/2018 3:15	0	0.7	593	0.98	0.38	6	Atlas		415	1
	2/16/2018 2:30	2/16/2018 2:30	0	1.05	183	1.48	0.48	12	Atlas		192	1
	2/11/2018 10:00	2/11/2018 10:00	0	0.42	6,612	1.19	0.23	3	Atlas		2,777	1
	2/14/2018 7:15	2/14/2018 7:15	0	0.63	400	0.88	0.29	3	Atlas		252	1
	2/22/2018 1:30	2/22/2018 10:00	510	2.17	85,119	3.55	0.75	24	Atlas		184,708	1
	2/24/2018 18:00	2/26/2018 12:45	2565	2.26	390,661	6.49	0.93	12	Atlas		882,894	1
	3/24/2018 10:30	3/24/2018 13:30	180	1.16	13,352	1.80	0.45	24	Atlas		15,488	1
<b>CSO051 Total</b>											<b>1,702,861</b>	<b>10</b>
<b>CSO052</b>	1/22/2018 19:15	1/22/2018 19:15	0	0.27	304	0.27	0.12	12	Atlas		82	1
	2/23/2018 2:30	2/23/2018 20:15	1065	1.84	183,382	4.79	0.84	12	Atlas		337,422	1
	2/24/2018 10:15	3/1/2018 16:45	7590	2.13	440,742	6.21	0.90	12	Atlas		938,780	1
	3/29/2018 19:00	3/29/2018 22:45	225	0.67	7,201	2.15	0.22	24	Atlas		4,825	1
	2/7/2018 3:45	2/7/2018 3:45	0	0.6	1,942	0.86	0.33	6	Atlas		1,165	1
	2/11/2018 11:15	2/11/2018 11:15	0	0.41	1,522	1.13	0.22	3	Atlas		624	1
	2/16/2018 2:15	2/16/2018 12:00	585	0.98	102,515	2.12	0.44	12	Atlas		100,465	1
	2/21/2018 21:45	2/22/2018 11:30	825	1.89	121,240	3.15	0.71	24	Atlas		229,144	1
	3/10/2018 2:45	3/10/2018 2:45	0	0.59	751	0.60	0.37	3	Atlas		443	1
	3/24/2018 9:30	3/24/2018 19:15	585	1.13	40,139	1.92	0.43	24	Atlas		45,357	1
<b>CSO052 Total</b>											<b>1,658,307</b>	<b>10</b>
<b>CSO053</b>	2/22/2018 3:15	2/22/2018 5:15	120	1.89	394	3.08	0.71	24	Atlas		745	1
	2/23/2018 4:15	2/23/2018 4:15	0	1.84	240	3.60	0.84	12	Atlas		441	1
	2/24/2018 19:00	2/24/2018 23:15	255	2.13	19,828	5.58	0.90	12	Atlas		42,234	1
<b>CSO053 Total</b>											<b>43,420</b>	<b>3</b>
<b>CSO054</b>	2/24/2018 10:30	2/26/2018 16:45	3255	2.13	1,524,022	6.12	0.90	12	Atlas		3,246,166	1
	2/23/2018 3:00	2/23/2018 13:30	630	1.84	436,013	4.72	0.84	12	Atlas		802,263	1
	2/16/2018 10:15	2/16/2018 10:45	30	0.98	2,467	2.06	0.44	12	Atlas		2,418	1
	2/22/2018 1:15	2/22/2018 11:00	585	1.89	303,846	3.15	0.71	24	Atlas		574,269	1
	2/28/2018 9:00	3/1/2018 15:00	1800		0	5.75	#N/A	#N/A	#N/A	Data Under Review	209,777	1
	3/24/2018 10:15	3/24/2018 13:30	195	1.13	66,347	1.68	0.43	24	Atlas		74,972	1
<b>CSO054 Total</b>											<b>4,909,865</b>	<b>6</b>
<b>CSO055</b>	1/22/2018 19:30	1/22/2018 19:30	0	0.27	574	0.34	0.12	12	Atlas		155	1
	1/12/2018 5:00	1/12/2018 5:00	0	0.32	16	0.27	0.12	24	Atlas		5	1
	2/7/2018 2:45	2/7/2018 3:30	45	0.6	1,707	0.86	0.33	6	Atlas		1,024	1
	2/11/2018 10:15	2/11/2018 11:45	90	0.41	50,029	1.13	0.22	3	Atlas		20,512	1
	2/24/2018 10:30	2/26/2018 15:45	3195	2.13	464,662	6.12	0.90	12	Atlas		989,730	1
	2/16/2018 2:45	2/16/2018 13:15	630	0.98	205,933	2.12	0.44	12	Atlas		201,814	1
	2/14/2018 6:15	2/14/2018 10:00	225	0.55	9,775	1.01	0.26	3	Atlas		5,376	1
	2/21/2018 22:00	2/22/2018 12:45	885	1.89	561,544	3.15	0.71	24	Atlas		1,061,319	1
	2/23/2018 1:45	2/23/2018 22:15	1230	1.84	755,003	4.94	0.84	12	Atlas		1,389,206	1
	3/19/2018 20:00	3/26/2018 10:30	9510	0.3	2,497,170	2.01	0.17	3	Atlas		749,151	1
	3/28/2018 12:45	4/1/2018	4995	0.49	84,382	2.57	0.21	6	Atlas		41,347	1
<b>CSO055 Total</b>											<b>4,459,639</b>	<b>11</b>
<b>CSO056</b>	2/22/2018 3:15	2/22/2018 7:00	225	1.89	290,963	3.15	0.71	24	Atlas		549,920	1
	2/23/2018 3:15	2/23/2018 12:00	525	1.84	424,943	4.69	0.84	12	Atlas		781,895	1
	2/7/2018 10:45	2/7/2018 10:45	0	0.6	3	0.91	0.33	6	Atlas		2	1
	2/24/2018 18:15	2/26/2018 12:00	2505	2.13	1,654,348	5.87	0.90	12	Atlas		3,523,761	1
	3/29/2018 9:45	3/29/2018 9:45	0	0.67	445	1.77	0.22	24	Atlas		298	1
<b>CSO056 Total</b>											<b>4,855,876</b>	<b>5</b>
<b>CSO057</b>	1/12/2018 2:30	1/12/2018 17:00	870	0.29	6,093	0.37	0.11	24	Atlas		1,767	1

CSO	Start Date-Time	End Date-Time	Duration (Minutes)	Rain Total (Inch)	Discharge Volume per Rainfall	Antecedent Rain	Frequency	Period	Standard	Comments	Sum of Overflow Volume (Gal)	Event	
CSO057	1/8/2018 5:45	1/8/2018 8:45	180	0.11	727	0.11	0.05	12	Atlas		80	1	
	1/11/2018 9:15	1/11/2018 11:15	120	0.06	283	0.17	0.03	3	Atlas		17	1	
	1/22/2018 11:45	1/22/2018 20:45	540	0.24	4,113	0.37	0.11	1	Atlas		987	1	
	1/27/2018 17:00	1/27/2018 17:45	45	0.34	44	0.60	0.19	3	Atlas		15	1	
	2/22/2018 3:15	2/22/2018 5:15	120	1.79	7,528	2.81	0.67	24	Atlas		13,475	1	
	2/23/2018 2:30	2/23/2018 4:45	135	1.48	1,024	3.33	0.68	12	Atlas		1,516	1	
	2/11/2018 4:15	2/11/2018 10:15	360	0.4	315	1.22	0.20	3	Atlas		126	1	
	2/16/2018 2:30	2/16/2018 9:15	405	0.85	314	1.54	0.36	12	Atlas		267	1	
	2/24/2018 10:00	2/24/2018 23:15	795	2.04	457	5.28	0.84	12	Atlas		933	1	
	3/28/2018 5:15	3/28/2018 9:15	240	1.14	6	1.60	0.29	48	Atlas		7	1	
	3/24/2018 10:30	3/24/2018 17:15	405	1.05	17	1.67	0.40	24	Atlas		18	1	
	2/1/2018 16:45	2/1/2018 16:45	0	0.12	50	0.45	0.07	3	Atlas		6	1	
	2/4/2018 3:15	2/4/2018 6:00	165	0.15	1,013	0.26	0.08	6	Atlas		152	1	
	2/7/2018	2/7/2018 5:00	300	0.69	1,604	0.97	0.37	6	Atlas		1,107	1	
	2/14/2018 7:00	2/14/2018 16:15	555	0.39	803	0.91	0.19	3	Atlas		313	1	
	2/15/2018 5:30	2/15/2018 5:45	15	0.01	400	0.92	0.01	1	Atlas		4	1	
	2/17/2018 12:00	2/17/2018 12:45	45	0.21	195	1.83	0.13	3	Atlas		41	1	
	2/21/2018 7:00	2/21/2018 9:15	135	1.79	14	1.56	0.67	24	Atlas		25	1	
	2/21/2018 17:45	2/21/2018 18:30	45	1.79	11	1.46	0.67	24	Atlas		20	1	
	2/28/2018 13:30	2/28/2018 14:00	30	0.07	143	5.08	0.04	6	Atlas		10	1	
	3/1/2018 6:15	3/1/2018 14:00	465	0.01	16,200	3.61	0.01	1	Atlas		162	1	
	3/20/2018 15:30	3/20/2018 15:45	15	0.47	9	0.34	0.18	24	Atlas		4	1	
	3/29/2018 3:15	3/29/2018 3:15	0	1.14	3	1.67	0.29	48	Atlas		3	1	
	<b>CSO057 Total</b>											<b>21,055</b>	<b>24</b>
	CSO058	1/22/2018 11:45	1/22/2018 20:00	495	0.29	10,148	0.41	0.16	1	Atlas		2,943	1
		1/8/2018 8:30	1/8/2018 11:30	180	0.11	20,727	0.12	0.05	12	Atlas		2,280	1
		1/11/2018 8:45	1/11/2018 10:15	90	0.06	1,083	0.17	0.03	3	Atlas		65	1
		1/12/2018 3:15	1/13/2018 4:00	1485	0.29	18,924	0.46	0.11	24	Atlas		5,488	1
		1/13/2018 15:00	1/13/2018 16:30	90	0.02	188,200	0.48	0.01	12	Atlas		3,764	1
1/27/2018 13:30		1/27/2018 17:00	210	0.34	10,718	0.62	0.19	3	Atlas		3,644	1	
3/24/2018 9:00		3/24/2018 12:30	210	1.02	169	1.50	0.39	24	Atlas		172	1	
3/29/2018 19:00		3/29/2018 22:45	225	0.62	229	1.98	0.21	24	Atlas		142	1	
2/14/2018 6:15		2/14/2018 15:15	540	0.4	748	0.93	0.20	3	Atlas		299	1	
2/17/2018 12:45		2/17/2018 13:30	45	0.22	264	1.87	0.13	3	Atlas		58	1	
2/16/2018 2:15		2/17/2018 1:45	1410	0.81	25,484	1.75	0.34	12	Atlas		20,642	1	
2/1/2018 18:00		2/1/2018 18:00	0	0.11	127	0.45	0.07	3	Atlas		14	1	
2/7/2018 0:15		2/7/2018 10:45	630	0.66	3,297	0.94	0.36	6	Atlas		2,176	1	
2/17/2018 22:15		2/18/2018 9:00	645	0.22	33,859	1.90	0.13	3	Atlas		7,449	1	
2/20/2018 9:15		3/2/2018 13:15	14640		0	6.59	#N/A	#N/A	#N/A	Data Under Review	1,746,279	1	
3/10/2018 0:15		3/10/2018 2:15	120	0.58	217	0.55	0.37	3	Atlas		126	1	
3/19/2018 17:30		3/19/2018 19:45	135	0.27	11,381	0.29	0.15	3	Atlas		3,073	1	
3/28/2018 5:30		3/28/2018 10:45	315	0.49	924	1.64	0.21	6	Atlas		453	1	
3/31/2018 21:45		3/31/2018 22:30	45	0.2	180	1.34	0.11	3	Atlas		36	1	
<b>CSO058 Total</b>												<b>1,799,103</b>	<b>19</b>
CSO082	2/7/2018 3:15	2/7/2018 4:45	90	0.62	57,966	0.86	0.33	6	Atlas		35,939	1	
	2/11/2018 10:00	2/11/2018 11:15	75	0.41	440,602	1.10	0.20	3	Atlas		180,647	1	
	3/24/2018 10:30	3/24/2018 20:00	570	0.93	132,271	1.68	0.35	24	Atlas		123,012	1	
	2/14/2018 8:45	2/14/2018 10:00	75	0.45	55,147	0.91	0.23	3	Atlas		24,816	1	
	2/16/2018 3:00	2/16/2018 15:30	750	0.72	2,998,033	1.70	0.31	12	Atlas		2,158,584	1	
	2/17/2018 13:45	2/17/2018 18:30	285	0.21	3,751,181	1.85	0.13	3	Atlas		787,748	1	
	2/21/2018 8:45	3/2/2018 4:45	12720	1.7	28,737,234	5.79	0.63	24	Atlas		48,853,298	1	
	3/29/2018 19:30	3/29/2018 19:45	15	1.04	2,033	1.78	0.27	48	Atlas		2,114	1	
	3/31/2018 22:30	4/1/2018	90	0.2	1,420,830	1.30	0.12	3	Atlas		284,166	1	
	<b>CSO082 Total</b>											<b>52,450,324</b>	<b>9</b>
CSO083	2/22/2018 4:45	2/22/2018 5:15	30	1.58	7,713	2.45	0.58	24	Atlas		12,186	1	
	2/23/2018 4:45	2/23/2018 4:45	0	1.15	182	2.69	0.53	12	Atlas		209	1	
	2/24/2018 18:45	2/25/2018 1:00	375	1.65	314,055	4.29	0.66	12	Atlas		518,190	1	
<b>CSO083 Total</b>											<b>530,585</b>	<b>3</b>	
CSO084	3/29/2018 19:00	3/29/2018 20:00	60	1.1	123,535	1.84	0.28	48	Atlas		135,888	1	
	3/24/2018 9:30	3/24/2018 12:30	180	0.94	123,234	1.46	0.36	24	Atlas		115,840	1	

CSO	Start Date-Time	End Date-Time	Duration (Minutes)	Rain Total (Inch)	Discharge Volume per Rainfall	Antecedent Rain	Frequency	Period	Standard	Comments	Sum of Overflow Volume (Gal)	Event
CSO084	2/22/2018 5:15	2/22/2018 9:00	225	1.58	841,997	2.50	0.58	24	Atlas		1,330,356	1
	2/24/2018 19:30	2/25/2018 15:45	1215	1.65	2,663,713	4.39	0.66	12	Atlas		4,395,127	1
<b>CSO084 Total</b>											<b>5,977,211</b>	<b>4</b>
CSO092	2/24/2018 18:45	2/25/2018 0:45	360	1.67	667	4.27	0.69	12	Atlas		1,114	1
<b>CSO092 Total</b>											<b>1,114</b>	<b>1</b>
CSO093	3/1/2018 11:45	3/1/2018 14:30	165	0.02	304,050	2.97	0.01	12	Atlas		6,081	1
<b>CSO093 Total</b>											<b>6,081</b>	<b>1</b>
CSO097	2/7/2018 3:00	2/7/2018 4:15	75	0.41	16,863	0.62	0.22	6	Atlas		6,914	1
	2/16/2018 3:00	2/16/2018 11:00	480	0.73	6,456	1.71	0.33	12	Atlas		4,713	1
	2/11/2018 9:15	2/11/2018 11:00	105	0.35	39,697	0.82	0.17	3	Atlas		13,894	1
	2/21/2018 21:00	2/22/2018 16:00	1140	1.69	147,798	2.71	0.62	24	Atlas		249,779	1
	2/23/2018 2:45	2/26/2018 9:30	4725	1.14	1,911,451	5.38	0.52	12	Atlas		2,179,054	1
	3/10/2018 1:00	3/10/2018 2:00	60	0.62	3,576	0.52	0.39	3	Atlas		2,217	1
	3/24/2018 10:00	3/24/2018 17:00	420	0.85	43,026	1.63	0.33	12	Atlas		36,572	1
	3/29/2018 18:45	3/29/2018 20:30	105	0.72	50,692	1.79	0.24	24	Atlas		36,498	1
	<b>CSO097 Total</b>										<b>2,529,641</b>	<b>8</b>
CSO104	2/22/2018 4:00	2/24/2018 23:45	4065	2.1	893,529	7.32	0.78	24	Atlas		1,876,411	1
<b>CSO104 Total</b>										<b>1,876,411</b>	<b>1</b>	
CSO105	1/22/2018 11:15	1/22/2018 11:15	0	0.15	8,660	0.15	0.07	12	Atlas		1,299	1
	1/27/2018 16:15	1/27/2018 16:30	15	0.49	21,124	0.64	0.29	3	Atlas		10,351	1
	2/16/2018 3:15	2/16/2018 12:30	555	0.74	5,592,143	1.80	0.34	12	Atlas		4,138,186	1
	2/7/2018 3:00	2/7/2018 6:15	195	0.55	6,346,815	0.83	0.28	6	Atlas		3,490,748	1
	3/29/2018 19:00	3/29/2018 23:30	270	1.3	1,822,353	2.26	0.33	48	Atlas		2,369,059	1
	2/14/2018 7:30	2/14/2018 11:00	210	0.6	2,062,872	0.93	0.29	3	Atlas		1,237,723	1
	2/21/2018 21:45	2/22/2018 8:45	660	2.1	9,463,867	3.02	0.78	24	Atlas		19,874,120	1
	3/24/2018 9:30	3/24/2018 21:30	720	1.07	8,539,829	2.18	0.41	24	Atlas		9,137,617	1
	2/24/2018 18:45	2/25/2018 1:45	420	2.65	901,728	6.66	1.74	12	Cloudburst		2,389,579	1
	2/11/2018 10:30	2/11/2018 12:30	120	0.27	5,319,441	0.92	0.13	3	Atlas		1,436,249	1
	2/23/2018 4:00	2/23/2018 7:00	180	1.92	1,899,596	4.01	0.88	12	Atlas		3,647,225	1
	3/10/2018 1:45	3/10/2018 4:45	180	0.64	2,767,423	0.67	0.41	3	Atlas		1,771,151	1
	3/19/2018 20:15	3/19/2018 21:30	75	0.38	1,471,484	0.39	0.19	6	Atlas		559,164	1
	3/28/2018 6:45	3/28/2018 8:00	75	1.3	256,868	1.61	0.33	48	Atlas		333,928	1
	<b>CSO105 Total</b>										<b>50,396,399</b>	<b>14</b>
CSO108	2/24/2018 19:00	2/24/2018 23:45	285	2.43	66,944	5.63	1.16	12	Cloudburst		162,675	1
	2/14/2018 6:45	2/21/2018 11:15	10350	0.44	8,248	2.86	0.20	12	Atlas		3,629	1
	2/22/2018 4:15	2/22/2018 11:00	405	2.01	1,882,198	3.33	0.72	24	Atlas		3,783,217	1
	2/23/2018 5:00	2/23/2018 17:00	720	1.43	1,439,898	4.31	0.66	12	Atlas		2,059,054	1
	2/25/2018 10:15	2/25/2018 17:15	420		0	5.88	#N/A	#N/A	#N/A		58,820	1
	3/1/2018 5:30	3/1/2018 14:45	555	0.04	450	4.08	0.02	12	Atlas		18	1
	3/29/2018 19:45	3/29/2018 19:45	0	1.26	16,867	2.00	0.34	48	Atlas		21,253	1
	<b>CSO108 Total</b>										<b>6,088,666</b>	<b>7</b>
CSO109	3/29/2018 19:15	3/29/2018 19:30	15	1.19	40,542	1.93	0.32	48	Atlas		48,245	1
	2/24/2018 10:30	2/24/2018 10:30	0	2.22	319	3.65	0.94	12	Atlas		708	1
	2/24/2018 19:00	2/24/2018 23:15	255	2.22	494,392	5.17	0.94	12	Atlas		1,097,551	1
	2/22/2018 4:30	2/22/2018 9:15	285	1.85	124,033	3.06	0.66	24	Atlas		229,461	1
	2/23/2018 4:30	2/23/2018 12:00	450	1.38	224,978	4.07	0.63	12	Atlas		310,470	1
<b>CSO109 Total</b>										<b>1,686,435</b>	<b>5</b>	
CSO110	1/27/2018 16:00	1/27/2018 16:15	15	0.31	29,958	0.37	0.17	3	Atlas		9,287	1
	2/14/2018 7:45	2/14/2018 9:45	120	0.39	101,854	0.74	0.18	12	Atlas		39,723	1
	3/29/2018 19:15	3/29/2018 23:00	225	1.07	375,007	1.82	0.29	48	Atlas		401,257	1
	3/28/2018 6:00	3/28/2018 6:30	30	1.07	37,689	1.23	0.29	48	Atlas		40,327	1
	2/24/2018 10:15	2/25/2018 15:30	1755	1.73	2,846,948	4.76	0.72	12	Atlas		4,925,220	1
	2/23/2018 3:15	2/23/2018 19:45	990	1.21	1,651,207	3.51	0.56	12	Atlas		1,997,960	1
	3/10/2018 1:15	3/10/2018 2:45	90	0.61	255,369	0.62	0.38	3	Atlas		155,775	1
	2/16/2018 3:00	2/16/2018 11:45	525	0.72	353,035	1.66	0.33	12	Atlas		254,185	1
	3/31/2018 22:30	3/31/2018 22:45	15	0.18	127,789	1.26	0.11	3	Atlas		23,002	1
	2/21/2018 21:00	2/22/2018 13:30	990	1.62	1,163,366	2.62	0.60	24	Atlas		1,884,653	1
	2/7/2018 3:30	2/7/2018 4:45	75	0.41	450,180	0.62	0.22	6	Atlas		184,574	1
	2/11/2018 9:30	2/11/2018 11:30	120	0.35	768,703	0.82	0.16	12	Atlas		269,046	1
	3/24/2018 9:15	3/24/2018 18:15	540	0.88	574,642	1.63	0.35	12	Atlas		505,685	1

CSO	Start Date-Time	End Date-Time	Duration (Minutes)	Rain Total (Inch)	Discharge Volume per Rainfall	Antecedent Rain	Frequency	Period	Standard	Comments	Sum of Overflow Volume (Gal)	Event
<b>CSO110 Total</b>											<b>10,690,694</b>	<b>13</b>
CSO111	3/29/2018 19:15	3/29/2018 20:15	60	1.07	101,192	1.77	0.29	48	Atlas		108,275	1
	2/24/2018 10:30	2/25/2018 10:15	1425	1.73	10,124,005	4.76	0.72	12	Atlas		17,514,529	1
	3/28/2018 6:00	3/28/2018 6:00	0	1.07	5,815	1.21	0.29	48	Atlas		6,222	1
	2/16/2018 2:45	2/16/2018 3:15	30	0.72	14,650	1.18	0.33	12	Atlas		10,548	1
	2/23/2018 3:15	2/23/2018 12:15	540	1.21	345,883	3.50	0.56	12	Atlas		418,518	1
	3/10/2018 1:15	3/10/2018 2:30	75	0.61	46,372	0.60	0.38	3	Atlas		28,287	1
	2/22/2018 1:30	2/22/2018 6:45	315	1.62	222,340	2.62	0.60	24	Atlas		360,190	1
	2/11/2018 10:30	2/11/2018 10:45	15	0.35	59,260	0.82	0.16	12	Atlas		20,741	1
	2/21/2018 7:30	2/21/2018 7:30	0	1.62	585	1.44	0.60	24	Atlas		948	1
	3/24/2018 10:45	3/24/2018 14:45	240	0.88	112,424	1.57	0.35	12	Atlas		98,933	1
	3/31/2018 22:15	3/31/2018 22:15	0	0.18	13,339	1.25	0.11	3	Atlas		2,401	1
<b>CSO111 Total</b>											<b>18,569,592</b>	<b>11</b>
CSO118	1/27/2018 14:30	1/27/2018 16:00	90	0.31	49,735	0.45	0.16	3	Atlas		15,418	1
	1/22/2018 19:45	1/22/2018 19:45	0	0.2	447,800	0.29	0.10	1	Atlas		89,560	1
	1/11/2018 10:15	1/11/2018 10:30	15	0.08	5,988	0.20	0.05	3	Atlas		479	1
	1/12/2018 4:00	1/12/2018 9:45	345	0.31	4,410	0.35	0.12	24	Atlas		1,367	1
	2/23/2018 2:30	2/23/2018 22:15	1185	1.15	12,127,850	3.52	0.53	12	Atlas		13,947,028	1
	2/21/2018 7:15	2/22/2018 16:00	1965	1.58	5,506,142	2.71	0.58	24	Atlas		8,699,704	1
	2/7/2018 1:15	2/7/2018 4:30	195	0.51	2,063,620	0.74	0.28	6	Atlas		1,052,446	1
	2/11/2018 4:00	2/11/2018 11:00	420	0.37	2,632,397	1.00	0.17	12	Atlas		973,987	1
	2/16/2018 2:30	2/16/2018 11:30	540	0.68	2,497,775	1.58	0.31	12	Atlas		1,698,487	1
	2/14/2018 7:15	2/14/2018 9:45	150	0.35	382,746	0.78	0.17	3	Atlas		133,961	1
	3/28/2018 5:30	3/28/2018 6:30	60	1.1	151,318	1.37	0.28	48	Atlas		166,450	1
	2/17/2018 14:00	2/17/2018 16:15	135	0.18	658,356	1.71	0.11	3	Atlas		118,504	1
	2/24/2018 9:30	2/26/2018 17:30	3360	1.65	11,616,313	4.57	0.66	12	Atlas		19,166,916	1
	2/28/2018 14:15	2/28/2018 15:15	60	0.07	512,457	4.15	0.04	6	Atlas		35,872	1
	3/1/2018 6:30	3/1/2018 14:00	450	0.01	1,274,800	2.88	0.01	1	Atlas		12,748	1
	3/10/2018 0:45	3/10/2018 3:00	135	0.53	1,382,683	0.55	0.33	3	Atlas		732,822	1
	3/19/2018 19:30	3/19/2018 20:00	30	0.28	232,371	0.31	0.17	3	Atlas		65,064	1
	3/24/2018 8:45	3/24/2018 19:45	660	0.94	1,561,395	1.68	0.36	24	Atlas		1,467,711	1
	3/29/2018 14:00	3/30/2018 6:45	1005	1.1	714,692	2.01	0.28	48	Atlas		786,161	1
	3/31/2018 22:00	3/31/2018 23:45	105	0.2	700,730	1.35	0.12	1	Atlas		140,146	1
<b>CSO118 Total</b>											<b>49,304,831</b>	<b>20</b>
CSO119	2/7/2018 2:45	2/7/2018 4:00	75	0.51	205,490	0.73	0.28	6	Atlas		104,800	1
	3/29/2018 19:00	3/29/2018 19:45	45	1.1	17,001	1.83	0.28	48	Atlas		18,701	1
	3/28/2018 5:45	3/28/2018 5:45	0	1.1	2,214	1.31	0.28	48	Atlas		2,435	1
	2/11/2018 4:00	2/11/2018 10:45	405	0.37	289,992	1.00	0.17	12	Atlas		107,297	1
	2/16/2018 2:30	2/16/2018 11:00	510	0.68	318,079	1.56	0.31	12	Atlas		216,294	1
	2/23/2018 2:45	2/23/2018 17:00	855	1.15	1,293,057	3.49	0.53	12	Atlas		1,487,015	1
	3/10/2018 0:45	3/10/2018 2:45	120	0.53	416,242	0.54	0.33	3	Atlas		220,608	1
	3/24/2018 8:45	3/24/2018 19:30	645	0.94	334,462	1.67	0.36	24	Atlas		314,394	1
	2/22/2018 0:45	2/22/2018 15:00	855	1.58	1,082,121	2.51	0.58	24	Atlas		1,709,751	1
	2/24/2018 9:45	2/26/2018 16:45	3300	1.65	2,609,087	4.57	0.66	12	Atlas		4,304,994	1
<b>CSO119 Total</b>											<b>8,486,289</b>	<b>10</b>
CSO120	1/22/2018 19:45	1/22/2018 19:45	0	0.33	50,848	0.41	0.20	1	Atlas		16,780	1
	1/11/2018 9:00	1/11/2018 9:00	0	0.06	320,833	0.14	0.03	3	Atlas		19,250	1
	1/27/2018 13:45	1/27/2018 15:45	120	0.32	59,813	0.59	0.17	3	Atlas		19,140	1
	2/16/2018 3:15	2/16/2018 10:45	450	0.72	150,528	1.66	0.31	12	Atlas		108,380	1
	2/22/2018 1:00	2/22/2018 8:45	465	1.7	86,868	2.64	0.63	24	Atlas		147,675	1
	2/23/2018 3:15	2/23/2018 16:30	795	1.29	135,522	3.71	0.59	12	Atlas		174,824	1
	2/7/2018 1:15	2/7/2018 4:15	180	0.62	97,876	0.86	0.33	6	Atlas		60,683	1
	2/14/2018 7:30	2/14/2018 9:30	120	0.45	97,882	0.91	0.23	3	Atlas		44,047	1
	2/21/2018 5:15	2/21/2018 7:15	120	1.7	22,086	1.53	0.63	24	Atlas		37,546	1
	2/11/2018 9:15	2/11/2018 9:15	0	0.41	28,734	0.89	0.20	3	Atlas		11,781	1
	3/29/2018 19:45	3/29/2018 22:30	165	1.04	19,331	1.83	0.27	48	Atlas		20,104	1
	2/24/2018 10:45	2/24/2018 21:45	660	1.67	44,235	4.20	0.67	12	Atlas		73,873	1
<b>CSO120 Total</b>											<b>734,083</b>	<b>12</b>
CSO121	1/22/2018 20:00	1/22/2018 20:00	0	0.33	2,155	0.40	0.20	1	Atlas		711	1
	3/29/2018 19:15	3/29/2018 19:45	30	1.04	53,791	1.78	0.27	48	Atlas		55,943	1











CSO	Start Date-Time	End Date-Time	Duration (Minutes)	Rain Total (Inch)	Discharge Volume per Rainfall	Antecedent Rain	Frequency	Period	Standard	Comments	Sum of Overflow Volume (Gal)	Event
CSO167	2/16/2018 2:45	2/16/2018 11:45	540	0.67	264,000	1.51	0.31	12	Atlas		176,880	1
	2/11/2018 4:15	2/11/2018 11:15	420	0.34	245,656	0.87	0.17	3	Atlas		83,523	1
	3/28/2018 5:45	3/28/2018 6:45	60	1.02	32,823	1.30	0.25	48	Atlas		33,479	1
	2/14/2018 7:15	2/14/2018 9:45	150	0.38	65,895	0.75	0.19	3	Atlas		25,040	1
	3/31/2018 22:15	4/1/2018	105	0.18	55,778	1.26	0.11	3	Atlas		10,040	1
	2/17/2018 14:00	2/17/2018 16:30	150	0.18	63,528	1.65	0.11	3	Atlas		11,435	1
	3/10/2018 0:45	3/10/2018 2:45	120	0.47	137,830	0.46	0.29	3	Atlas		64,780	1
	3/19/2018 17:45	3/19/2018 19:45	120	0.32	2,188	0.33	0.19	3	Atlas		700	1
	2/21/2018 5:00	3/2/2018 22:00	13980	1.9	11,016,707	6.13	0.65	24	Atlas		20,931,744	1
<b>CSO167 Total</b>											<b>21,749,695</b>	<b>14</b>
CSO178	2/11/2018 10:15	2/11/2018 10:30	15	0.4	463,590	1.02	0.21	3	Atlas		185,436	1
	2/7/2018 3:15	2/7/2018 4:00	45	0.54	542,124	0.81	0.30	6	Atlas		292,747	1
	2/23/2018 3:15	2/23/2018 9:30	375	1.44	1,131,045	3.73	0.66	12	Atlas		1,628,705	1
	3/10/2018 1:15	3/10/2018 2:30	75	0.68	237,831	0.67	0.43	3	Atlas		161,725	1
	2/24/2018 18:45	2/25/2018 9:30	885	2.1	2,013,795	5.26	0.86	12	Atlas		4,228,969	1
	3/24/2018 9:15	3/24/2018 12:45	210	1.12	340,453	1.62	0.43	24	Atlas		381,307	1
	2/22/2018 3:30	2/22/2018 6:15	165	1.71	989,007	2.85	0.64	24	Atlas		1,691,202	1
	<b>CSO178 Total</b>										<b>8,570,091</b>	<b>7</b>
CSO179	2/23/2018 4:15	2/23/2018 6:15	120	1.17	16,794	3.07	0.54	12	Atlas		19,649	1
	2/22/2018 5:30	2/22/2018 7:45	135	1.64	10,530	2.70	0.61	24	Atlas		17,269	1
	2/24/2018 19:15	2/25/2018 12:45	1050	1.79	969,050	4.60	0.73	12	Atlas		1,734,600	1
<b>CSO179 Total</b>										<b>1,771,518</b>	<b>3</b>	
CSO180	3/24/2018 12:00	3/24/2018 12:00	0	0.95	11,409	1.46	0.37	24	Atlas	Retained by Sneads Branch FPS	10,839	1
	2/7/2018 3:00	2/7/2018 3:15	15	0.44	33,407	0.62	0.23	6	Atlas	Retained by Sneads Branch FPS	14,699	1
	2/22/2018 3:15	2/22/2018 5:30	135	1.64	133,584	2.67	0.61	24	Atlas		219,077	1
	2/23/2018 3:00	2/23/2018 6:00	180	1.17	114,163	3.12	0.54	12	Atlas		133,571	1
	2/24/2018 18:30	2/25/2018 4:15	585	1.79	232,633	4.60	0.73	12	Atlas		416,413	1
	2/11/2018 4:00	2/11/2018 10:00	360	0.36	36,847	0.87	0.17	3	Atlas	Retained by Sneads Branch FPS	13,265	1
	2/16/2018 2:30	2/16/2018 2:45	15	0.75	9,316	1.15	0.34	12	Atlas	Retained by Sneads Branch FPS	6,987	1
	2/21/2018 7:00	2/21/2018 7:00	0	1.64	501	1.52	0.61	24	Atlas	Retained by Sneads Branch FPS	821	1
	3/29/2018 18:45	3/29/2018 19:30	45	1.15	35,217	1.86	0.30	48	Atlas	Retained by Sneads Branch FPS	40,500	1
<b>CSO180 Total</b>										<b>856,172</b>	<b>9</b>	
CSO181	2/22/2018 5:00	2/22/2018 5:30	30	1.69	31,675,810	2.68	0.63	24	Atlas		53,532,119	1
	2/22/2018 14:15	2/24/2018 17:45	3090		0	4.51	#N/A	#N/A	#N/A	Data Under Review	1,368,556,259	1
	2/26/2018 4:15	3/2/2018 17:45	6570		0	5.07	#N/A	#N/A	#N/A	Data Under Review	1,857,550,964	1
<b>CSO181 Total</b>										<b>3,279,639,342</b>	<b>3</b>	
CSO182	1/11/2018 9:00	1/11/2018 17:00	480	0.07	245,871	0.19	0.04	3	Atlas	Retained by Sneads Branch FPS	17,211	1
	1/27/2018 14:00	1/27/2018 17:30	210	0.32	210,647	0.46	0.17	6	Atlas	Retained by Sneads Branch FPS	67,407	1
	1/12/2018 3:45	1/12/2018 12:45	540	0.39	210,056	0.43	0.15	24	Atlas	Retained by Sneads Branch FPS	81,922	1
	2/16/2018 3:15	2/16/2018 12:00	525	0.71	343,546	1.65	0.33	12	Atlas	Retained by Sneads Branch FPS	243,918	1
	2/11/2018 4:15	2/11/2018 11:30	435	0.36	157,592	0.91	0.17	12	Atlas	Retained by Sneads Branch FPS	56,733	1
	2/7/2018 1:00	2/7/2018 4:45	225	0.44	223,957	0.66	0.24	6	Atlas	Retained by Sneads Branch FPS	98,541	1
	2/21/2018 5:15	2/22/2018 13:30	1935	1.63	1,264,926	3.01	0.61	24	Atlas		2,061,829	1
	2/23/2018 1:30	2/26/2018	4230	1.22	4,211,399	5.52	0.56	12	Atlas		5,137,907	1
	2/14/2018 7:15	2/14/2018 15:45	510	0.4	163,385	0.87	0.18	12	Atlas	Retained by Sneads Branch FPS	65,354	1
	3/19/2018 17:30	3/19/2018 20:15	165	0.26	98,231	0.29	0.15	3	Atlas	Retained by Sneads Branch FPS	25,540	1

CSO	Start Date-Time	End Date-Time	Duration (Minutes)	Rain Total (Inch)	Discharge Volume per Rainfall	Antecedent Rain	Frequency	Period	Standard	Comments	Sum of Overflow Volume (Gal)	Event
CSO182	3/28/2018 5:30	3/28/2018 11:30	360	0.44	56,755	1.51	0.18	12	Atlas	Retained by Sneads Branch FPS	24,972	1
	2/28/2018 14:15	2/28/2018 14:15	0	0.1	12,110	4.39	0.05	6	Atlas	Retained by Sneads Branch FPS	1,211	1
	3/31/2018 22:00	3/31/2018 23:15	75	0.19	112,016	1.29	0.11	3	Atlas	Retained by Sneads Branch FPS	21,283	1
	3/11/2018 22:15	3/11/2018 22:15	0	0.25	88	0.87	0.16	3	Atlas	Retained by Sneads Branch FPS	22	1
	2/17/2018 13:00	2/17/2018 15:45	165	0.2	399,805	1.80	0.13	3	Atlas	Retained by Sneads Branch FPS	79,961	1
	3/1/2018 14:00	3/1/2018 14:00	0	0.02	33,650	3.10	0.01	12	Atlas	Retained by Sneads Branch FPS	673	1
	3/10/2018 0:30	3/10/2018 3:45	195	0.62	106,695	0.64	0.39	3	Atlas	Retained by Sneads Branch FPS	66,151	1
	3/24/2018 4:00	3/24/2018 20:30	990	0.94	167,030	1.70	0.38	12	Atlas	Retained by Sneads Branch FPS	157,008	1
	3/29/2018 13:45	3/30/2018 8:15	1110	0.62	87,537	2.06	0.21	24	Atlas	Retained by Sneads Branch FPS	54,273	1
<b>CSO182 Total</b>											<b>8,261,916</b>	<b>19</b>
CSO183	1/13/2018 10:45	1/13/2018 10:45	0	0.01	12,700	0.67	0.01	1	Atlas	Retained by Sneads Branch FPS	127	1
	2/24/2018 19:00	2/24/2018 23:30	270	1.77	7,373	4.47	0.73	12	Atlas		13,050	1
	2/22/2018 4:45	2/22/2018 5:15	30	1.65	2,321	2.58	0.58	24	Atlas		3,830	1
<b>CSO183 Total</b>										<b>17,007</b>	<b>3</b>	
CSO184	2/24/2018 19:00	2/24/2018 23:30	270	1.77	612,716	4.47	0.73	12	Atlas		1,084,508	1
	2/22/2018 4:30	2/22/2018 4:45	15	1.65	88,735	2.50	0.58	24	Atlas		146,412	1
	2/23/2018 5:00	2/23/2018 5:15	15	1.28	95,716	2.89	0.59	12	Atlas		122,517	1
<b>CSO184 Total</b>										<b>1,353,437</b>	<b>3</b>	
CSO185	3/29/2018 19:15	3/29/2018 19:30	15	1.03	42,053	1.87	0.28	48	Atlas	Retained by Sneads Branch FPS	43,315	1
	2/24/2018 10:30	2/24/2018 10:30	0	1.77	3,038	3.29	0.73	12	Atlas		5,378	1
	2/23/2018 4:45	2/23/2018 6:15	90	1.28	38,525	3.13	0.59	12	Atlas		49,312	1
	2/24/2018 18:45	2/25/2018 0:30	345	1.77	731,547	4.58	0.73	12	Atlas		1,294,838	1
	2/7/2018 3:30	2/7/2018 3:30	0	0.39	462	0.54	0.21	6	Atlas	Retained by Sneads Branch FPS	180	1
	2/22/2018 3:45	2/22/2018 5:30	105	1.65	64,840	2.62	0.58	24	Atlas		106,986	1
	3/24/2018 14:30	3/24/2018 14:30	0	1.05	6,465	1.73	0.43	12	Atlas		6,788	1
<b>CSO185 Total</b>										<b>1,506,797</b>	<b>7</b>	
CSO188	2/24/2018 23:15	2/24/2018 23:15	0	1.79	11,779	4.37	0.73	12	Atlas		21,084	1
<b>CSO188 Total</b>										<b>21,084</b>	<b>1</b>	
CSO189	2/14/2018 7:45	2/14/2018 10:30	165	0.6	1,069,973	0.93	0.29	3	Atlas		641,984	1
	2/16/2018 3:15	2/16/2018 4:00	45	0.74	873,719	1.22	0.34	12	Atlas		646,552	1
	3/29/2018 19:15	3/30/2018 0:15	300	1.3	1,163,711	2.26	0.33	48	Atlas		1,512,824	1
	2/23/2018 3:00	2/23/2018 15:45	765	1.92	16,120,770	4.79	0.88	12	Atlas		30,951,878	1
	2/7/2018 3:15	2/7/2018 5:45	150	0.55	3,430,193	0.83	0.28	6	Atlas		1,886,606	1
	3/24/2018 9:30	3/24/2018 21:30	720	1.07	7,846,008	2.18	0.41	24	Atlas		8,395,229	1
	2/21/2018 22:00	2/22/2018 9:45	705	2.1	10,036,794	3.02	0.78	24	Atlas		21,077,267	1
	2/11/2018 10:30	2/11/2018 12:00	90	0.27	2,547,307	0.92	0.13	3	Atlas		687,773	1
	3/10/2018 1:45	3/10/2018 4:30	165	0.64	3,047,569	0.67	0.41	3	Atlas		1,950,444	1
	3/19/2018 20:15	3/19/2018 21:15	60	0.38	1,978,253	0.39	0.19	6	Atlas		751,736	1
	2/24/2018 10:45	2/25/2018 9:15	1350	2.65	13,288,568	6.80	1.74	12	Cloudburst		35,214,705	1
	3/28/2018 7:00	3/28/2018 7:00	0	1.3	87,288	1.57	0.33	48	Atlas		113,474	1
	<b>CSO189 Total</b>										<b>103,830,472</b>	<b>12</b>
CSO190	1/22/2018 11:45	1/22/2018 19:45	480	0.29	645	0.43	0.13	12	Atlas		187	1
	2/24/2018 10:15	2/25/2018 7:00	1245	2.26	761,742	6.78	0.93	12	Atlas		1,721,536	1
	2/11/2018 4:00	2/11/2018 10:15	375	0.42	13,740	1.27	0.23	3	Atlas		5,771	1
	2/23/2018 1:30	2/23/2018 14:00	750	2.06	442,589	5.57	0.94	12	Atlas		911,733	1
	3/28/2018 5:15	3/28/2018 10:15	300	1.2	957	1.84	0.31	48	Atlas		1,148	1
	3/29/2018 17:00	3/29/2018 22:45	345	1.2	943	2.23	0.31	48	Atlas		1,131	1
	2/14/2018 7:15	2/14/2018 7:15	0	0.63	724	0.88	0.29	3	Atlas		456	1







**Appendix C**

**Acronyms**

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## Appendix C                      Acronyms

ACD	Amended Consent Decree
AAOV	Average Annual Overflow Volume
BOD	Biological Oxygen Demand
CCP	Composite Correction Plan
CMF	Central Maintenance Facility
CMOM	Capacity Management Operations and Maintenance
CPE	Comprehensive Performance Evaluations
CSO	Combined Sewer Overflow
CSOFT	Software Name
CSS	Combined Sewer System
DAP	Discharge Abatement Plans
DRG	Derek R. Guthrie Water Quality Treatment Center
DWO	Dry Weather Overflow
EPA	Environmental Protection Agency
FEPS	Final Effluent Pump Station
FY	Fiscal Year
GLPM	Gravity Line Preventive Maintenance
HMI	Human Machine Interface
ICM	Integrated Catchment Model
ID	Identification
IFIX	Software Name
I/O	Input/ Output
IOAP	Integrated Overflow Abatement Plan
ISSDP	Interim Sanitary Sewer Discharge Plan
KDEP	Kentucky Department of Environmental Protection
KPDES	Kentucky Pollutant Discharge Elimination System
LG&E	Louisville Gas & Electric Company
LWC	Louisville Water Company
LTCP	Long Term Control Plan
MG	Million Gallons
MGD	Million Gallons per Day
MSD	Metropolitan Sewer District (Louisville and Jefferson County)
NGPS	Nightingale Pump Station
NMC	Nine Minimum Controls
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PS	Pump Station
RAS	Return Activated Sludge
RTC	Real Time Control
SCAP	System Capacity Assurance Plan
SCS	Soil Conservation Service
SOP	Standard Operating Procedure

**Appendix C                      Acronyms**

SOR1	Southern Outfall Retention Facility 1
SORP	Sewer Overflow Response Protocol
SSDP	Sanitary Sewer Discharge Plan
SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SWOR1	Southwestern Outfall Retention – Phase 1
SWOR2	Southwestern Outfall Retention – Phase 2
SWPS	Southwestern Pump Station
SWSG	Southwest Sluice Gate
TSS	Total Suspended Solids
TV	Television
US	United States
UM	Unplanned Maintenance
VFD	Variable Frequency Drive
WIN	Waterway Improvements Now
WQTC	Water Quality Treatment Center
WUS	Waters of the United States

Appendix D      SCAP Balance

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## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	Release Date	Approved Credit Required/ <u>Flow Reduction</u>	Running Total
<b>CCREEK</b>						
235533	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	6,521	6,521
362688	MAINTENANCE WORK FY09A - CEDAR	SCAPCREDIT		12/31/08	5	6,526
236380	FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		6/5/09	10,734	17,260
362689	MAINTENANCE WORK FY09B - CEDAR	SCAPCREDIT		6/30/09	201	17,461
SC1011254	MAINTENANCE WORK FY10A - CEDAR	SCAPCREDIT		12/31/09	347	17,808
SC1011255	MAINTENANCE WORK FY10B - CEDAR	SCAPCREDIT		6/30/10	194	18,002
SC1011259	MAINTENANCE WORK FY11A - CEDAR	SCAPCREDIT		12/31/10	1,720	19,722
SC1011262	MAINTENANCE WORK FY11B - CEDAR	SCAPCREDIT		6/30/11	934	20,656
SC1011264	MAINTENANCE WORK FY12A - CEDAR	SCAPCREDIT		12/31/11	269	20,925
SC1011267	MAINTENANCE WORK FY12B - CEDAR	SCAPCREDIT		6/30/12	814	21,739
SC1005519	CONTRACTED WORK FY12 - CEDAR	SCAPCREDIT		9/10/12	21,321	43,060
320989	LITTLE CEDAR CREEK I/I REHABIL	SCAPCREDIT		9/27/12	652,907	695,967
263934	ST JAMES CROSSINGS	LAT EXT	9,000	11/30/12	-19,575	676,392
196927	SONIC SPRINGS	LAT EXT	3,600	12/5/12	-7,830	668,562
SC1005524	CONTRACTED WORK FY13 - CEDAR	SCAPCREDIT		8/19/13	425	668,987
14SC1000	MAINTENANCE WORK FY13A - CEDAR	SCAPCREDIT		12/31/13	2,220	671,207
13LE1155	RAISING CANE'S CEDARLOOK DRIVE	LAT EXT	1,175	5/23/14	-2,556	668,651
239030	POPLAR LAKES PH 1	LAT EXT	18,000	1/26/15	-39,150	629,501
13LE1003	Bardstown Woods Sec 6	LAT EXT	5,200	5/26/15	-11,310	618,191
LE916330	Altawood Development	LAT EXT	1,600	9/14/15	-3,480	614,711
SC1003694	CONTRACTED WORK FY16 - CEDAR	SCAPCREDIT		9/25/15	328	615,039
SC1006188	CONTRACTED WORK FY15 - CEDAR	SCAPCREDIT		9/25/15	1	615,040
LE915727	BARDSTOWN WOODS SEC 7	LAT EXT	4,400	5/25/16	-9,570	605,470
SC1006171	CONTRACTED WORK FY14 - CEDAR	SCAPCREDIT		10/26/16	45,900	651,370



## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
LE983107	Poplar Lakes Phase 3	LAT EXT	12,000	8/14/17	-26,100	625,270
LE971176	Cedar Ridge	LAT EXT	18,800	10/24/17	-40,890	584,380
<b>FFORK</b>						
235557	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	14,540	14,540
362638	MAINTENANCE WORK FY09A - FLOYDS	SCAPCREDIT		12/31/08	1	14,541
362647	MAINTENANCE WORK FY09B - FLOYDS	SCAPCREDIT		6/30/09	4	14,545
362651	MAINTENANCE WORK FY10A - FLOYDS	SCAPCREDIT		12/31/09	524	15,069
230379	SHAKES RUN SECTION 4	LAT EXT	3,770	1/5/10	-8,200	6,869
362655	MAINTENANCE WORK FY10B - FLOYDS	SCAPCREDIT		6/30/10	82	6,951
362661	MAINTENANCE WORK FY11A - FLOYDS	SCAPCREDIT		12/31/10	14,163	21,114
362669	MAINTENANCE WORK FY11B - FLOYDS	SCAPCREDIT		6/30/11	22,707	43,821
242480	CLAIBOURNE CROSSINGS PHASE 2	LAT EXT	0	10/17/11	0	43,821
359320	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	47,821
362674	MAINTENANCE WORK FY12A - FLOYDS	SCAPCREDIT		12/31/11	317	48,138
362678	MAINTENANCE WORK FY12B - FLOYDS	SCAPCREDIT		6/30/12	338	48,476
332823	SINGLE FAMILY HOME	LAT EXT	400	7/13/12	-870	47,606
315945	BROOKFIELD SEC 3	LAT EXT	12,800	10/26/12	-27,840	19,766
361689	LAKE FOREST REHAB PH1	SCAPCREDIT		12/18/12	174,769	194,535
362683	MAINTENANCE WORK FY13A - FLOYDS	SCAPCREDIT		12/31/12	10	194,545
331397	BROOKFIELD SEC 2A	LAT EXT	14,400	5/8/13	-31,320	163,225
13SC1000	FY14 STARVIEW REHABILITATION	SCAPCREDIT		6/30/13	14,183	177,408
13LE1062	SPEEDWAY #9451	LAT EXT	540	2/18/15	-1,175	176,234
SC1003809	BERRYTOWN WQTC I/I REMEDIATION FY14	SCAPCREDIT		6/30/15	116,834	293,068
SC1003723	MIDDLETOWN SSR P2S2 I/I REMEDIATION	SCAPCREDIT		11/6/15	102	293,170
LE941673	Locust Creek Section 8B	LAT EXT	2,000	1/7/16	-4,350	288,820



<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
SC1003331	CONTRACTED WORK FY16 - FLOYDS FORI	SCAPCREDIT		7/7/16	35	288,855
LE932677	Shakes Run Sec 9	LAT EXT	12,000	9/20/16	-26,100	262,755
LE945783	Urton Woods, Section 2B	LAT EXT	17,200	1/4/17	-37,410	225,345
LE971261	Notting Hills Section 4 and Clubhouse	LAT EXT	10,400	2/27/17	-22,620	202,725
LE992628	Blankenbaker Centre II	LAT EXT	2,340	10/9/17	-5,090	197,635
<b>HCREEK</b>						
SC1006307	CONTRACTED WORK FY06 - HITE CREEK	SCAPCREDIT		5/15/06	656	656
235561	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	6,404	7,060
362641	MAINTENANCE WORK FY09A - HITE CREEI	SCAPCREDIT		12/31/08	2	7,062
SC1006214	CONTRACTED WORK FY09 - HITE CREEK	SCAPCREDIT		6/1/09	328	7,390
362648	MAINTENANCE WORK FY09B - HITE CREEI	SCAPCREDIT		6/30/09	7	7,397
362652	MAINTENANCE WORK FY10A - HITE CREEI	SCAPCREDIT		12/31/09	10	7,407
362657	MAINTENANCE WORK FY10B - HITE CREEI	SCAPCREDIT		6/30/10	332	7,739
320906	FLOYDSBURG ROAD I/I REHABILITA	SCAPCREDIT		12/17/10	28,437	36,176
362662	MAINTENANCE WORK FY11A - HITE CREEI	SCAPCREDIT		12/31/10	9	36,185
362670	MAINTENANCE WORK FY11B - HITE CREEI	SCAPCREDIT		6/30/11	9	36,194
SC1011058	Meadow Stream Pump Station & Force Main	SCAPCREDIT		9/7/11	2,304,000	2,340,194
246638	CHAPMAN COURT S/S	LAT EXT	800	9/28/11	-1,740	2,338,454
362675	MAINTENANCE WORK FY12A - HITE CREEI	SCAPCREDIT		12/31/11	340	2,338,794
362679	MAINTENANCE WORK FY12B - HITE CREEI	SCAPCREDIT		6/30/12	5,007	2,343,801
290181	CAMDEN WOOD APARTMENTS	LAT EXT	12,400	8/31/12	-26,970	2,316,831
304536	MAGNOLIA SPRINGS EAST PRIV P/S	LAT EXT	9,500	12/1/12	-20,663	2,296,169
335610	ROCK SPRINGS FARM SEC 4B	LAT EXT	6,400	12/7/12	-13,920	2,282,249
362684	MAINTENANCE WORK FY13A - HITE CREEI	SCAPCREDIT		12/31/12	7	2,282,256
SC1005530	CONTRACTED WORK FY13 - HITE CREEK	SCAPCREDIT		4/11/13	1,442	2,283,698

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
SC1006178	CONTRACTED WORK FY14 - HITE CREEK	SCAPCREDIT		1/27/15	77,660	2,361,358
SC983697	MEADOWSTREAM REHABILITATION - FY13	SCAPCREDIT		3/13/15	448,447	2,809,805
LE943178	Rock Springs Farm Section 5A	LAT EXT	6,800	9/13/16	-14,790	2,795,015
SC1006192	CONTRACTED WORK FY15 - HITE CREEK	SCAPCREDIT		10/26/16	1	2,795,016
LE971406	Old Henry Business Park	LAT EXT	930	3/17/17	-2,023	2,792,993
<b>JTOWN</b>						
235563	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	6,203	6,203
359323	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	10,203
254871	LAKESIDE BAPT CHURCH PRIV PS	LAT EXT	2,500	8/10/10	-5,438	4,766
340213	JEFFERSONTOWN ENG REHAB	SCAPCREDIT		8/11/11	997,448	1,002,214
359324	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	4,000	1,006,214
14SC1002	MAINTENANCE WORK FY13A -	SCAPCREDIT		12/31/12	3,490	1,009,704
337261	SINGLE FAMILY 2909 PELHAM CT	LAT EXT	400	5/28/13	-870	1,008,834
13LE1010	SWOPE HR & TRAINING BLDG	LAT EXT	400	6/28/13	-870	1,007,964
13LE1092	BALE EQUIPMENT	LAT EXT	450	10/25/13	-979	1,006,985
13LE1098	UNIPAK	LAT EXT	720	2/27/14	-1,566	1,005,419
LE924043	Bluegrass Indoor Carting	LAT EXT	400	5/1/14	-870	1,004,549
13LE1067	PARK COMMUNITY	LAT EXT	2,220	12/31/14	-4,829	999,720
14LE1149	Grand Lakes Section 3	LAT EXT	5,600	2/1/16	-12,180	987,540
LE924049	Blankenbaker Road S/S	LAT EXT	9,010	3/10/16	-19,597	967,944
326360	WATTERSON TRAIL CENTER	LAT EXT	2,745	5/4/16	-5,970	961,973
LE930127	Vantage Point Sec 3B	LAT EXT	7,200	6/21/16	-15,660	946,313
14LE1148	Grand Lakes Section 2	LAT EXT	4,400	11/8/16	-9,570	936,743
LE926081	Monticello Manors Sec 2	LAT EXT	7,600	3/23/17	-16,530	920,213

## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTTYPE</u>	<u>FLOW</u>	Release Date	Approved Credit Required/ Flow Reduction	Running Total
<b>MCREEK</b>						
359380	CALENDAR 2005 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/05	12,000	12,000
359381	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	24,000	36,000
235568	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	51,530	87,530
359382	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	103,530
362642	MAINTENANCE WORK FY09A - MILL CREEK	SCAPCREDIT		12/31/08	93	103,623
362649	MAINTENANCE WORK FY09B - MILL CREEK	SCAPCREDIT		6/30/09	1,507	105,130
236614	DEVEROES	LAT EXT	960	9/9/09	-2,088	103,042
362653	MAINTENANCE WORK FY10A - MILL CREEK	SCAPCREDIT		12/31/09	25,272	128,314
359383	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	32,000	160,314
253586	KINGSFORD RETAIL CENTER	LAT EXT	480	1/6/10	-1,044	159,270
238421	6840 DIXIE HWY OUTLOT	LAT EXT	2,100	4/28/10	-4,568	154,703
362658	MAINTENANCE WORK FY10B - MILL CREEK	SCAPCREDIT		6/30/10	6,216	160,919
259408	FAMILY DOLLAR 5105 DIXIE	LAT EXT	1,200	7/2/10	-2,610	158,309
264294	SAINT PETER THE APOSTLE CATHOL	LAT EXT	2,000	7/23/10	-4,350	153,959
276215	FAMILY DOLLAR - KRISTIN WAY	LAT EXT	400	10/12/10	-870	153,089
362664	MAINTENANCE WORK FY11A - MILL CREEK	SCAPCREDIT		12/31/10	22,745	175,834
359384	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	4,000	179,834
359325	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	8,000	187,834
320916	SONNE AVE PS REHABILITATION -	SCAPCREDIT		6/30/11	120,800	308,634
362671	MAINTENANCE WORK FY11B - MILL CREEK	SCAPCREDIT		6/30/11	11,745	320,379
299399	FAMILY DOLLAR - GREENWOOD RD	LAT EXT	800	10/4/11	-1,740	318,639
309018	PRP PERFORMING ARTS ADDITION	LAT EXT	1,134	11/9/11	-2,466	316,172
359385	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	328,172
362676	MAINTENANCE WORK FY12A - MILL CREEK	SCAPCREDIT		12/31/11	4,800	332,972
359326	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	12,000	344,972

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
318096	CRACKER BARREL OLD COUNTRY	LAT EXT	6,000	1/19/12	-13,050	331,922
SC1005678	CONTRACTED WORK FY12 - MILL CREEK	SCAPCREDIT		3/16/12	22	331,944
262545	DIXIE MANOR SHOPPING CENTER	LAT EXT	965	5/21/12	-2,099	329,845
300374	FORT KNOX FEDERAL CREDIT UNION	LAT EXT	400	6/26/12	-870	328,975
362680	MAINTENANCE WORK FY12B - MILL CREEK	SCAPCREDIT		6/30/12	4,133	333,108
361693	FY12 MILL CREEK REHAB	SCAPCREDIT		6/30/12	81,675	414,783
231800	PIONEER MOBILE HOME PARK	LAT EXT	11,200	7/24/12	-24,360	390,423
237457	WAVERLY HILLS	LAT EXT	400	9/18/12	-870	389,553
341883	NHK SPRING PRECISION	LAT EXT	17,800	10/19/12	-38,715	350,838
334997	BEECHLAND BAPTIST CHURCH	LAT EXT	2,715	12/5/12	-5,905	344,933
359327	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	148,000	492,933
362685	MAINTENANCE WORK FY13A - MILL CREEK	SCAPCREDIT		12/31/12	22,996	515,929
359386	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	519,929
343763	SOUTHEAST CHRISTIAN CHURCH SW	LAT EXT	6,000	1/18/13	-13,050	506,879
224875	ASHBY GREEN APARTMENT HOMES	LAT EXT	36,400	3/20/13	-79,170	427,709
265944	RIVERPORT PHASE 4A - MICHELIN	LAT EXT	400	6/6/13	-870	426,839
314887	DAYTON FREIGHT	LAT EXT	1,200	9/10/13	-2,610	424,229
13LE1014	LOUISVILLE FREE PUBLIC LIBRARY	LAT EXT	8,200	9/26/13	-17,835	406,394
357140	FAMILY DOLLAR CANE RUN ROAD	LAT EXT	832	10/3/13	-1,810	404,584
13LE1171	SINGLE FAMILY HOME 3700 ROMANIA DR	LAT EXT	400	1/29/14	-870	403,714
SC1005536	ROSA TERRACE I/I REHABILITATION FY13	SCAPCREDIT		3/10/15	156,635	560,349
SC1003690	CONTRACTED WORK FY15 - MILL CREEK	SCAPCREDIT		7/31/15	58	560,407
LE937142	ZAXBYS DIXIE HWY	LAT EXT	924	8/10/15	-2,010	558,398
LE944727	Britz Deer Hollow Lane	LAT EXT	800	7/28/16	-1,740	556,658

**MFORK**

## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
359400	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	84,000	84,000
359328	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		12/31/07	20,000	104,000
235566	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	43,779	147,779
359329	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	8,000	155,779
SC1011287	MAINTENANCE WORK FY09A - MIDDLE	SCAPCREDIT		12/31/08	13	155,792
236517	ANCHOR ESTATES MH REHAB	SCAPCREDIT		1/16/09	15,552	171,344
217235	SINKING FORK ICA PHASE I REHAB	SCAPCREDIT		3/30/09	437,967	609,311
235376	MIDDLE FORK INT REHAB PH1	SCAPCREDIT		5/15/09	487,744	1,097,055
179246	SHADY GLEN OF LYNDON PERSONAL	LAT EXT	-500	5/26/09	1,088	1,098,143
SC1011288	MAINTENANCE WORK FY09B - MIDDLE	SCAPCREDIT		6/30/09	4,208	1,102,351
250572	1316 WITAWANGA AVE	LAT EXT	400	11/4/09	-870	1,101,481
359331	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	24,000	1,125,481
359401	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	4,000	1,129,481
SC1011290	MAINTENANCE WORK FY10A - MIDDLE	SCAPCREDIT		12/31/09	50	1,129,531
197432	ALMOST HOME KENNELS - ALL PET	LAT EXT	3,700	3/16/10	-8,048	1,121,483
260064	OXMOOR GOLF FRONT 9	LAT EXT	400	4/15/10	-870	1,120,613
260065	OXMOOR GOLF BACK 9	LAT EXT	400	4/15/10	-870	1,119,743
229834	THE BROOK HOS- DUPONT ADDITION	LAT EXT	1,763	4/27/10	-3,835	1,115,908
SC1011292	MAINTENANCE WORK FY10B - MIDDLE	SCAPCREDIT		6/30/10	1,113	1,117,021
265723	Z-XPRESS CAR WASH	LAT EXT	5,449	7/2/10	-11,852	1,105,170
255793	HERR LANE APARTMENTS - 4 PLEX	LAT EXT	1,200	7/14/10	-2,610	1,102,560
255792	HERR LANE APARTMENTS - 8 PLEX	LAT EXT	2,400	7/14/10	-5,220	1,097,340
274303	FARM CREDIT SERVICES	LAT EXT	525	9/9/10	-1,142	1,096,198
278015	METROPOLITAN UROLOGY	LAT EXT	400	12/15/10	-870	1,095,328
359402	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	8,000	1,103,328
359333	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	1,115,328

## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
SC1011293	MAINTENANCE WORK FY11A - MIDDLE	SCAPCREDIT		12/31/10	1,205	1,116,533
285637	SHELBYHURST OFFICE BUILDING 1	LAT EXT	6,600	1/20/11	-14,355	1,102,178
313465	DORSEY POINTE/CODOMINIUMS 8-13	LAT EXT	2,400	1/27/11	-5,220	1,096,958
291263	BROWNS LANE BUILDING	LAT EXT	400	4/14/11	-870	1,096,088
293400	FOUR PLEX APARTMENTS	LAT EXT	1,200	6/14/11	-2,610	1,093,478
SC1011294	MAINTENANCE WORK FY11B - MIDDLE	SCAPCREDIT		6/30/11	7,183	1,100,661
330019	FY11 ANCHOR ESTATES REHAB	SCAPCREDIT		8/11/11	1,359	1,102,020
310046	EL NAPEL - MCMAHAN CENTER	LAT EXT	3,100	10/31/11	-6,743	1,095,278
314591	CHOCOLATE MARTINI BAR/REST	LAT EXT	3,275	11/29/11	-7,123	1,088,154
320983	HURSTBOURNE I/II INVESTIGATION	SCAPCREDIT		12/27/11	1,408,279	2,496,433
359335	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	2,512,433
SC1011295	MAINTENANCE WORK FY12A - MIDDLE	SCAPCREDIT		12/31/11	919	2,513,352
321228	SINGLE FAMILY UNIT	LAT EXT	400	2/15/12	-870	2,512,482
SC1005671	CONTRACTED WORK FY12 - MIDDLE FORK	SCAPCREDIT		3/16/12	7,305	2,519,787
321647	SINGLE FAMILY	LAT EXT	400	3/27/12	-870	2,518,917
328074	SINGLE FAMILY-703 FOUNTAIN AVE	LAT EXT	400	6/22/12	-870	2,518,047
SC1011297	MAINTENANCE WORK FY12B - MIDDLE	SCAPCREDIT		6/30/12	949	2,518,996
193195	CEDAR LAKE LODGE WASHBURN	LAT EXT	1,900	8/20/12	-4,133	2,514,864
320923	ST MATTHEWS I/II REHABILITATION	SCAPCREDIT		8/23/12	20,841	2,535,705
337796	CHAMPPS	LAT EXT	635	9/5/12	-1,381	2,534,324
347126	ADVANCE PRODUCTION SYSTEMS	LAT EXT	400	12/28/12	-870	2,533,454
359336	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	92,000	2,625,454
14SC1003	MAINTENANCE WORK FY13A - MIDDLE	SCAPCREDIT		12/31/12	3,309	2,628,763
339367	BAPTIST RADIATION ONCOLOGY	LAT EXT	1,500	1/4/13	-3,263	2,625,500
340778	PANDA RESTAURANT	LAT EXT	1,725	1/16/13	-3,752	2,621,748
349044	BLAIRWOOD POOL ADDITION	LAT EXT	400	1/29/13	-870	2,620,878

## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
328659	SINGLE FAMILY HOME - 6911 AMBR	LAT EXT	400	2/4/13	-870	2,620,008
352805	POOL HOUSE 9213 REIGATE COURT	LAT EXT	200	2/20/13	-435	2,619,573
14LE1001	MIRANDA LAGRANGE RD	LAT EXT	400	3/19/13	-870	2,618,703
350246	SINGLE FAMILY - 218 BLISS AVE	LAT EXT	400	3/20/13	-870	2,617,833
349974	SINGLE FAMILY 205 N WATTERSON	LAT EXT	400	3/26/13	-870	2,616,963
342433	SHELBYHURST 700 OFFICE BLDG	LAT EXT	7,500	4/15/13	-16,313	2,600,651
350340	JARED THE GALLERY OF JEWELRY	LAT EXT	770	4/16/13	-1,675	2,598,976
SC1005532	CONTRACTED WORK FY13 - MIDDLE FORK	SCAPCREDIT		5/30/13	6,480	2,605,456
13LE1009	Single family 11716 Wetherby Ave	LAT EXT	400	6/7/13	-870	2,604,586
13LE1001	Single Family 835 Fountain Ave	LAT EXT	400	8/28/13	-870	2,603,716
355162	PROPOSED RESTAURANT	LAT EXT	7,540	9/10/13	-16,400	2,587,317
13LE1045	SINGLE FAMILY 8325 WHIPPS MILL RD	LAT EXT	400	9/30/13	-870	2,586,447
319292	WATERMARK ON HURSTBOURNE	LAT EXT	71,600	10/22/13	-155,730	2,430,717
331542	DENTAL/MEDICAL OFFICE BLDG	LAT EXT	400	10/28/13	-870	2,429,847
13LE1128	SINGLE FAMILY HOME 1327 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,428,977
13LE1144	SINGLE FAMILY 1329 ETAWAH AVE	LAT EXT	400	11/5/13	-870	2,428,107
13LE1165	SINGLE FAMILY 8504 LORE LANE	LAT EXT	400	11/25/13	-870	2,427,237
13LE1146	CITY OF ST MATTHEWS COMMUNITY CTR	LAT EXT	1,500	11/26/13	-3,263	2,423,974
13LE1099	NICKLIES - ST MATTHEWS	LAT EXT	1,920	12/11/13	-4,176	2,419,798
353963	DORSEY COMMONS TRACTS 1,2,3	LAT EXT	4,335	12/18/13	-9,429	2,410,370
352026	MCPAHAN PLAZA PHASE II BLDG B	LAT EXT	766	12/31/13	-1,666	2,408,703
13LE1117	THE VININGS	LAT EXT	850	4/10/14	-1,849	2,406,855
14LE1021	KODA KENTUCKY ORGAN DONOR	LAT EXT	400	6/18/14	-870	2,405,985
14LE1128	WALDORF SCHOOL OF LOUISVILLE	LAT EXT	400	6/30/14	-870	2,405,115
SC1006201	GOOSE CREEK PLANTATION I/II	SCAPCREDIT		2/10/15	163,919	2,569,034
SC1006179	CONTRACTED WORK FY14 - MIDDLE FORK	SCAPCREDIT		2/11/15	15,043	2,584,077

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LE939199	Westport Road Apartments	LAT EXT	62,800	6/8/16	-136,590	2,447,487
LE971405	Lyndon Lane Office Condos	LAT EXT	2,652	8/30/16	-5,768	2,441,719
SC1003387	CONTRACTED WORK FY16 - MIDDLE FORK	SCAPCREDIT		10/18/16	91,264	2,532,983
SC1006194	CONTRACTED WORK FY15 - MIDDLE FORK	SCAPCREDIT		10/24/16	3	2,532,986
LE938563	The Paddock at Sawyer Park	LAT EXT	99,800	12/20/16	-217,065	2,315,921
<b>NDITCH</b>						
359404	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	28,000	28,000
235569	MAINTENANCE WORK FY06 AUG-FY09 NORTH	SCAPCREDIT		11/1/08	11,147	39,147
236363	NORTHERN DITCH INT REHAB PH1	SCAPCREDIT		11/25/08	108,760	147,907
SC1011338	MAINTENANCE WORK FY09A - NORTHERN	SCAPCREDIT		12/31/08	11	147,918
SC1011339	MAINTENANCE WORK FY09B - NORTHERN	SCAPCREDIT		6/30/09	1,884	149,802
359339	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	153,802
SC1011340	MAINTENANCE WORK FY10A - NORTHERN	SCAPCREDIT		12/31/09	1,177	154,979
234678	THE LIGHTHOUSE PROMISE COMPLEX	LAT EXT	2,825	3/5/10	-6,144	148,835
SC1011343	MAINTENANCE WORK FY10B - NORTHERN	SCAPCREDIT		6/30/10	2,532	151,367
284728	SUBWAY - NEW CUT RD	LAT EXT	1,314	12/21/10	-2,858	148,509
359340	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	152,509
SC1011344	MAINTENANCE WORK FY11A - NORTHERN	SCAPCREDIT		12/31/10	2,456	154,965
320908	PARKVIEW ESTATES REHABILITATION	SCAPCREDIT		6/28/11	36	155,001
SC1011345	MAINTENANCE WORK FY11B - NORTHERN	SCAPCREDIT		6/30/11	1,989	156,990
312810	WILLOW PLACE APT COMMUNITY CENTER	LAT EXT	400	11/11/11	-870	156,120
359341	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	24,000	180,120
359405	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	12,000	192,120
SC1011346	MAINTENANCE WORK FY12A - NORTHERN	SCAPCREDIT		12/31/11	911	193,031
315723	JCPS EARLY CHILDHOOD DEVELOPMENT	LAT EXT	6,000	1/26/12	-13,050	179,981



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312057	DOLLAR GENERAL - MEDALLION CT	LAT EXT	400	3/21/12	-870	179,111
SC1011336	MAINTENANCE WORK FY12B - NORTHERN	SCAPCREDIT		6/30/12	7,893	187,004
312659	KROGER L-350 FUEL STATION	LAT EXT	400	8/20/12	-870	186,134
359343	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	210,134
14SC1004	MAINTENANCE WORK FY13A - NORTHERN	SCAPCREDIT		12/31/12	4,239	214,373
13LE1147	CARLON ROOFING	LAT EXT	992	12/5/13	-2,158	212,215
13LE1126	JENNINGS CROSSING TRACT 3	LAT EXT	2,100	12/12/13	-4,568	207,648
SC1006180	CONTRACTED WORK FY14 - NORTHERN	SCAPCREDIT		10/21/14	5	207,653
LE947316	Heimbrock I	LAT EXT	400	8/14/15	-870	206,783
LE947318	Heimbrock II	LAT EXT	400	8/14/15	-870	205,913
<b>ORFM</b>						
359433	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	56,000	56,000
359344	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		12/31/07	4,000	60,000
235572	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	19,826	79,826
362643	MAINTENANCE WORK FY09A - ORFM	SCAPCREDIT		12/31/08	2	79,828
362650	MAINTENANCE WORK FY09B - ORFM	SCAPCREDIT		6/30/09	3,835	83,663
362654	MAINTENANCE WORK FY10A - ORFM	SCAPCREDIT		12/31/09	7,330	90,993
263548	SINGLE FAMILY CONNECTION	LAT EXT	400	5/18/10	-870	90,123
213488	NORTHEAST CHRISTIAN CHURCH	LAT EXT	10,000	6/28/10	-21,750	68,373
362660	MAINTENANCE WORK FY10B - ORFM	SCAPCREDIT		6/30/10	6,773	75,146
362665	MAINTENANCE WORK FY11A - ORFM	SCAPCREDIT		12/31/10	181	75,327
362672	MAINTENANCE WORK FY11B - ORFM	SCAPCREDIT		6/30/11	4,139	79,466
280837	SPRINGHURST TOWNE CTR LOT C	LAT EXT	400	9/20/11	-870	78,596
320920	SHADOW WOOD I/I REHABILITATION	SCAPCREDIT		9/30/11	14,279	92,875
311412	SPRINGHURST CHEVROLET	LAT EXT	855	10/14/11	-1,860	91,015

## Capacity Credit Balance Sheet per Credit Basin

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359345	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	16,000	107,015
359434	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	16,000	123,015
362677	MAINTENANCE WORK FY12A - ORFM	SCAPCREDIT		12/31/11	7,268	130,283
320921	DERINGTON COURT I/I REHABILITA	SCAPCREDIT		3/1/12	56,208	186,491
187028	GLENVIEW PARK SUBD SECTION 1	LAT EXT	4,400	3/5/12	-9,570	176,921
213450	GLENVIEW PARK SUB, SEC 2	LAT EXT	5,600	3/5/12	-12,180	164,741
322455	FIRST LADY NAILS	LAT EXT	400	3/12/12	-870	163,871
362681	MAINTENANCE WORK FY12B - ORFM	SCAPCREDIT		6/30/12	19,941	183,812
SC1011315	MAINTENANCE WORK FY12B - ORFM	SCAPCREDIT		6/30/12	19,941	203,753
292239	SPRINGHURST RESTAURANT/ RETAIL	LAT EXT	3,440	7/5/12	-7,482	196,271
323821	TIRE DISCOUNTERS WESTPORT RD	LAT EXT	400	12/11/12	-870	195,401
363238	FY13 PROSPECT MANHOLE REHAB	SCAPCREDIT		12/18/12	72,703	268,104
341319	RAISING CANES RETAIL CENTER	LAT EXT	1,225	12/18/12	-2,664	265,440
359346	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	24,000	289,440
363235	FY13 MUDDY FORK MH REHAB	SCAPCREDIT		12/31/12	41,653	331,093
362686	MAINTENANCE WORK FY13A - ORFM	SCAPCREDIT		12/31/12	1,161	332,254
360262	SINGLE FAMILY 3419 HILLVALE RD	LAT EXT	400	5/13/13	-870	331,384
343729	RETAIL & RESTAURANT	LAT EXT	3,500	6/21/13	-7,613	323,772
334154	GLENVIEW PARK SUBD SEC 4	LAT EXT	3,600	11/7/13	-7,830	315,942
13LE1024	Overlook at Beech Spring Farm Sec 4	LAT EXT	5,600	12/31/13	-12,180	303,762
199896	SPRINGDALE OFFICE BUILDING	LAT EXT	4,210	3/11/14	-9,157	294,605
225863	SPRING FARM LAKES SEC 1	LAT EXT	4,800	5/16/14	-10,440	284,165
177756	SUMMIT GARDENS PHASE 1	LAT EXT	32,000	9/22/14	-69,600	214,565
14LE1121	Riverside Sewer Extension	LAT EXT	1,200	11/10/14	-2,610	211,955
SC1006181	CONTRACTED WORK FY14 - ORFM	SCAPCREDIT		12/31/14	1,654	213,609
13LE1071	SPRING FARM LAKE SEC 2	LAT EXT	6,000	1/16/15	-13,050	200,559

## Capacity Credit Balance Sheet per Credit Basin

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352634	BAUER PROPERTY	LAT EXT	2,920	2/12/15	-6,351	194,208
SC983704	PROSPECT I&I REHABILITATION - FY13	SCAPCREDIT		7/12/15	1,034,758	1,228,966
SC1003730	RIVER ROAD I/I REMEDIATION	SCAPCREDIT		8/5/15	120,418	1,349,384
LE929244	Summit Gardens Phase 2	LAT EXT	18,000	10/21/15	-39,150	1,310,234
SC1006195	CONTRACTED WORK FY15 - ORFM	SCAPCREDIT		11/19/15	1	1,310,235
LE938166	Spring Farm Lake Section 3	LAT EXT	3,200	12/14/15	-6,960	1,303,275
SC1003696	CONTRACTED WORK FY16 - ORFM	SCAPCREDIT		8/10/16	17,566	1,320,841
SC1003728	PROSPECT I&I REHABILITATION - FY16	SCAPCREDIT		10/6/16	199,036	1,519,877
LE923204	Indian Springs Hotel	LAT EXT	13,000	11/16/16	-28,275	1,491,602
<b>PCREEK</b>						
235574	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	71,782	71,782
359347	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	75,782
359438	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	4,000	79,782
SC1011298	MAINTENANCE WORK FY09A - POND	SCAPCREDIT		12/31/08	1,913	81,695
SC1011299	MAINTENANCE WORK FY09B - POND	SCAPCREDIT		6/30/09	6,403	88,098
359439	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	12,000	100,098
359348	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	4,000	104,098
SC1011305	MAINTENANCE WORK FY10A - POND	SCAPCREDIT		12/31/09	22,337	126,435
192513	BANNON CROSSINGS SECTION 3A-1	LAT EXT	800	2/17/10	-1,740	124,695
261115	EMERGENCY RESTORATION	LAT EXT	400	4/27/10	-870	123,825
SC1011307	MAINTENANCE WORK FY10B - POND	SCAPCREDIT		6/30/10	11,060	134,885
276977	DADISMAN BUILDERS-POPLAR TREE	LAT EXT	400	10/13/10	-870	134,015
266833	THORNTONS @ PRESTON HWY	LAT EXT	400	12/1/10	-870	133,145
280751	NOTTINGTON HILLS SEC 1	LAT EXT	4,400	12/29/10	-9,570	123,575
359350	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	12,000	135,575

## Capacity Credit Balance Sheet per Credit Basin

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SC1011308	MAINTENANCE WORK FY11A - POND	SCAPCREDIT		12/31/10	19,773	155,348
187739	GLENGARRY INDUSTRIAL PARK	LAT EXT	4,300	1/13/11	-9,353	145,996
277777	TIRE DISCOUNTERS - BOERSTE WAY	LAT EXT	2,960	3/21/11	-6,438	139,558
SC1011309	MAINTENANCE WORK FY11B - POND	SCAPCREDIT		6/30/11	10,562	150,120
304408	UPS SUPPLY CHAIN SOLUTIONS #7	LAT EXT	2,250	9/14/11	-4,894	145,226
320918	EDSEL I/I REHABILITATION - FY1	SCAPCREDIT		9/27/11	106,700	251,926
313444	PLANET FITNESS - JEFF BLVD	LAT EXT	1,600	11/4/11	-3,480	248,446
312391	LONGHORN STEAKHOUSE RESTAURANT	LAT EXT	4,840	11/29/11	-10,527	237,919
320919	LANTANA I/I REHABILITATION - F	SCAPCREDIT		12/29/11	5,000	242,919
359351	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	20,000	262,919
SC1011310	MAINTENANCE WORK FY12A - POND	SCAPCREDIT		12/31/11	5,380	268,299
310845	ZAXBY'S RESTAURANT	LAT EXT	3,750	2/28/12	-8,156	260,143
255044	ISA-RECYCLING CENTER	LAT EXT	400	3/13/12	-870	259,273
312814	MILLER TRANSPORTATION	LAT EXT	1,800	3/19/12	-3,915	255,358
324554	NORTONS TEMPORARY OFFICE	LAT EXT	900	4/16/12	-1,958	253,400
234102	ETHOS AT VALLEY FARM SR LIVING	LAT EXT	7,050	6/19/12	-15,334	238,066
322367	SHEPHERDS CARE MEMORY HOME	LAT EXT	2,000	6/21/12	-4,350	233,716
SC1011313	MAINTENANCE WORK FY12B - POND	SCAPCREDIT		6/30/12	3,877	237,593
307332	LOUISVILLE INDUSTRIAL BLDG B	LAT EXT	2,520	8/6/12	-5,481	232,112
SC1005684	CONTRACTED WORK FY12 - POND CREEK	SCAPCREDIT		8/10/12	3,812	235,924
279860	BANNON CROSSINGS SEC 3B-2	LAT EXT	9,600	8/10/12	-20,880	215,044
312053	DOLLAR GENERAL - CLEARWATER FA	LAT EXT	400	8/13/12	-870	214,174
343455	SINGLE FAMILY 1812 GREYLING DR	LAT EXT	400	10/12/12	-870	213,304
243109	OVERBROOK APARTMENTS	LAT EXT	41,200	11/9/12	-89,610	123,694
359354	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	56,000	179,694
14SC1005	MAINTENANCE WORK FY13A - POND	SCAPCREDIT		12/31/12	25,984	205,678

## Capacity Credit Balance Sheet per Credit Basin

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329624	COPART	LAT EXT	400	2/20/13	-870	204,808
346082	ZAXBYS	LAT EXT	2,065	5/2/13	-4,491	200,317
320924	LEA ANN WAY INTERCEPTOR I&I RE	SCAPCREDIT		6/30/13	1,017,423	1,217,740
335385	HARRISON LOW PRESSURE S/S	LAT EXT	1,600	7/2/13	-3,480	1,214,260
SC1005534	PICADILLY I/I REHABILITATION FY13	SCAPCREDIT		7/12/13	187,564	1,401,824
320940	4 RESIDENCE SFU 7821 MANSLICK	LAT EXT	400	8/16/13	-870	1,400,954
SC1005538	CONTRACTED WORK FY13 - POND CREEK	SCAPCREDIT		8/27/13	18,958	1,419,912
361336	RENAISSANCE SOUTH BUSINESS	LAT EXT	540	9/6/13	-1,175	1,418,737
324886	PNC BANK	LAT EXT	400	9/6/13	-870	1,417,867
13LE1083	SINGLE FAMILY HOME 5402 (H) E	LAT EXT	400	9/26/13	-870	1,416,997
SC1005319	FEGENBUSH I/I REHABILITATION FY13	SCAPCREDIT		11/12/13	226,201	1,643,198
353125	PEGASUS TRANSPORTATION	LAT EXT	250	12/9/13	-544	1,642,655
341439	PRESTON GARDENS APTS	LAT EXT	22,200	12/10/13	-48,285	1,594,370
308206	APPLEGATE FARMS	LAT EXT	57,200	12/10/13	-124,410	1,469,960
13LE1179	TIMBERBEND SUBDIVISION SEC 5B	LAT EXT	6,400	2/14/14	-13,920	1,456,040
13LE1035	RENAISSANCE SOUTH BUSINESS PARK	LAT EXT	5,415	4/10/14	-11,778	1,444,262
13LE1115	VERIZON-OUTER LOOP	LAT EXT	400	4/22/14	-870	1,443,392
348014	ASHTON PARK TOWN HOMES	LAT EXT	9,000	4/24/14	-19,575	1,423,817
280180	LOUISVILLE INDUSTRIAL CTR F	LAT EXT	2,480	5/16/14	-5,394	1,418,423
14LE1085	Williams Properties - Self Storage Facility	LAT EXT	400	5/28/14	-870	1,417,553
13LE1034	6300 GEIL LANE WAREHOUSE	LAT EXT	720	6/9/14	-1,566	1,415,987
284215	HURSTBOURNE POINTE APTS	LAT EXT	9,600	7/7/14	-20,880	1,395,107
344230	AUSTIN PARK APARTMENTS PH6	LAT EXT	27,600	8/25/14	-60,030	1,335,077
13LE1105	JEFFERSON COMMONS	LAT EXT	17,075	11/13/14	-37,138	1,297,939
SC1005323	FERN CREEK I/I REHABILITATION FY13	SCAPCREDIT		11/18/14	551,108	1,849,047
13LE1017	APEX ON PRESTON APT HOMES(Formally	LAT EXT	84,400	1/13/15	-183,570	1,665,477



## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
SC1005541	STONY BROOK I/I REHABILITATION FY13	SCAPCREDIT		3/10/15	345,397	2,010,874
SC995942	CAVEN AVE I/I REMEDIATION - FY13	SCAPCREDIT		3/11/15	225,645	2,236,519
354207	COOPER FARMS SEC 11B	LAT EXT	12,400	4/29/15	-26,970	2,209,549
354209	COOPER FARMS SEC 11A	LAT EXT	13,200	4/29/15	-28,710	2,180,839
LE948692	Jim's Express Wash	LAT EXT	10,500	7/28/15	-22,838	2,158,001
LE951121	Allgeier Site	LAT EXT	400	8/7/15	-870	2,157,131
13LE1086	WOODS OF PENN RUN OFFSITE SS	LAT EXT	1,000	8/25/15	-2,175	2,154,956
13LE1140	JEFFERSON POST APARTMENTS	LAT EXT	28,800	10/2/15	-62,640	2,092,316
14LE1116	CATALPA SPRINGS	LAT EXT	2,800	12/30/15	-6,090	2,086,226
SC939830	Lea Ann Way West Quad 1 & 2 Rehabilitation	SCAPCREDIT		12/31/15	445,911	2,532,137
358356	WOODS OF PENN RUN Section 1	LAT EXT	18,800	2/12/16	-40,890	2,491,247
SC1003699	CONTRACTED WORK FY16 - POND CREEK	SCAPCREDIT		5/17/16	36,063	2,527,310
LE936598	Jefferson Commerce Center Tract 1A	LAT EXT	5,250	6/6/16	-11,419	2,515,892
LE918484	AUSTIN PARK SS PHASE 8	LAT EXT	16,800	6/21/16	-36,540	2,479,352
14LE1170	Austin Park Phase 7 & 8	LAT EXT	26,400	6/21/16	-57,420	2,421,932
SC1003087	HILLRIDGE I/I REMEDIATION	SCAPCREDIT		8/5/16	308,184	2,730,116
SC1003292	LEA ANN WAY WEST (LAWW) QUAD 3 I/I	SCAPCREDIT		8/31/16	311,526	3,041,642
SC1006197	CONTRACTED WORK FY15 - POND CREEK	SCAPCREDIT		10/24/16	310	3,041,952
SC1006182	CONTRACTED WORK FY14 - POND CREEK	SCAPCREDIT		10/26/16	8,390	3,050,342
SC1005639	SILVER HEIGHTS SEWER REHAB	SCAPCREDIT		10/31/16	284,936	3,335,278
SC1005631	LEA ANN WAY WEST (LAWW) QUAD 4 I/I	SCAPCREDIT		10/31/16	692,905	4,028,183
LE954229	Jefferson Commerce Center Bldg.2	LAT EXT	3,150	2/2/17	-6,851	4,021,331
LE1053266	Yokomori Manufacturing Facility	LAT EXT	1,750	4/9/18	-3,806	4,017,525

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359355	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		12/31/07	8,000	8,000
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## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
359440	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/07	128,000	136,000
235575	MAINTENANCE WORK FY06 AUG-FY09 NO'	SCAPCREDIT		11/1/08	71,472	207,472
236214	GOLDSMITH BUECHB ICA PHI REHAB	SCAPCREDIT		12/22/08	314,808	522,280
236296	BEARGRASS INT REHAB PH1 SEDIV	SCAPCREDIT		12/22/08	122,688	644,968
359441	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/08	16,000	660,968
359356	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		12/31/08	4,000	664,968
SC1011317	MAINTENANCE WORK FY09A - SE	SCAPCREDIT		12/31/08	1,555	666,523
SC1011318	MAINTENANCE WORK FY09B - SE	SCAPCREDIT		6/30/09	2,929	669,452
229854	TINY HANDS DAYCARE	LAT EXT	1,225	10/20/09	-2,664	666,788
359357	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12/31/09	12,000	678,788
359443	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/09	8,000	686,788
SC1011322	MAINTENANCE WORK FY10A - SE	SCAPCREDIT		12/31/09	16,974	703,762
235291	SULLIVAN COLLEGE OF TECHNOLOGY	LAT EXT	900	2/11/10	-1,958	701,804
238328	LOUISVILLE COLLEGIATE SPORTS	LAT EXT	400	3/1/10	-870	700,934
241759	FRISCHS BIG BOY RESTAURANT	LAT EXT	2,400	3/5/10	-5,220	695,714
257275	LOUISVILLE JUNIOR ACADEMY	LAT EXT	520	4/16/10	-1,131	694,583
SC1011326	MAINTENANCE WORK FY10B - SE	SCAPCREDIT		6/30/10	10,739	705,322
320993	BEARGRASS CREEK PHASE II - FY1	SCAPCREDIT		12/14/10	10,368	715,690
359358	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12/31/10	4,000	719,690
359444	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/10	24,000	743,690
SC1011328	MAINTENANCE WORK FY11A - SE	SCAPCREDIT		12/31/10	11,090	754,780
286513	GARDINER POINT RESIDENCE HALL	LAT EXT	10,800	2/16/11	-23,490	731,290
276378	TIRE DISCOUNTERS - BARDSTOWN	LAT EXT	1,500	5/6/11	-3,263	728,028
287888	BEVERAGE WAREHOUSE	LAT EXT	1,180	5/30/11	-2,567	725,461
SC1011330	MAINTENANCE WORK FY11B - SE	SCAPCREDIT		6/30/11	3,661	729,122
296295	KEN TOWERY -3800 S HURSTBOURNE	LAT EXT	400	7/1/11	-870	728,252

## Capacity Credit Balance Sheet per Credit Basin

<u>APNO</u>	<u>APNAME</u>	<u>APTYPE</u>	<u>FLOW</u>	<u>Release Date</u>	<u>Approved Credit Required/ Flow Reduction</u>	<u>Running Total</u>
359445	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/11	8,000	736,252
359359	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12/31/11	64,000	800,252
SC1011331	MAINTENANCE WORK FY12A - SE	SCAPCREDIT		12/31/11	5,071	805,323
SC1011316	MAINTENANCE WORK FY12B - SE	SCAPCREDIT		6/30/12	24,202	829,525
SC1011333	MAINTENANCE WORK FY12B - SE	SCAPCREDIT		6/30/12	6,141	835,666
307018	HOOK PROPERTY FAMILY DOLLAR	LAT EXT	400	8/10/12	-870	834,796
359361	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		12/31/12	68,000	902,796
359446	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		12/31/12	4,000	906,796
14SC1006	MAINTENANCE WORK FY13A - SE	SCAPCREDIT		12/31/12	24,202	930,998
187741	BROOKSTONE SENIOR APARTMENTS	LAT EXT	16,800	3/11/13	-36,540	894,458
232601	RAINTREE/MARIAN CT P/S ELIM	LAT EXT	105,800	6/14/13	-230,115	664,343
SC1005539	CONTRACTED WORK FY13 - SOUTHEAST	SCAPCREDIT		9/18/13	25,344	689,687
330437	COLLEGIATE ATHLETIC FIELD	LAT EXT	800	11/26/13	-1,740	687,947
SC1006185	CONTRACTED WORK FY14 - SOUTHEAST	SCAPCREDIT		2/11/15	187,478	875,425
SC1006199	CONTRACTED WORK FY15 - SOUTHEAST	SCAPCREDIT		10/20/15	1	875,426
LE919560	Todd's Place Express Car Wash	LAT EXT	4,830	12/22/15	-10,505	864,921
SC1003718	SOUTHEAST DIVERSION AREA G (SEDG) I	SCAPCREDIT		2/16/16	75,998	940,919
SC1003704	CONTRACTED WORK FY16 - SOUTHEAST	SCAPCREDIT		5/24/16	66	940,985
LE943171	Costco Wholesale and Fuel Facility	LAT EXT	8,000	7/28/16	-17,400	923,585
LE1039341	Silver Creek Place Apartments	LAT EXT	7,200	4/9/18	-15,660	907,925



**Appendix E      IOAP Project Crosswalk**

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO022	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO023	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO050	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO051	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO052	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO053	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO054	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO055	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO056	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO150	L_OR_MF_155_M_09B_B_B_4
13TH ST/ROWAN ST STORAGE BASIN	IOAP	CSO155	L_OR_MF_155_M_09B_B_B_4
17TH ST FPS DWO ELIMINATION	IOAP	MSD0306-FP	L_OR_MF_190_S_03_A_A
18TH/NORTHWESTERN STOR BASIN	IOAP	CSO190	L_OR_MF_190_S_09B_B_A_8
27TH STREET FPS DWO ELIM	IOAP	MSD0307-FP	L_OR_MF_019_S_03_A_A
34TH ST FPS DWO ELIMINATION	IOAP	MSD0308-FP	L_OR_MF_019_S_03_A_B
4TH STREET FPS DWO ELIMINATION	IOAP	MSD0303-FP	L_OR_MF_022_M_03_A_A
ADAMS STREET STORAGE BASIN	IOAP	CSO172	L_OR_MF_172_S_09B_B_A_0
ALGONQUIN PKY STORAGE BASIN	IOAP	CSO016	L_OR_MF_211_M_13_B_A_8
ALGONQUIN PKY STORAGE BASIN	IOAP	CSO210	L_OR_MF_211_M_13_B_A_8
ALGONQUIN PKY STORAGE BASIN	IOAP	CSO211	L_OR_MF_211_M_13_B_A_8
ANCHOR ESTATES PS ELIM 1	IOAP	01106	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIM 2	IOAP	00056-W	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIM 2	IOAP	0057-W	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIM 2	IOAP	00746	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIM 2	IOAP	00817	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIM 2	IOAP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A-2
ASHBURTON PS IMPR & DIVERSION	IOAP	MSD0165-PS	S_FF_FF_NB03_M_01_C_A
ASHBURTON PS IMPR & DIVERSION	IOAP	MSD0166-PS	S_FF_FF_NB03_M_01_C_A
AVANTI PUMP STATION ELIMINATION	IOAP	21229	S_PO_WC_PC07_M_01_A



BARDSTOWN RD PS IMPROVEMENTS	IOAP	88545	S_CC_CC_MSD1025_S_03_B
BEARGRASS INTER REHAB PH 2	IOAP	51594	S_SD_MF_NB06_S_13_C
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21061	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21089	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21089A	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21101	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21153	BEECHWOOD VILLAGE SEWER REPL
BEECHWOOD VILLAGE SEWER REPL	ISSDP	21156	BEECHWOOD VILLAGE SEWER REPL
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	08717	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	104223	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	104224	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	104231	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	13931	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	13943	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	13946	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	34093542	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	36763	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	44396	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	44397	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	51301	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	66349	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	99259	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	KK14815019	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT	IOAP	KK14855239	S_SF_MF_30917_M_09_A
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO028	L_OR_MF_155_M_09B_B_B_4-1

CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO029	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO034	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO036	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO178	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO181	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO193	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO195	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO196	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO197	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO199	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO200	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	IOAP	CSO202	L_OR_MF_155_M_09B_B_B_4-1
CHARLESWOOD INTERCEPTOR EXT	IOAP	25477	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXT	IOAP	25479	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXT	IOAP	25480	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXT	IOAP	MSD0130-PS	S_PO_WC_PC03_M_01_C
CHENOWETH HILLS WQTC ELIM	IOAP	64096	S_JT_JT_NB01A_M_03_C
CHENOWETH HILLS WQTC ELIM	IOAP	86052	S_JT_JT_NB01A_M_03_C
CHENOWETH HILLS WQTC ELIM	IOAP	92061	S_JT_JT_NB01A_M_03_C
CHENOWETH HILLS WQTC ELIM	IOAP	MSD0196-PS	S_JT_JT_NB01A_M_03_C



CHENOWETH HILLS WQTC ELIM	IOAP	MSD0263	S_JT_JT_NB01A_M_03_C
CHENOWETH HILLS WQTC ELIM	IOAP	MSD0263A-PS	S_JT_JT_NB01A_M_03_C
CHENOWETH HILLS WQTC ELIM	IOAP	MSD1043-PS	S_JT_JT_NB01A_M_03_C
CINDERELLA PS ELIMINATION	IOAP	102339	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	35309	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	60679	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	IOAP	MSD1013-PS	S_PO_WC_PC04_M_01_C
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO083	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO088	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO131	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO132	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO154	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	IOAP	CSO167	L_MU_MF_154_M_09B_B_A_8
CSO 140 SEWER SEPARATION	IOAP	CSO140	L_MI_MF_140_S_08_A_A_0
CSO 160 SEWER SEPARATION	IOAP	CSO160	L_OR_MF_160_S_08_A_A_0
CSO 93 SEWER SEPARATION	IOAP	CSO093	L_SO_MF_093_S_08_A_A_0
CSO058 SEWER SEPARATION	IOAP	CSO058	L_OR_MF_058_S_08_A_A_0
CSO108 DAM MODIFICATION	IOAP	CSO108	L_SO_MF_108_S_09A_B_A_4
CSO206 SEWER SEPARATION	IOAP	CSO206	L_MI_MF_206_S_08_A_A_0
DELL RD/CHARLANE PKWY INT IMP	IOAP	104289	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28249	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28250	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28336	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28340	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28413	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28414	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28415	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28416	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28417	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28451	S_JT_JT_NB02_M_01_C

DELL RD/CHARLANE PKWY INT IMP	IOAP	28453	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INT IMP	IOAP	28711	S_JT_JT_NB02_M_01_C
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22307	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22370	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	22385	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	32682	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	32688	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	59169	DEREK R GUTHRIE WQTC UPGRADES
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	MSD0277	DEREK R GUTHRIE WQTC UPGRADES
DERINGTON CT PS I&I INVEST/REB	IOAP	20154-W	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVEST/REB	IOAP	20155	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVEST/REB	IOAP	MSD0095-PS	S_OR_MF_NB03_S_07_C
EAST ROCKFORD PS RELOCATION	IOAP	04699-W	S_MC_WC_NB02_S_03_C
EDEN CARE PS SSO INVESTIGATION	IOAP	MSD1105-PS	S_FF_FF_NB02_S_13_C
EDSEL PS I&I INVEST & REHAB	IOAP	92098	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVEST & REHAB	IOAP	92099	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVEST & REHAB	IOAP	94009	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVEST & REHAB	IOAP	MSD1048-PS	S_PO_WC_PC11_M_07_C
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	116106	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	81316	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97362	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97363	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	IOAP	97365	S_FF_CC_81316_M_03_C_A
FAIRWAY VIEW PS IMPROVEMENTS	IOAP	MSD1065-PS	S_HC_HS_NB01_S_03_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108953	S_HC_HC_MSD1086_M_07_C_A



FLOYDSBURG RD I&I INVEST	IOAP	108956	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108957	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	108958	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	90776	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	IOAP	MSD1086-PS	S_HC_HC_MSD1086_M_07_C_A
FOX HARBOR INLINE STORAGE	IOAP	62769	S_HC_HN_NB03_S_09A_A_A
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	105936	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	117721	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	43472	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	46891	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	62418	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	62420	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	91629	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	91630	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	MSD0040-PS	S_MI_MF_NB04_M_03_B
GOOSE CREEK PS IMPR/WW STOR 1	IOAP	MSD1024-PS	S_MI_MF_NB04_M_03_B
GOVERNMENT CENTER PS ELIM	IOAP	94541	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIM	IOAP	94542	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIM	IOAP	MSD0180-PS	S_PO_WC_PC06_M_01_C
GUNPOWDER PS INLINE STORAGE	IOAP	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
HAZELWOOD PS I&I INVEST/REHAB	IOAP	55665	S_MC_MF_55665_S_07_C
HAZELWOOD PS I&I INVEST/REHAB	IOAP	55667	S_MC_MF_55665_S_07_C
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	17571	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18134	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18297	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18298	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18299	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18302	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18318-W	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18370	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18434	HIKES LN INTER & HIGHGATE SPR



HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18471	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18483	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18505	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	18595	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	47960A	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48885	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48886	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	48888	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49224	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49236	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49672	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	49673	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	73111	HIKES LN INTER & HIGHGATE SPR
HIKES LANE-HIGHGATE SPRINGS PS	ISSDP	MSD0012-PS	HIKES LN INTER & HIGHGATE SPR
HURSTBOURNE I/I INVEST & REHAB	IOAP	01793	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVEST & REHAB	IOAP	47650	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVEST & REHAB	IOAP	47656	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVEST & REHAB	IOAP	67535	S_MI_MF_NB07_S_07_C
I-64/GRINSTEAD DR STORAGE BAS	IOAP	CSO125	L_MI_MF_127_M_09B_B_A_8
I-64/GRINSTEAD DR STORAGE BAS	IOAP	CSO126	L_MI_MF_127_M_09B_B_A_8
I-64/GRINSTEAD DR STORAGE BAS	IOAP	CSO127	L_MI_MF_127_M_09B_B_A_8
I-64/GRINSTEAD DR STORAGE BAS	IOAP	CSO166	L_MI_MF_127_M_09B_B_A_8
IDLEWOOD INLINE STORAGE	IOAP	28984	S_CC_CC_70158_M_09A_C
IDLEWOOD INLINE STORAGE	IOAP	28985	S_CC_CC_70158_M_09A_C
IDLEWOOD INLINE STORAGE	IOAP	28998	S_CC_CC_70158_M_09A_C
IDLEWOOD INLINE STORAGE	IOAP	63094	S_CC_CC_70158_M_09A_C
IDLEWOOD INLINE STORAGE	IOAP	63095	S_CC_CC_70158_M_09A_C
IDLEWOOD INLINE STORAGE	IOAP	70158	S_CC_CC_70158_M_09A_C
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28173	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28390	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28391	S_JT_JT_NB01_M_01_C_A



JEFFERSONTOWN WQTC ELIMINATION	IOAP	28392	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28395	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	28551	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	31733	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	64505	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	IS028-SI	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	IOAP	MSD0255	S_JT_JT_NB01_M_01_C_A
KAVANAUGH RD PS IMPROVEMENTS	IOAP	MSD1085-PS	S_HC_HC_MSD1085_S_03_A
KLONDIKE INTERCEPTOR	IOAP	20644	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	25676	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	26650	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	26651	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	49513	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	IOAP	66232	S_SD_MF_NB04_S_01_B_A
LAKE FOREST PS SSO INVEST	IOAP	MSD1169-LS	S_FF_LF_NB01_S_13_C_A
LANTANA #1 PS I/I INVEST/REHAB	IOAP	25484	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVEST/REHAB	IOAP	93719	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVEST/REHAB	IOAP	MSD0101-PS	S_PO_WC_PC05_M_07_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	19360	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	19369	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29933	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29943	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29948	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	29949	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31073	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31074	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31083	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	31084	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	57874	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	61266	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	79076	S_PO_WC_PC08_M_01_C



LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	MSD1010-PS	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	IOAP	MSD1200-PS	S_PO_WC_PC08_M_01_C
LELAND RD SSO INVESTIGATION	IOAP	96020	S_OR_MF_NB02_S_13_C
LEVEN PS ELIMINATION	IOAP	36419	S_PO_WC_PC10_M_01_C
LEVEN PS ELIMINATION	IOAP	MSD1019-PS	S_PO_WC_PC10_M_01_C
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO082	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO084	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO118	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO119	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO120	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO121	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO141	L_SO_MF_083_M_09B_B_A_8
LEXINGTON RD/PAYNE ST STOR BAS	IOAP	CSO153	L_SO_MF_083_M_09B_B_A_8
LITTLE CEDAR CREEK INTERC IMPR	IOAP	67997	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERC IMPR	IOAP	67999	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERC IMPR	IOAP	86423	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERC IMPR	IOAP	86424	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERC IMPR	IOAP	89196	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERC IMPR	IOAP	89197	S_CC_CC_67997_M_01_C
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO091	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO097	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO106	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO110	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO111	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO113	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO137	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO146	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO148	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO149	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO151	L_SO_MF_092_M_09B_B_D_8
LOGAN/BRECKINRIDGE ST STOR BAS	IOAP	CSO152	L_SO_MF_092_M_09B_B_D_8

LUCAS LN PS INLINE STORAGE	IOAP	MSD0199-LS	S_FF_BT_NB01_S_09A_C_A
MEADOW STREAM PS INLINE STOR	IOAP	91087	S_HC_HC_MSD1082_S_09A_C
MEADOW STREAM PS INLINE STOR	IOAP	MSD1082-PS	S_HC_HC_MSD1082_S_09A_C
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	24152-W	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	24472	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	26752	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	41374	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	41416	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	MSD0006-PS	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	MSD0007-PS	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	MSD0010-PS	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	MSD0023-PS	S_OR_MF_NB01_M_01_B
MELLWOOD SYSTEM IMPR/PS ELIM 1	IOAP	MSD0024-PS	S_OR_MF_NB01_M_01_B
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	02932	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	02933	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	02935	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	08537	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	08935-SM	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	115183	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	115184	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	115185	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	15194	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	15195	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	23211	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	23212	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	24553	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	27005	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	27007	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	30376	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	40471	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	40559	S_MISF_MF_NB01_M_01_C_A1

MF RELIEF INT/WW STOR/UMFPS 1	IOAP	45796	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	45829	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	45835	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	45900	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47034	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47582	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47583	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47593	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47596	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47603	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	47604	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	51160	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	51161	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	51180	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	51221	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	72288	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	72289	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	74513	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	84155	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	90700	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	96672	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	96673	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 1	IOAP	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1
MF RELIEF INT/WW STOR/UMFPS 2	IOAP	43726	S_MISF_MF_NB01_M_01_C_A1-2
MONTICELLO PS ELIMINATION	IOAP	27969	S_JT_JT_NB04_M_01_A
MONTICELLO PS ELIMINATION	IOAP	MSD0151-PS	S_JT_JT_NB04_M_01_A
NIGHTINGALE PS REPLACEMENT	IOAP	CSO018	L_SO_MF_018_S_03_A_A
NORTHERN DITCH DIVERSION INTER	ISSDP	MSD0271	NORTHERN DITCH DIVERSION INTER
OUTER LOOP/CAVEN WW STORAGE	IOAP	17724	S_PO_WC_PC09_M_09B_C
OUTER LOOP/CAVEN WW STORAGE	IOAP	27116	S_PO_WC_PC09_M_09B_C

OUTER LOOP/CAVEN WW STORAGE	IOAP	61667	S_PO_WC_PC09_M_09B_C
OUTER LOOP/CAVEN WW STORAGE	IOAP	61687	S_PO_WC_PC09_M_09B_C
OUTER LOOP/CAVEN WW STORAGE	IOAP	70212	S_PO_WC_PC09_M_09B_C
OUTER LOOP/CAVEN WW STORAGE	IOAP	MSD0133-PS	S_PO_WC_PC09_M_09B_C
PADDY'S RUN WW TREATMENT FAC (BELLS LN)	IOAP	CSO015	L_OR_MF_015_M_13_B_B_8
PADDY'S RUN WW TREATMENT FAC (BELLS LN)	IOAP	CSO191	L_OR_MF_015_M_13_B_B_8
PARKVIEW ESTATES I&I INVEST	IOAP	47250	S_SD_MF_NB03_S_07_C
PORTLAND WHARF STORAGE BASIN	IOAP	CSO019	L_OR_MF_019_S_13_B_A_8
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	IOAP	89641	S_OR_MF_NB04_M_03_B_B-3
PROSPECT WQTC ELIM/HARRODS CR	IOAP	16455	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	22436	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	40870	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	40871	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	40872	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	40879	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	40880	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	42675	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	42680	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	46621	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	46623	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	46627	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	65606	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	65610	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	65623	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	65633	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	65635	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	89646	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	89791	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B

PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0291	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD0292	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B
PROSPECT WQTC ELIM/HARRODS CR	IOAP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B
RAINTREE & MARIAN CT PS ELIM 1	IOAP	28729-W	S_JT_JT_NB03_M_01_C
RAINTREE & MARIAN CT PS ELIM 1	IOAP	MSD0149-PS	S_JT_JT_NB03_M_01_C
RIDING RIDGE PS IMPROVEMENTS	IOAP	MSD1060-LS	S_HC_HN_NB01_S_03_C_A
RUNNING FOX PS ELIMINATION	IOAP	MSD1080-LS	S_CC_CC_MSD1080_S_01_C
SHAWNEE FPS DWO ELIMINATION	IOAP	MSD0309-FP	L_OR_MF_189_M_03_A_A
SHIVELY INTERCEPTOR	IOAP	04498	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	04542	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	81814-W	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0016-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0043-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0044-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0047-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0049-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	IOAP	MSD0050-PS	S_MC_WC_NB01_M_01_A
SINKING FORK INTERCEPTOR	IOAP	21103	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	IOAP	25012	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	IOAP	63319	SINKING FORK RELIEF SEWER
SONNE PS I&I INVEST & REHAB	IOAP	MSD0042-PS	S_OR_MF_42007_S_07_C
SOUTHEASTERN DIVERSION STRUCT	IOAP	08426	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	08427	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	08430	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	08431	SOUTHEASTERN DIVERSION

			STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	18654	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	30680	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	30681	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	30701	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	30702	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	30704	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	49647	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	63779	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCT	IOAP	72571-X	SOUTHEASTERN DIVERSION STRUCT
SOUTHWESTERN PKY STORAGE BASIN	IOAP	CSO104	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKY STORAGE BASIN	IOAP	CSO105	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKY STORAGE BASIN	IOAP	CSO189	L_OR_MF_105_M_13_B_A_0
ST RENE RD PS INLINE STORAGE	IOAP	94187	S_FF_CH_NB01_S_09A_C_A
STORY & MAIN ST STORAGE BASIN	IOAP	CSO020	L_OR_MF_020_S_09B_B_A_8
SUTHERLAND INTERCEPTOR	IOAP	16649	S_SD_MF_NB05_M_01_A
WOODLAND HILLS PS DIVERSION	IOAP	33003	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	IOAP	65516	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	IOAP	65531	S_FF_FF_NB01_S_01_C_A



**Appendix F**

**CSO Flow Monitoring Quality Improvement**

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**Table F.1. Phase 1 CSOs**

<b>CSO</b>	<b>FINAL SOP COMPLETED</b>	<b>HISTORICAL VOLUME REVISED</b>	<b>PROGRAMMING CHANGES COMPLETED</b>	<b>EQUIPMENT CHANGES COMPLETED</b>	<b>TESTING / VERIFICATION COMPLETED</b>
015	6/30/2017	6/30/2017	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED
016	6/30/2017	N/A	TO BE COMPLETED	N/A	TO BE COMPLETED
018	6/30/2017	N/A	9/13/2017	N/A	TO BE COMPLETED
020	6/30/2017	6/30/2017	9/21/2017	N/A	10/10/2017
036	6/30/2017	6/30/2017	8/23/2017	7/29/2017	9/14/2017
054	6/30/2017	N/A	9/8/2017	N/A	9/12/2017
058	6/30/2017	6/30/2017	N/A	N/A	TO BE COMPLETED
088	6/30/2017	6/30/2017	8/23/2017	N/A	TO BE COMPLETED
093	6/30/2017	6/30/2017	N/A	N/A	TO BE COMPLETED
104	6/30/2017	6/30/2017	8/16/2017	N/A	9/12/2017
105	6/30/2017	6/30/2017	8/16/2017	N/A	9/12/2017
106	6/30/2017	6/30/2017	N/A	N/A	N/A
108	6/30/2017	6/30/2017	11/21/2017	10/17/2017	TO BE COMPLETED
109	6/30/2017	6/30/2017	11/21/2017	10/13/2017	TO BE COMPLETED
110	6/30/2017	6/30/2017	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED
118	6/30/2017	N/A	N/A	9/12/2017	9/12/2017
121	6/30/2017	6/30/2017	9/12/2017	10/13/2017	12/21/2017
125	6/30/2017	6/30/2017	9/8/2017	8/7/2017	9/8/2017
126	6/30/2017	6/30/2017	9/14/2017	7/25/2017	12/21/2017
127	6/30/2017	N/A	N/A	N/A	N/A
130	6/30/2017	6/30/2017	8/16/2017	N/A	TO BE COMPLETED
132	6/30/2017	6/30/2017	9/8/2017	7/25/2017	9/21/2017
140	6/30/2017	6/30/2017	11/21/2017	10/13/2017	TO BE COMPLETED
146	6/30/2017	N/A	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED
149	6/30/2017	N/A	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED
154	6/30/2017	6/30/2017	12/1/2017	12/20/2017	3/21/2018
160	6/30/2017	6/30/2017	8/23/2017	9/20/2017	12/22/2017
166	6/30/2017	6/30/2017	9/12/2017	10/9/2017	12/21/2017
167	6/30/2017	6/30/2017	9/8/2017	N/A	12/21/2017
189	6/30/2017	6/30/2017	8/16/2017	N/A	9/21/2017
190	6/30/2017	6/30/2017	11/1/2017	N/A	1/26/2018
191	6/30/2017	6/30/2017	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED
206	6/30/2017	6/30/2017	N/A	11/22/2017	12/6/2017
210	6/30/2017	N/A	TO BE COMPLETED	N/A	TO BE COMPLETED
211	6/30/2017	6/30/2017	8/16/2017	N/A	TO BE COMPLETED

**Table F.2. Phase 2 CSOs**

<b>CSO</b>	<b>FINAL SOP COMPLETED</b>	<b>HISTORICAL VOLUME REVISED</b>	<b>PROGRAMMING CHANGES COMPLETED</b>	<b>EQUIPMENT CHANGES COMPLETED</b>	<b>TESTING / VERIFICATION COMPLETED</b>
019	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
022	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
023	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
027	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
028	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
029	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
031	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
034	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
035	TO BE COMPLETED	N/A	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
038	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
050	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
051	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
052	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
053	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
055	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
056	TO BE COMPLETED	N/A	TO BE COMPLETED	10/24/2017	TO BE DETERMINED
057	TO BE COMPLETED	N/A	N/A	TO BE COMPLETED	TO BE DETERMINED
062	TO BE COMPLETED	N/A	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
082	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
083	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
084	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
091	TO BE COMPLETED	N/A	N/A	TO BE COMPLETED	TO BE DETERMINED
092	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
097	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
111	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
113	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
117	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
119	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
120	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE DETERMINED	TO BE DETERMINED
131	TO BE COMPLETED	N/A	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
137	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
141	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
144	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED
148	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED

**Table F.2. Phase 2 CSOs**

<b>CSO</b>	<b>FINAL SOP COMPLETED</b>	<b>HISTORICAL VOLUME REVISED</b>	<b>PROGRAMMING CHANGES COMPLETED</b>	<b>EQUIPMENT CHANGES COMPLETED</b>	<b>TESTING / VERIFICATION COMPLETED</b>
150	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
151	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
152	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
153	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
155	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
161	TO BE COMPLETED	N/A	N/A	TO BE COMPLETED	TO BE DETERMINED
172	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
178	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
179	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
181	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
193	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
195	TO BE COMPLETED	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED
196	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED
197	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
198	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
199	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED
200	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
201	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
202	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED
203	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
207	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
208	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
SBR 142	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
SBR 174	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
SBR 180	TO BE COMPLETED	N/A	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED
SBR 182	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
SBR 183	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
SBR 184	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
SBR 185	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
SBR 186	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED	TO BE DETERMINED
SBR 187	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED
SBR 188	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED
SBR 205	TO BE COMPLETED	TO BE COMPLETED	TO BE COMPLETED	TO BE DETERMINED	TO BE DETERMINED

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