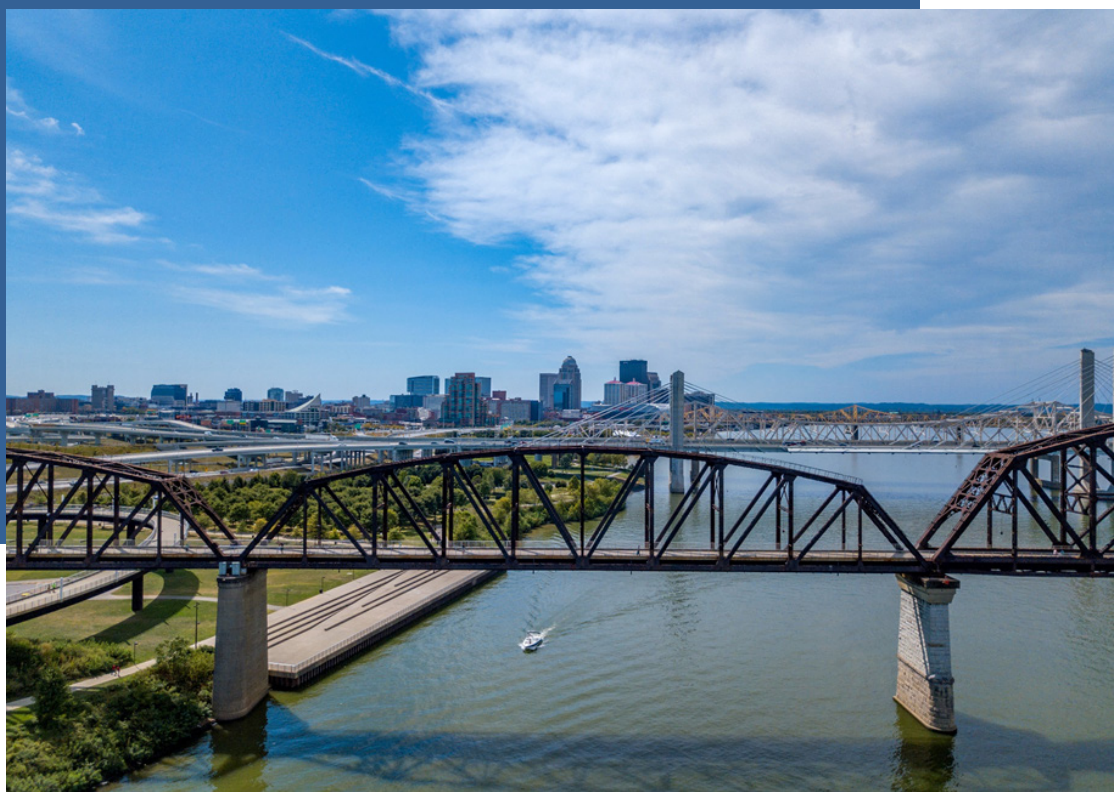

Louisville and Jefferson County Metropolitan Sewer District Second Amended Consent Decree Annual Report FY21

msd
Safe, clean waterways

Louisville & Jefferson County Metropolitan Sewer District
Second Amended Consent Decree Annual Report

Reporting Period:

July 1, 2020 through June 30, 2021

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:

September 30, 2021

msd

Safe, clean waterways

TABLE OF CONTENTS

FY20 Amended Consent Decree Annual Report Crosswalk vii

Introduction xv

Section 1: Project Waterway Improvements Now (WIN) Performance Overview 1

1.1. Discharge Definitions and Documentation 1
1.2. Rainfall 1
1.3. Authorized Discharges — Wet Weather CSOs 3
1.3.1. Current Reporting Period 3
1.3.2. Cumulative Discharge Reductions 3
1.4. Unauthorized Discharges — Wet Weather SSOs 3
1.4.1. Current Reporting Period 3
1.4.2. Cumulative Discharge Reductions 3
1.5. Unauthorized Discharges — Dry Weather CSOs 3
1.6. Unauthorized Discharges — Dry Weather SSOs 6
1.7. Bypasses at Water Quality Treatment Centers 6
1.8. Overflows 6
1.8.1. Wet Interior Overflows 6
1.8.2. Dry Interior Overflows 6
1.8.3. Wet Exterior Overflows 6
1.8.4. Dry Exterior Overflows 6
1.9. SSOs per 100 Miles of Sewer 6

Section 2: Program Activities for Discharge Abatement Plans 11

2.1. Integrated Overflow Abatement Plan (IOAP) 11
2.2. Sanitary Sewer Discharge Plan (SSDP) 11
2.3. CSO Long Term Control Plan (LTCP) 12
2.4. Additional Early Action Plan Projects 12
2.5. Post-Construction Compliance Monitoring 13
2.5.1. PCCM for SSDP Projects 13
2.5.2. PCCM for LTCP Projects 13
2.5.3. Stream Flow and Water Quality Monitoring 13
2.6. IOAP Activity Schedule 14

Section 3: Program Activities for Nine Minimum Controls 17

3.1. NMC 1: Proper Operation and Maintenance Programs 17
3.2. NMC 2: Maximization of Storage in the Collection System 18
3.2.1. Real Time Control (RTC) Optimization 18
3.2.2. Storage Optimization 19
3.3. NMC 3: Review and Modification of Pretreatment Requirements 21

3.4. NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center 23
3.4.1. Capital Projects 23
3.4.2. Morris Forman WQTC Performance 23
3.4.3. Wet Weather Capture 23
3.5. NMC 5: Elimination of Combined Sewer Overflows during Dry Weather 25
3.6. NMC 6: Control of Solids and Floatable Materials in Combined Sewer Overflows 25
3.7. NMC 7: Pollution Prevention Programs to Reduce Contaminants in Combined Sewer Overflows 26
3.8. NMC 8: Public Notification 27
3.9. NMC 9: Monitoring to Characterize Combined Sewer Overflow Impacts and the Efficacy of Combined Sewer Overflow Controls 28
3.10. NMC Activity Schedule 28
Section 4: Program Activities for Capacity Management, Operations and Maintenance 35
4.1. Capacity Management Operations and Maintenance Program Activities 35
4.1.1. Management Programs 35
4.1.2. Operations Programs 53
4.1.3. Maintenance Programs 58
4.2. Comprehensive Performance Evaluations and Composite Correction Plans (CPE/CCP) 61
4.2.1. All Water Quality Treatment Centers 61
4.2.2. Hite Creek Water Quality Treatment Center 61
4.2.3. Floyds Fork Water Quality Treatment Center 62
4.2.4. Derek R. Guthrie Water Quality Treatment Center 62
4.2.5. Cedar Creek Water Quality Treatment Center 63
4.3. CMOM Activity Schedule 63
Section 5: Program Activities for Sewer Overflow Response Protocol 71
5.1. Program Background 71
5.2. Overflow Management and Field Documentation 71
5.3. Regulatory Reporting and Data Management 73
5.4. Staff Training & Communication 73
Section 6: Program Activities for Public Outreach, Education, Notification and Participation 75
6.1. Public Notification Program 75
6.1.1. Overflow Advisory Signs 75
6.1.2. Electronic Notifications 75
6.1.3. Print Notifications 75
6.2. Public Education Programs 76
6.2.1. Radio and TV Activities 76
6.2.2. Printed Media Activities 77

6.2.3. Digital Media Activities 78
6.3. Public Outreach Programs 78
6.3.1. IOAP Project and Program Meetings 79
Section 7: Program Activities for Asset Management 83
7.1. Strategic Asset Management Plan 83
7.1.1. Tactical Asset Management Plans 83
7.2. Asset Management Program Costs 84
7.3. AM Activity Schedule 84

TABLES

Table 1.1. Wet Weather CSO Discharge Summary - Current Reporting Period.....3

Table 1.2. Wet Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods.....4

Table 1.3. Wet Weather SSO Discharge Occurrence - Historic and Current Reporting Periods.....4

Table 1.4. Dry Weather CSO Discharge Volume (gal) - Historic and Current Reporting Periods.....4

Table 1.5. Dry Weather CSO Discharge Occurrence - Historic and Current Reporting Periods.....4

Table 1.6. Wet Weather SSO Cumulative Reduction Modeled Projection - Summary.5

Table 1.7. Dry Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods.....7

Table 1.8. Dry Weather SSO Discharge Occurrence - Historic and Current Reporting Periods.....7

Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods 7

Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods.....7

Table 1.11. Wet Overlow to the Interior Occurrence - Historic and Current Reporting Periods.....8

Table 1.12. Dry Overflow to the Interior Occurrence - Historic and Current Reporting Periods.....8

Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods.....8

Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods.....8

Table 2.1. SSDP PCCM Project Status.....14

Table 3.1. NMC 1 Performance Measures.....17

Table 3.2. Other NMC 1 Activities Completed 17

Table 3.3. Voluntary Controls During Wet Weather Events 21

Table 3.4. Morris Forman WQTC Permit Compliance.....23

Table 3.5. Debris Removed from System.....26

Table 4.1. Training Program 36

Table 4.2. Safety Incidents and Worker Compensation Claims 40

Table 4.3. Utility Information Management Applications.....40

Table 4.4. Continuing Sewer System Assessment Activities.....43

Table 4.5. SCAP Wastewater Capacity Request Reviews 44
Table 4.6. Financing and Cost Analysis Program Performance 45
Table 4.7. Mission Critical Equipment and Fleet Performance Measures 48
Table 4.8. Customer Service Call Data 49
Table 4.9. Sanitary PS Structured Maintenance 59
Table 4.10. Force Main Inspections 60
Table 4.11. Regional WQTC Permit Compliance 62
Table 4.12. WQTC Structured Maintenance 62
Table 5.1. Discharge Notifications 71
Table 5.2. Hauling Operations 72
Table 5.3. SORP Training Details 73
Table 6.1. Metro TV Broadcasts 75
Table 6.2. Public Education Workshops & Activities 77
Table 6.3. Green Infrastructure Workshops & Activities 79
Table 6.4. Clean Stream Workshops & Actiivities 79
Table 6.5. Outreach Activities for Students 80
Table 7.1. Asset Management Program Costs - Current Reporting Period 85

FIGURES

Figure 1.1. MSD Rain Gauge Network 2
Figure 1.2. Daily Average Rainfall by Month 2
Figure 1.3. Wet Weather SSO Cumulative Reduction Projection - Volume 5
Figure 1.4. Wet Weather SSO Cumulative Reduction Projection - Occurrences 5
Figure 1.5. SSOs per 100 Miles of Sewer 10
Figure 2.1. IOAP Activity Schedule 15
Figure 3.1. CSO Locations Relative to Morris Forman WQTC 23
Figure 3.2. Morris Forman WQTC Wet Weather Capture Trend 24
Figure 3.3. Morris Forman WQTC Peak Daily Flow 24
Figure 3.4. NMC Activity Schedule 29
Figure 4.1. CMOM Activity Schedule 64
Figure 6.1. MSD's Structured Public Involvement Meeting Process 81
Figure 7.1. Asset Management Schedule 88

APPENDICES

Appendix A Authorized Discharges - Wet Weather CSOs A-1
Appendix B Annual Average Overflow Volume B-1
Appendix C Unauthorized Discharges - Wet Weather SSOs C-1
Appendix D Unauthorized Discharges - Dry Weather CSOs D-1
Appendix E Unauthorized Discharges - Dry Weather SSOs E-1
Appendix F Overflows to the Interior F-1
Appendix G Overflows to the Exterior G-1
Appendix H IOAP Crosswalk H-1
Appendix I Wet Weather Storage in the Morris Forman Sewer System via RTC I-1
Appendix J Morris Forman Plant Flows and Associated CSO Activations J-1
Appendix K Organizational Chart K-1
Appendix L SCAP Balance L-1

FY20 Amended Consent Decree Annual Report Crosswalk

This section provides a crosswalk between the fifteenth Amended Consent Decree Annual Report, submitted December 30, 2021, and this first Second Amended Consent Decree Annual Report..

Table of Contents Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Introduction	Changed to reflect 2ACD language, revised section order and additions
Section 1: Project Waterway Improvements Now (WIN) Performance Overview	No Change
1.1. Combined Sewer Overflow Reduction And Sanitary Sewer Overflow Abatement Activities	Incorporated into Section 2: Program Activities for Discharge Abatement Plans (DAP)
1.1.1. Combined Sewer Overflow Reduction and Control Activities	Incorporated into Section 2: Program Activities for Discharge Abatement Plans (DAP)
1.2.2. Sanitary Sewer Overflow Elimination Activities	Incorporated into Section 2: Program Activities for Discharge Abatement Plans (DAP)
1.2. Systemwide Performance	Section 1.1. Discharge / overflow reporting included in sections 1.3-1.8.
1.2.1. Rainfall	Section 1.2.
1.2.3. Discharges	Section 1.1. Discharge / overflow reporting included in sections 1.3-1.8.
1.3. Water Quality Treatment Center Performance	Included in Section 1.7. and 1.8.
1.3.1. Overflows to the Exterior	Included in Sections 1.8.3 and 1.8.4.
1.3.2. Bypasses	Section 1.7.
1.3.3. Morris Forman Water Quality Treatment Center	Incorporated into Section 1.7.
1.3.4. Regional Water Quality Treatment Centers	Incorporated into Section 1.7.
1.3.5. Non-Regional Water Quality Treatment Centers	Incorporated into Section 1.7.
1.4. Combined Sewer Overflow Performance	
1.4.1. Authorized Discharges – Wet Weather CSOs	Section 1.3.
1.4.2. Unauthorized Discharges – Dry Weather CSOs	Section 1.5.
1.4.3. CSO Flow Monitoring Quality Improvement	Not included. Completed June 30, 2020, no new information to add.
1.5. Collection System Overflow Performance	
1.5.1. Unauthorized Discharges to Waters of US - Wet Weather SSOs	Section 1.4
1.5.2. Wet Weather Overflows to the Interior	Section 1.8.1
1.5.3. Wet Weather Overflows to the Exterior	Section 1.8.3
1.5.4. Wet Weather Hauling Events	Included in Section 5.2.
1.5.5. Unauthorized Discharges to Waters of the US - Dry weather SSOs	Section 1.6.
1.5.6. Dry Weather Overflows to the Interior	Section 1.8.2.
1.5.7. Dry Weather Overflows to the Exterior	Section 1.8.4.
1.6. SSOs per 100 Miles of Sewer	Section 1.9
Section 2: Program Activities for Nine Minimum Controls (NMC)	Section 3

Table of Contents Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
2.1. NMC 1: Proper Operation and Maintenance Programs	Section 3.1.
2.2. NMC 2: Maximization of Storage in the Collection System	Section 3.2.
2.3. NMC 3: Review and Modification of Pretreatment Requirements	Section 3.3.
2.4. NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center	Section 3.4.
2.4.1. Morris Forman Water Quality Treatment Center	Section 3.4.2.
2.4.2. Wet Weather Capture	Section 3.4.3.
2.5. NMC 5: Elimination of Combined Sewer Overflows during Dry Weather	Section 3.5.
2.6. NMC 6: Control of Solids and Floatable Materials in Combined Sewer Overflows	Section 3.6.
2.7. NMC 7: Pollution Prevention Programs to Reduce Contaminants in Combined Sewer Overflows	Section 3.7.
2.8. NMC 8: Public Notification	Section 3.8.
2.9. NMC 9: Monitoring to Characterize Combined Sewer Overflow Impacts and the Efficacy of Combined Sewer Overflow Controls	Section 3.9.
2.10. NMC Activity Schedule	Section 3.10.
Section 3: Program Activities for Sewer Overflow Response Protocol (SORP)	Section 5.
3.1. Overflow Management and Field Documentation	Section 5.1. Includes hauling data previously reported in quarterly reports.
3.2. Regulatory Reporting and Data Management	Section 5.3.
3.3. Staff Training and Communication	Section 5.4.
3.4. Annual Program Review	Not included. To be included in the semi-annual report.
3.5. Public Notification and Communication	Not included. Was a reference to Section 5 (now Section 6).
Section 4: Program Activities for Discharge Abatement Plans (DAP)	Section 2.
4.1. Integrated Overflow Abatement Plan (IOAP)	Section 2.1. Updated to address 2ACD.
4.2. Sanitary Sewer Discharge Plan (SSDP)	Section 2.2.
4.2.1. Updated Sanitary Sewer Overflow Plan (SSOP) Implementation	Included in Section 2.2. Updated to address 2ACD.
4.2.2. Interim Sanitary Sewer Discharge Plan (ISSDP)	Included in Section 2.2. Updated to address 2ACD.
4.2.3. Final Sanitary Sewer Discharge Plan (SSDP)	Included in Section 2.2. Updated to address 2ACD.
4.3. CSO Long Term Control Plan (LTCP)	Section 2.3.
4.3.1. Interim CSO Long Term Control Plan (LTCP)	Included in Section 2.3. Updated to address 2ACD.
4.3.2. Final CSO Long Term Control Plan (LTCP)	Included in Section 2.3. Updated to address 2ACD.
4.3.3. Green Demonstration Project Update	Not included. Addressed in 2ACD paragraph 11 and 2021 IOAP Volume 2, Chapters 3 & 4.

Table of Contents Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
4.3.4. Green Infrastructure Programmatic Activities	Not included. Addressed in 2021 IOAP Volume 2, Chapters 3 & 4.
4.4. Discharge Abatement Plan Project Status	Included in Sections 2.2-2.3.
4.4.1. Sanitary Sewer Discharge Plan (SSDP)	Included in Sections 2.2-2.3.
4.4.2. Jeffersontown Water Quality Treatment Center Elimination	Not included. Addressed in 2ACD paragraph 12.
4.4.3. Combined Sewer Overflow Long Term Control Plan (LTCP)	Included in Sections 2.2-2.3.
New	Section 2.4. Additional Early Action Plan Projects
4.4.4. Activity Progress Chart	Section 2.6.
4.5. Post Construction Compliance Monitoring Program	Section 2.5.
4.5.1. Modeling Program	Included in Section 2.5. Section 2.5.1. addresses PCCM for SSDP projects. Section 2.5.2. addresses PCCM for LTCP projects.
4.5.2. Project Performance Reporting	Included in Section 2.5. Section 2.5.1. addresses PCCM for SSDP projects. Section 2.5.2. addresses PCCM for LTCP projects.
4.5.3. Green Infrastructure Monitoring	Not included. Addressed in 2021 IOAP Volume 2, Chapters 3 & 4.
4.5.4. Water Quality Synthesis Report	Section 2.5.3.
Section 5: Program Activities For Public Outreach, Education, Notification and Participation	Section 6.
5.1. Public Notification Program	Section 6.1.
5.1.1. Overflow Advisory Signs	Section 6.1.1.
5.1.2. Electronic Notifications	Section 6.1.2.
5.1.3. Print Notifications	Section 6.1.3.
5.2. Public Education Programs	Section 6.1.
5.2.1. Radio and TV Activities	Section 6.2.1.
5.2.2. Printed Media Activities	Section 6.2.2.
5.2.3. Project WIN and Green Websites	Section 6.2.3. Renamed Digital Media Activities.
5.3. Public Outreach Programs	Section 6.3.
5.3.1. Green Infrastructure Workshops and Activities	Included in Section 6.3.
5.3.2. Clean Streams Workshops and Activities	Included in Section 6.3.
5.3.3. Outreach Activities for Students	Included in Section 6.3.
5.3.4. IOAP Project and Program Meetings	Section 6.3.1.
Section 6: Capacity Management Operations and Maintenance (CMOM) Report	Section 4.
6.1. Capacity Management Operations and Maintenance Program Activities	Section 4.1.
6.1.1. Management Programs	Section 4.1.1.
6.1.2. Operations Programs	Section 4.1.2.
6.1.3. Maintenance Programs	Section 4.1.3.
6.2. Comprehensive Performance Evaluations and Composite Correction Plans (CPE/CCP)	Section 4.3.

Table of Contents Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
6.2.1. Amended Consent Decree CPE/CCP Program	Not included. Addressed in 2ACD paragraph 13.
6.2.2. CMOM CPE/CCP Program	Included sections for all WQTC for performance measures, added structured maintenance performance. Removed Jeffersontown WQTC, addressed in 2ACD paragraph 12.
6.3. CMOM Activity Schedule	Section 4.3.

Table Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Table 1.1. Completed Combined Sewer Overflow Reduction and Control Activities	Removed. Nothing to report for the current reporting period.
Table 1.2. Observed Discharges by Weather and Result	Removed. Included in subsequent tables.
New	Table 1.3 Wet Weather SSO Cumulative Reduction Summary
Table 1.3. Observed Overflows to the Exterior by Weather - All WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.4. Observed Overflows to the Exterior by Result - All WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.5. Bypass Events by Weather – All WQTCs	Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods, Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods
Table 1.6. Bypass Events by Cause – All WQTCs	Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods, Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods
Table 1.7. Observed Overflows to the Exterior by Weather - All WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.8. Observed Overflows to the Exterior by Result - All WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.9. Observed Overflows to the Exterior by Weather - All WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.10. Observed Overflows to the Exterior by Result - All WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.11. Observed Overflows to the Exterior by Weather – Regional WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.12. Observed Overflows to the Exterior by Cause – Regional WQTCs	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods, Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods

Table Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Table 1.13. Bypass Events by WQTC – Regional WQTCs	Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods, Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods
Table 1.14. Bypass Events by Weather – Regional WQTCs	Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods, Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods
Table 1.15. Bypass Events by Cause – Regional WQTCs	Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods, Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods
New	Table 1.1. Wet Weather CSO Discharge Summary - Current Reporting Period
Table 1.16. Dry Weather CSOs	Table 1.4. Dry Weather CSO Discharge Volume (gal) - Historic and Current Reporting Periods, Table 1.5. Dry Weather CSO Discharge Occurrence - Historic and Current Reporting Periods
Table 1.17. Dry Weather CSOs by Fiscal Year	Table 1.4. Dry Weather CSO Discharge Volume (gal) - Historic and Current Reporting Periods, Table 1.5. Dry Weather CSO Discharge Occurrence - Historic and Current Reporting Periods
Table 1.18. Wet Weather SSOs by Fiscal Year and Asset - Unauthorized Discharges to Waters of the US	Table 1.2. Wet Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods, Table 1.3. Wet Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods
Table 1.19. Wet Weather SSOs by Fiscal Year and Cause - Unauthorized Discharges to Waters of the US	Table 1.2. Wet Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods, Table 1.3. Wet Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods
New	Table 1.6. Wet Weather SSO Cumulative Reduction Modeled Projection - Summary
Table 1.20. Wet Weather Overflows to the Interior by Fiscal Year and Cause	Table 1.11. Wet Overlow to the Interior Occurrence - Historic and Current Reporting Periods
Table 1.21. Wet Weather Overflows to the Exterior by Fiscal Year and Asset	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.22. Wet Weather Overflows to the Exterior by Fiscal Year and Cause	Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.23. Hauled Volumes in Gallons by Fiscal Year and Month	Table 5.2. Hauling Operations
Table 1.24. Hauled Volumes in Gallons by Fiscal Year and Cause	Table 5.2. Hauling Operations
Table 1.25. Dry Weather SSOs by Fiscal Year and Asset – Unauthorized Discharges to Waters of US	Table 1.7. Dry Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods, Table 1.8. Dry Weather SSO Discharge Occurrence - Historic and Current Reporting Periods
Table 1.26. Dry Weather SSOs by Fiscal Year and Cause – Unauthorized Discharges to Waters of US	Table 1.7. Dry Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods, Table 1.8. Dry Weather SSO Discharge Occurrence - Historic and Current Reporting Periods

Table Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Table 1.27. Dry Weather Overflows to the Interior by Fiscal Year and Cause	Table 1.12. Dry Overflow to the Interior Occurrence - Historic and Current Reporting Periods
Table 1.28. Dry Weather Overflows to the Exterior by Fiscal Year and Asset	Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 1.29. Dry Weather Overflows to the Exterior by Fiscal Year and Cause	Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods
Table 2.1. NMC 1 Programmatic Implementation Attainment	Table 3.1. NMC 1 Performance Measures
Table 2.2. NMC 1 Cleaning & Inspection Activities	Table 3.2. Other NMC 1 Activities Completed
Table 2.3. Wet Weather Storage in the Morris Forman Sewer System via the RTC System	Appendix J Wet Weather Storage in the Morris Forman Sewer System via RTC
Table 2.4. Typical Pollutants Kept Out of the CSS per Rain Event	Table 3.3. Voluntary Controls During Wet Weather Events
Table 2.5. Total Quantity Pollutants Kept Out of the CSS	Table 3.3. Voluntary Controls During Wet Weather Events
New	Table 3.4. Morris Forman WQTC Permit Compliance
Table 2.6. Debris Removed from System	Table 3.5. Debris Removed from System
Table 3.1. Reporting Timeframe for Unauthorized Discharges to Waters of the US	Table 5.1. Discharge Notifications
Table 3.2. Completed SORP Training Schedule	Table 5.3. SORP Training Details
Table 3.3. Projected SORP Training Schedule	5.4. Staff Training & Communication. Incorporated into text.
Table 4.1. IOAP Project Minor Modifications	Removed. Incorporated into 2021 IOAP Volume 1 Section 1.
Table 4.2. IOAP Project Completion Dates - CSO LTCP	Not included. Nothing to report for the current reporting period.
Table 4.3. IOAP Project Required Completion Dates - CSO LTCP	2.3. CSO Long Term Control Plan (LTCP). Incorporated into text.
Table 4.4. IOAP Project Performance - Performance Status	Removed. Reported in previous annual reports and addressed in 2021 IOAP Vol 1 Section 6.
Table 4.5. IOAP Project Performance - Phased Project Performance Status Summary	Table 2.1. SSDP PCCM Project Status
Table 4.6. IOAP Project Performance - Remedial Measure Performance Status Summary	Table 2.1. SSDP PCCM Project Status
New	Table 6.1. Metro TV Broadcasts
Table 5.1. Public Education Workshops and Activities	Table 6.2. Public Education Workshops & Activities
Table 5.2. Green Infrastructure Workshop and Activities	Table 6.3. Green Infrastructure Workshops & Activities
Table 5.3. Clean Streams Workshop and Activities	Table 6.4. Clean Stream Workshops & Actiivities
Table 5.4. Outreach Activities for Students	Table 6.5. Outreach Activities for Students
New	Table 4.1. Training Program
Table 6.1. Safety Incidents and Worker Compensation Claims	Table 4.2. Safety Incidents and Worker Compensation Claims

Table Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Table 6.2. Utility Information Management Applications	Table 4.3. Utility Information Management Applications
New	Table 4.4. Continuing Sewer System Assessment Activities
Table 6.3. SCAP Wastewater Capacity Request Review	Table 4.5. SCAP Wastewater Capacity Request Reviews
Table 6.4. Fiscal Year Financing and Cost Analysis Program Details	Table 4.6. Financing and Cost Analysis Program Performance
Table 6.5. Mission Critical Equipment Availability and Turnaround Time	Table 4.7. Mission Critical Equipment and Fleet Performance Measures
Table 6.6. Customer Service Call Data	Table 4.8. Customer Service Call Data
New	Table 4.9. Sanitary PS Structured Maintenance
Table 6.7. Completed Force Main Inspections	Table 4.10. Force Main Inspections
New	Table 4.11. Regional WQTC Permit Compliance
New	Table 4.12. WQTC Structured Maintenance
New	Table 7.1. Asset Management Program Costs - Current Reporting Period

Figure Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Figure 1.1. MSD Rain Gauge Network	Figure 1.1. MSD Rain Gauge Network
Figure 1.2. Daily Average Rainfall by Month	Figure 1.2. Daily Average Rainfall by Month
Figure 1.3. Monthly Average Rainfall by Fiscal Year	Removed.
Figure 1.4. Trend of Observed Overflows to the Exterior by Weather - All WQTCs	Removed.
Figure 1.5. Trend of Observed Overflows to the Exterior by Result - All WQTCs	Removed.
Figure 1.6. Trend of Bypass Events by Weather – All WQTCs	Removed.
Figure 1.7. Trend of Bypass Events by Cause – All WQTCs	Removed.
Figure 1.8. Exceedances by Fiscal Year – Morris Forman WQTC	Table 3.4. Morris Forman WQTC Permit Compliance
Figure 1.9. Trend of Bypass Events by Weather – Regional WQTCs	Removed.
Figure 1.10. Trend of Bypass Events by Cause – Regional WQTCs	Removed.
Figure 1.11. Exceedances by Fiscal Year – Regional WQTCs	Table 4.11. Regional WQTC Permit Compliance
Figure 1.12. Dry Weather Overflows by Fiscal Year	Removed.
Figure 1.13. Trend of Wet Weather SSOs by Fiscal Year and Asset - Unauthorized Discharges to Waters of the US	Removed.
New	Figure 1.3. Wet Weather SSO Cumulative Reduction Modeled Projection - Volume
New	Figure 1.4. Wet Weather SSO Cumulative Reduction Modeled Projection - Occurrences

Figure Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Figure 1.14. Trend of Non-Capacity Related Wet Weather SSOs by Fiscal Year and Cause - Unauthorized Discharges to Waters of the US	Removed.
Figure 1.15. Trend of Non-Capacity Related Wet Weather Overflows to the Interior by Fiscal Year and Cause	Removed.
Figure 1.16. Trend of Non-Capacity Related Wet Weather Overflows to the Exterior by Fiscal Year and Asset	Removed.
Figure 1.17. Trend of Non-Capacity Related Wet Weather Overflows to the Exterior by Fiscal Year and Cause	Removed.
Figure 1.18. Hauled Non-Capacity Volumes in Gallons by Fiscal Year and Month	Table 5.2. Hauling Operations
Figure 1.19. Trend of Non-Capacity Related Hauled Volumes in Gallons by Fiscal Year and Cause	Removed.
Figure 1.20. Trend of Dry Weather SSOs by Fiscal Year and Asset – Unauthorized Discharges to Waters of US	Removed.
Figure 1.21. Trend of Dry Weather SSOs by Fiscal Year and Cause – Unauthorized Discharges to Waters of US	Removed.
Figure 1.22. Trend of Dry Weather Overflows to the Interior by Fiscal Year and Cause	Removed.
Figure 1.23. Trend of Dry Weather Overflows to the Exterior by Fiscal Year and Asset	Removed.
Figure 1.24. Trend of Dry Weather Overflows to the Exterior by Fiscal Year and Cause	Removed.
Figure 1.25. SSOs per 100 miles of Sewer	Figure 1.5. SSOs per 100 Miles of Sewer
Figure 2.1. CSO, Siphon, and Flapgate Inspections	Table 3.1. NMC 1 Performance Measures
Figure 2.2. Combined System Catch Basin Scheduled Cleaning	Table 3.1. NMC 1 Performance Measures
Figure 2.3. Combined System Gravity Main Structured Maintenance	Table 3.2. Other NMC 1 Activities Completed
Figure 2.4. Combined System Gravity Main Completed Inspections	Table 3.2. Other NMC 1 Activities Completed
Figure 2.5. CSO Locations Relative to Morris Forman WQTC	Figure 3.1. CSO Locations Relative to Morris Forman WQTC
Figure 2.6. Morris Forman WQTC Wet Weather Capture Trend	Figure 3.2. Morris Forman WQTC Wet Weather Capture Trend
Figure 2.7. Morris Forman WQTC Peak Daily Flow	Figure 3.3. Morris Forman WQTC Peak Daily Flow
Figure 2.8. NMC Quarterly Commitments Schedule	Figure 3.4. NMC Activity Schedule
Figure 4.1. IOAP Implementation Schedule	Figure 2.1. IOAP Activity Schedule
Figure 5.1. Metro TV Broadcasts	Table 6.1. Metro TV Broadcasts
Figure 5.2. MSD's Structured Public Involvement Meeting Process	Figure 6.1. MSD's Structured Public Involvement Meeting Process
Figure 6.1. Training Program - Sessions	Removed.
Figure 6.2. Training Program - Hours	Removed.
Figure 6.3. Safety Performance Rate Trends	Removed.

Figure Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Figure 6.4. Gravity Main Corrective and Structured Maintenance Inspections	Removed.
Figure 6.5. MSD Capitalized Budget Performance	Removed.
Figure 6.6. Availability for MCE and Fleet Equipment	Removed.
Figure 6.7. 24-Hour Turnarounf for MCE and Fleet Equipment	Removed.
Figure 6.8. 48-Hour Turnarounf for MCE and Fleet Equipment	Removed.
Figure 6.9. Abandoned Call Rate	Removed.
Figure 6.10. Sanitary Pump Station Structured Maintenance	Removed.
Figure 6.11. Gravity Main Corrective and Structured Maintenance	Removed.
Figure 6.12. CMOM Quarterly Commitments Schedule	Figure 4.1. CMOM Activity Schedule
New	Figure 7.1. Asset Management Schedule

Appendix Crosswalk

FY20 ANNUAL REPORT	FY21 ANNUAL REPORT
Appendix A Acronyms	Removed.
Appendix B Discharge Work Orders	Separated into individual appendices.
Appendix C CSO Flow Monitoring Data	Appendix A Authorized Discharges - Wet Weather CSOs
Appendix D Annual Average Overflow Volume	Appendix B Annual Average Overflow Volume
New	Appendix C Unauthorized Discharges - Wet Weather SSOs
New	Appendix D Unauthorized Discharges - Dry Weather CSOs
New	Appendix E Unauthorized Discharges - Dry Weather SSOs
New	Appendix F Overflows to the Interior
New	Appendix G Overflows to the Exterior
New	Appendix H IOAP Crosswalk
New	Appendix I Wet Weather Storage in the Morris Forman Sewer System via RTC
New	Appendix J Morris Forman Plant Flows and Associated CSO Activations
Appendix E Public Notification	Removed.
Appendix F Organizational Chart	Appendix K Organizational Chart
Appendix G Continuing Sewer System Assessment Protocol	Removed. Submittal for FY20 only.
New	Appendix L SCAP Balance

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Introduction

The Louisville and Jefferson County Metropolitan Sewer District (MSD) has entered into a Second Amended Consent Decree (2ACD) with the Kentucky Energy & Environment Cabinet (KEEC) and the United States Environmental Protection Agency (EPA). The Second Amended Consent Decree is anticipated to be signed by United States District Judge and filed in United States District Court, Western Division of Kentucky, Louisville Division in 2021.

Annual Reporting Period

This is the first Annual Report submitted in accordance with Paragraph 42 of the 2ACD. This report covers the time period from July 1, 2020, through June 30, 2021. The structure for this report is outlined as follows:

Section 1: Project Waterway Improvements Now (WIN) Performance Overview – This section provides an accounting of the current reporting period and the cumulative reductions in volume and in number of occurrences of Unauthorized Discharges from the Sanitary Sewer System (SSS), Combined Sewer System (CSS), and Water Quality Treatment Centers (WQTCs), and discharges from MSD's Combined Sewer Overflow (CSO) locations identified in MSD's Morris Forman Water Quality Treatment Center (WQTC) Kentucky Pollutant Discharge Elimination System (KPDES) permit. This section also provides an accounting of bypasses at MSD's WQTCs that occurred during the current reporting period.

Section 2: Program Activities for Discharge Abatement Plans – This section provides documentation of projects and activities conducted during the current reporting period to implement requirements of the 2ACD, including the Final Long Term Control Plan (LTCP), Final Sanitary Sewer Discharge Plan (SSDP), and Additional Early Action Projects (AEAPs).

Section 3: Program Activities for Nine Minimum Controls – This section provides documentation of projects and activities conducted during the current reporting period to continue implementation of this program for compliance with the 2ACD.

Section 4: Program Activities for Capacity Management, Operations and Maintenance – This section provides documentation of projects and activities conducted during the current reporting period to continue implementation of this program for compliance with the 2ACD.

Section 5: Program Activities for Sewer Overflow Response Protocol – This section provides documentation of projects and activities conducted during the current reporting period to continue implementation of this program for compliance with the 2ACD.

Section 6: Program Activities for Public Outreach, Education, Notification and Participation – This section provides documentation of projects and activities conducted during the current reporting period to support MSD's Nine Minimum Controls and Capacity Management, Operations and Maintenance Programs.

Section 7: Program Activities for Asset Management – This section describes the scope, schedule and status for activities that were active during the current reporting period for continued compliance with the 2ACD.

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Section 1: Project Waterway Improvements Now (WIN) Performance Overview

1.1. Discharge Definitions and Documentation

MSD enters and maintains information related to unauthorized discharges and overflows that are observed by MSD staff in the Infor Public Sector (IPS) asset management system utilizing procedures reviewed and improved through efforts associated with components of the Sewer Overflow Response Protocol (SORP), as required under the Second Amended Consent Decree. These overflows and discharges are categorized using the following categories:

- Asset Type
  - Water Quality Treatment Center (WQTC)
  - Combined Sewer Overflow (CSO)
  - Collections System Assets associated with a Sanitary Sewer Overflow (SSO)
    - Pump Stations –sanitary, flood and viaduct pump stations
    - Access Points – manholes, valves and inlets
    - Mains – sanitary and combined system mains
    - Service Connections – customer service lines
- Weather – Dry or wet
- Result – Waters of the United States (WUS), Exterior (i.e., to the ground), or Interior (i.e., inside a building)
- Cause – The issue that caused the discharge, including the following groups:
  - Bypass / Upset at a WQTC (or Blending at Jeffersontown WQTC, for discharges that occurred prior to WQTC elimination) as defined by permit
  - Capacity – Lack of Capacity or Pumped Overflow during wet weather
  - Maintenance & Operations Issue – Electrical Problem at MSD, Grease Blockage, Mechanical Failure, Obstruction (Not Grease or Roots), Power Outage, Pumped due to USACE Manual Requirements, Roots, Structural Issue, or Utility Damage

All overflow reporting documentation is stored in MSD's asset management system, IPS. Unauthorized discharges to the Waters of the United States (WUS) have been reported to the Kentucky Energy and Environment Cabinet (KEEC) and the Environmental Protection Agency (EPA) per the approved SORP.

MSD has developed performance measures to monitor the operation of the collections system and WQTCs, with the goal of reducing sewer overflows and improving surface water quality. The data reported in this document is the best, most up-to-date data available as of the document date. There may be changes to historic data as the data is reviewed for quality and accuracy and updated on a continuous basis by MSD administrative and field staff.

1.2. 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. No new rain gauges have been installed by MSD during the reporting period, and the total network currently has 46 rain gauges, as shown in Figure 1.1. Nine gauges are located within Indiana,

Figure 1.1. MSD Rain Gauge Network

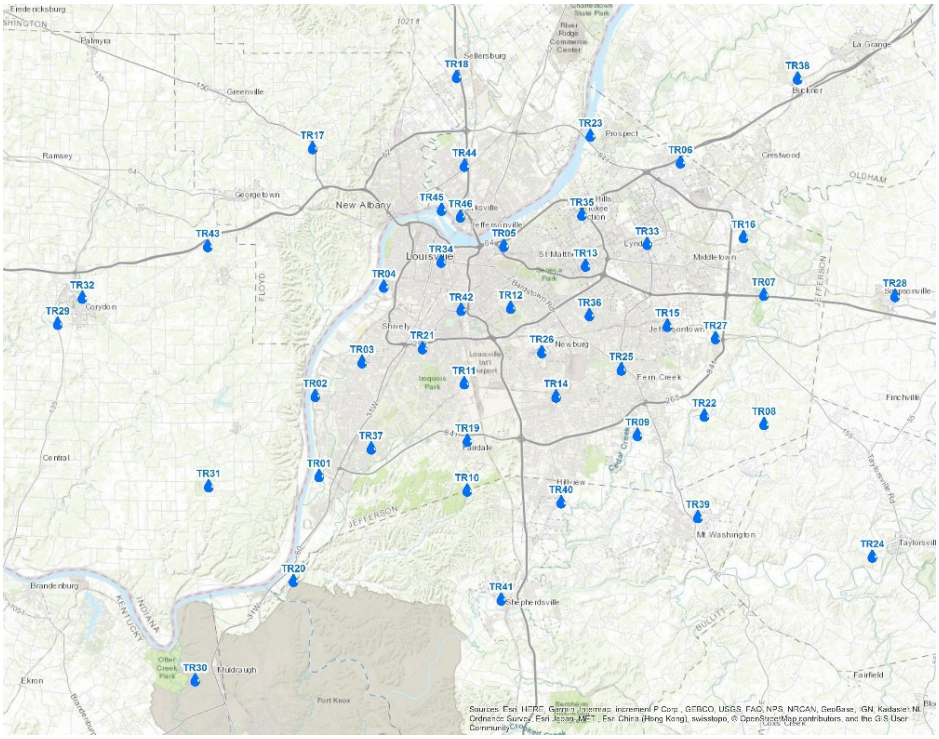
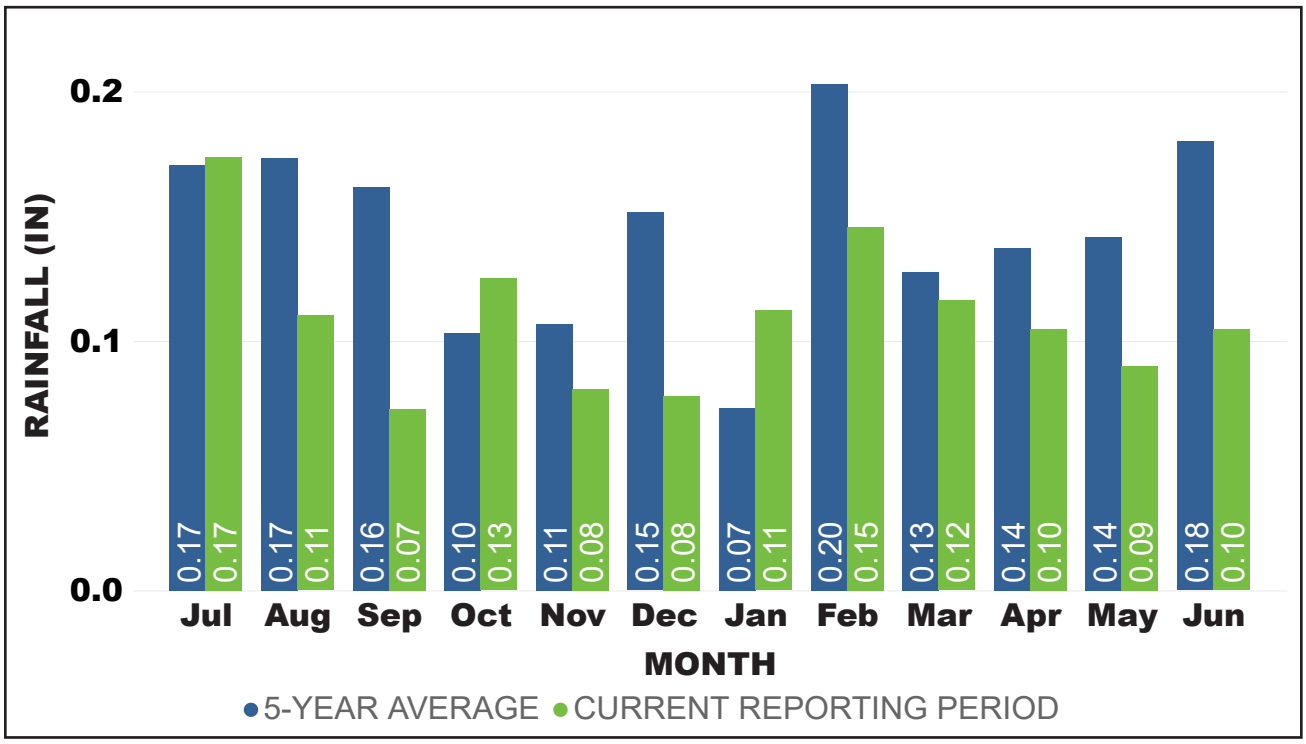


Figure 1.2. Daily Average Rainfall by Month



eight within adjacent Kentucky counties and the remaining 29 are within Jefferson County. MSD plans to continue to expand the rain gauge network as appropriate sites are identified. Figure 1.2 shows the Jefferson County average daily rainfall amounts by month for the reporting period, based on the monthly average of all MSD rain gauges, compared with the average since FY16.

1.3. Authorized Discharges — Wet Weather CSOs

At the end of the reporting period, MSD maintained 98 CSOs in operation. Discharges at permitted CSO locations that are observed during rain events by telemetry only are recorded with MSD's flow monitoring data.

1.3.1. Current Reporting Period

Table 1.1 includes a summary of wet weather CSO discharges that occurred during the current reporting period.

Table 1.1. Wet Weather CSO Discharge Summary - Current Reporting Period

DUE TO	DISCHARGES	VOLUME (MG)
LACK OF SYSTEM CAPACITY	1,631	3,772.22

Refer to Section 1 for a detailed listing of discharges that occurred during the current reporting period.

1.3.2. Cumulative Discharge Reductions

When fully implemented and operational, MSD's suite of wet weather CSO control projects are modeled to achieve 95 percent capture of the wet weather combined sewage generated in the service area during the typical year, which greatly exceeds EPA's Presumption Approach requirement of 85 percent. Compliance with the 85 percent capture will be achieved with completion of the Waterway Protection Tunnel by December 31, 2022. MSD expects to achieve 95 percent modeled performance by December 31, 2026 upon completion of the Morris Forman WQTC Sedimentation Basin Rehabilitation Project per the State Agreed Order Number 150220 Corrective Action Plan. The Annual Average Overflow Volume (AAOV), derived from the InfoWorks CSO hydraulic model, includes the modeled AAOV for the permitted CSOs as currently constructed, and is included as Appendix B.

1.4. Unauthorized Discharges — Wet Weather SSOs

1.4.1. Current Reporting Period

Table 1.2 includes volumes and Table 1.3 includes occurrences of wet weather SSO discharges by cause and fiscal year from FY16 through the current reporting period. Refer to Appendix C for a detailed listing of discharges that occurred during the current reporting period.

1.4.2. Cumulative Discharge Reductions

In 2007, MSD had an estimated 218 modeled SSO occurrences for the 10-year storm event. MSD is required to eliminate all 197 modeled SSOs for the 2-year storm event and mitigate the remaining SSOs. Modeled SSO occurrences are required to be reduced to a level of control (LOC) for the 5-year and 10-year storm events. The modeled reduction is based on projections using current proposed solutions (as of June 30, 2021). Actual projections are subject to change as future projects are designed in detail and constructed. Table 1.6 shows the modeled baseline and reduction in number and volume of SSOs. Figure 1.4 shows the modeled reduction in occurrence and Figure 1.3 shows the modeled reduction in volume of SSOs for the 2-, 5-, and 10-year storm events.

1.5. Unauthorized Discharges — Dry Weather CSOs

Table 1.4 includes volumes and Table 1.5 includes occurrences of dry weather CSO discharges by cause and fiscal year from FY16 through the current reporting period. Refer to Appendix D for a detailed listing of discharges that occurred during the current reporting period.

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Table 1.2. Wet Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods

DUE TO	ELECTRICAL PROBLEMS AT MSD	GREASE BLOCKAGE	LACK OF SYSTEM CAPACITY	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	POWER OUTAGE (LG&E)	PUMPED DUE TO COE MANUAL	PUMPED OVERFLOW	ROOTS	STRUCTURAL FAILURE	SYSTEM UNDERWATER	UTILITY DAMAGED MSD ASSET
FY16	12,700	0	31,642,466	0	0	0	0	4,476,400	55	70,800	0	0
FY17	7,155	0	9,268,768	14,750	0	9,000	0	0	0	1,240	0	0
FY18	40,750	0	54,181,081	13,000	3,600	5,880	0	1,233,600	50,160	50	0	0
FY19	11,500	40	393,155,319	51,075	0	5,700	0	10,000	0	252,225	0	0
FY20	0	0	64,061,104	468,080	0	0	0	2,000	0	316,505	9,999	50,000
FY21	0	0	69,566,430	200	0	0	156,000	0	0	57,705	0	0

Table 1.3. Wet Weather SSO Discharge Occurrence - Historic and Current Reporting Periods

DUE TO	ELECTRICAL PROBLEMS AT MSD	GREASE BLOCKAGE	LACK OF SYSTEM CAPACITY	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	POWER OUTAGE (LG&E)	PUMPED DUE TO COE MANUAL	PUMPED OVERFLOW	ROOTS	STRUCTURAL FAILURE	SYSTEM UNDERWATER	UTILITY DAMAGED MSD ASSET
FY16	2	0	307	0	0	0	0	3	1	5	0	0
FY17	2	0	63	3	0	1	0	0	0	1	0	0
FY18	2	0	190	2	1	2	0	1	2	2	0	0
FY19	1	1	408	5	0	1	0	1	0	6	0	0
FY20	0	0	114	5	0	0	0	1	0	3	1	1
FY21	0	0	158	1	0	0	1	0	0	2	0	0

Table 1.4. Dry Weather CSO Discharge Volume (gal) - Historic and Current Reporting Periods

DUE TO	ELECTRICAL PROBLEMS AT MSD	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET	PUMPED DUE TO COE MANUAL	POWER OUTAGE (LG&E)
FY16	0	0	76,541	0	188,884	0	0
FY17	260,000	0	3,231	0	277,022	0	0
FY18	142,000	0	30,754	210,578,054	26,888,000	0	0
FY19	9,000	42,667	324,090	27,340,197	0	13,680,000	0
FY20	0	0	15,430	0	0	0	0
FY21	0	0	100,000	2,657	25,028	0	1,200,000

Table 1.5. Dry Weather CSO Discharge Occurrence - Historic and Current Reporting Periods

DUE TO	ELECTRICAL PROBLEMS AT MSD	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET	PUMPED DUE TO COE MANUAL	POWER OUTAGE (LG&E)
FY16	0	0	4	0	1	0	0
FY17	1	0	2	0	4	0	0
FY18	1	0	2	2	6	0	0
FY19	1	1	6	5	0	1	0
FY20	0	0	1	0	0	0	0
FY21	0	0	1	1	2	0	1

Table 1.6. Wet Weather SSO Cumulative Reduction Modeled Projection - Summary

YEAR	2-YEAR MODELED OCCURRENCES	2-YEAR MODELED VOLUME (MG)	5-YEAR MODELED OCCURRENCES	5-YEAR MODELED VOLUME (MG)	10-YEAR MODELED OCCURRENCES	10-YEAR MODELED VOLUME (MG)
2007	197	20.82	211	47.69	218	75.39
2021	65	3.73	169	13.44	195	34.51
2034	0	0	137	4.65	178	21.03

Figure 1.3. Wet Weather SSO Cumulative Reduction Modeled Projection - Volume

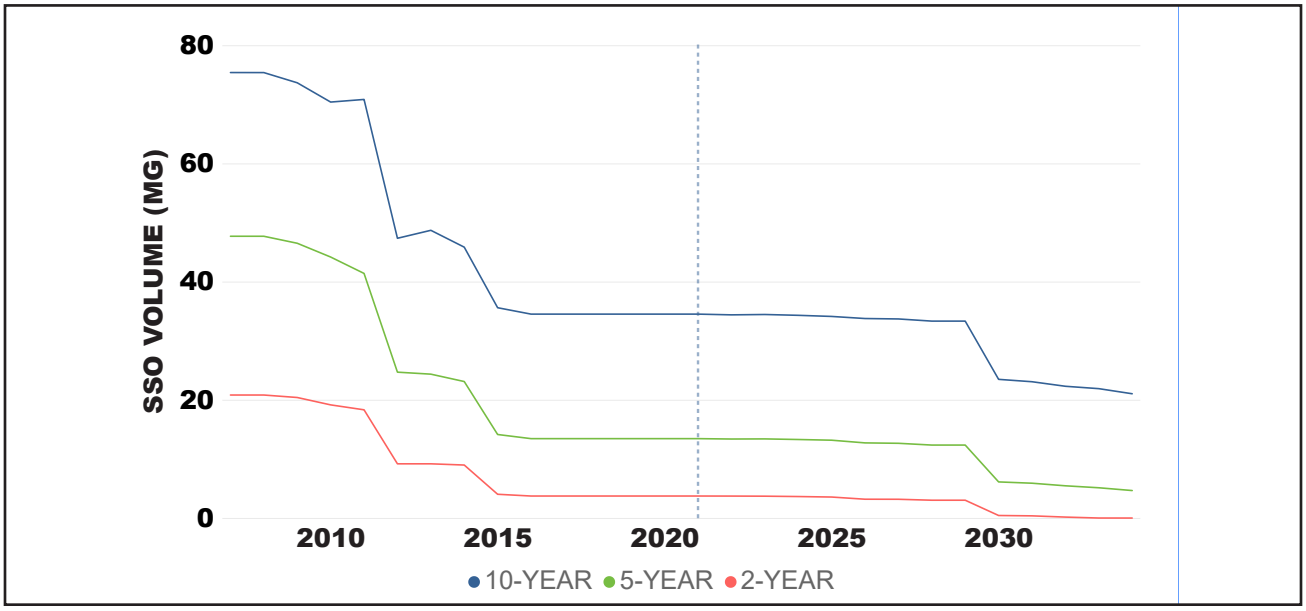
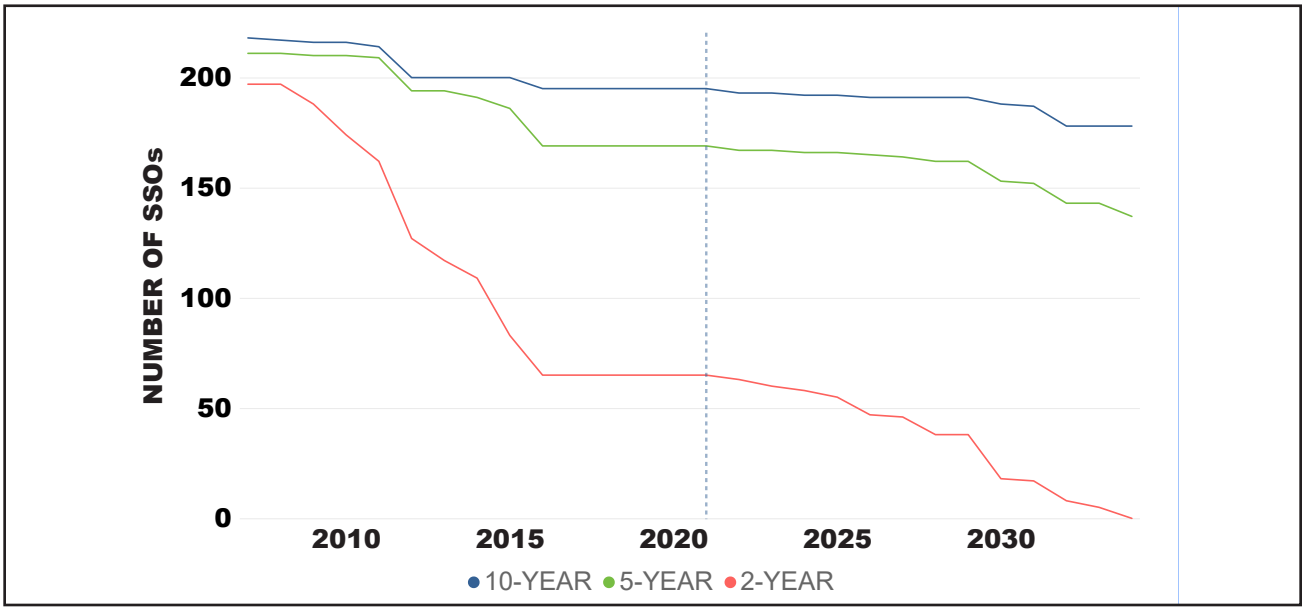


Figure 1.4. Wet Weather SSO Cumulative Reduction Modeled Projection - Occurrences



1.6. Unauthorized Discharges — Dry Weather SSOs

Table 1.7 includes volumes and Table 1.8 ncludes occurrences of dry weather SSO discharges by cause and fiscal year from FY16 through the current reporting period. Refer to Appendix E for a detailed listing of discharges that occurred during the current reporting period.

1.7. Bypasses at Water Quality Treatment Centers

Project WIN Quarterly Report 18 included a memorandum, included as Appendix K in that report, which described the analysis of 44 bypass events that occurred between July 1, 2008, and December 31, 2009. This analysis delineated bypasses into the four categories, including Capacity, External Power Failures, Equipment Failure (Mechanical, Electrical, or Structural), and Human Error. An assessment of bypasses is performed to determine the root cause of each bypass, the failure category, corrective actions to be taken, possible programmatic solutions, and a corrective action completion date.

Table 1.9 includes volumes and Table 1.10 includes occurrences of bypasses by cause and fiscal year from FY16 through the current reporting period. There were no bypasses during the current reporting period, so a detailed listing of bypasses is not included as an appendix.

1.8. Overflows

1.8.1. Wet Interior Overflows

Table 1.11 includes occurrences of wet interior overflows by cause and fiscal year through the current reporting period. Refer to Appendix F for a detailed listing of overflows that occurred during the current reporting period.

1.8.2. Dry Interior Overflows

Table 1.12 includes occurrences of dry interior overflows by cause and fiscal year through the current reporting period. Refer to Appendix F for a detailed listing of overflows that occurred during the current reporting period.

1.8.3. Wet Exterior Overflows

Table 1.13 includes occurrences of wet exterior overflows by cause and fiscal year through the current reporting period. Refer to Appendix G for a detailed listing of overflows that occurred during the current reporting period.

1.8.4. Dry Exterior Overflows

Table 1.14 includes occurrences of dry exterior overflows by cause and fiscal year through the current reporting period. Refer to Appendix G for a detailed listing of overflows that occurred during the current reporting period.

1.9. SSOs per 100 Miles of Sewer

Per the request of EPA, and in keeping with benchmarks from other utilities, MSD has prepared the following analysis of SSOs per 100 Miles of sewer by cause for the reporting period, as well as by year and compared to national benchmarks. The background shading in Figure 1.25 represents benchmarking from other utilities and EPA studies of overflows per 100 miles of sewer. Although overflow occurrences are significantly influenced by rainfall, it is shown that MSD is trending favorably against benchmarks, and efforts documented in this Annual Report are proving effective at reducing overflows.

Table 1.7. Dry Weather SSO Discharge Volume (gal) - Historic and Current Reporting Periods

DUE TO	ELECTRICAL PROBLEMS AT MSD	GREASE BLOCKAGE	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	ROOTS	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET
FY16	100	320	14,730	500	100	664,837	0
FY17	0	100	1,050	5,036	0	157,780	925
FY18	0	150	50	3,590	400	101,007	0
FY19	750	100	7,900	675	600	118,830	13,315
FY20	500	0	350	408	0	1,228,790	8,415
FY21	35	200	300	1,895	0	12,250	24,000

Table 1.8. Dry Weather SSO Discharge Occurrence - Historic and Current Reporting Periods

DUE TO	ELECTRICAL PROBLEMS AT MSD	GREASE BLOCKAGE	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	ROOTS	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET
FY16	1	2	2	1	1	16	0
FY17	0	1	2	7	0	8	3
FY18	0	1	1	4	1	4	0
FY19	1	1	3	5	1	11	2
FY20	1	0	1	2	0	12	2
FY21	1	1	1	9	0	3	1

Table 1.9. Bypass Volume (gal) - Historic and Current Reporting Periods

DUE TO	OVERFLOW - CAPACITY	OVERFLOW - EQ FAIL ELECTRICAL	OVERFLOW - EQ FAIL MECHANICAL	OVERFLOW - EQ FAIL STRUCTURAL	OVERFLOW - HUMAN ERROR	OVERFLOW - POWER FAILURE LG&E
FY16	1,619,415	0	0	210	50,374	8,000
FY17	0	99,000	150,000	0	0	9,177,620
FY18	0	500	0	1,210,000	0	0
FY19	0	9,450,000	0	0	300	0
FY20	0	0	1,150	92,040	0	0

Table 1.10. Bypass Occurrence - Historic and Current Reporting Periods

DUE TO	OVERFLOW - CAPACITY	OVERFLOW - EQ FAIL ELECTRICAL	OVERFLOW - EQ FAIL MECHANICAL	OVERFLOW - EQ FAIL STRUCTURAL	OVERFLOW - HUMAN ERROR	OVERFLOW - POWER FAILURE LG&E
FY16	7	0	0	1	3	1
FY17	0	2	1	0	0	2
FY18	0	1	0	1	0	0
FY19	0	1	0	0	1	0
FY20	0	0	2	1	0	0

Table 1.11. Wet Overlow to the Interior Occurrence - Historic and Current Reporting Periods

DUE TO					
	GREASE BLOCKAGE	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	ROOTS	LACK OF SYSTEM CAPACITY
FY16	0	0	0	5	79
FY17	1	0	0	6	1
FY18	0	0	8	7	22
FY19	2	1	12	7	62
FY20	2	0	3	3	0
FY21	2	0	5	6	10

Table 1.12. Dry Overflow to the Interior Occurrence - Historic and Current Reporting Periods

DUE TO						
	GREASE BLOCKAGE	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	ROOTS	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET
FY16	22	1	20	43	0	0
FY17	18	0	96	155	3	1
FY18	7	0	31	22	3	0
FY19	6	0	17	8	0	0
FY20	5	1	18	8	0	0
FY21	2	0	17	2	0	0

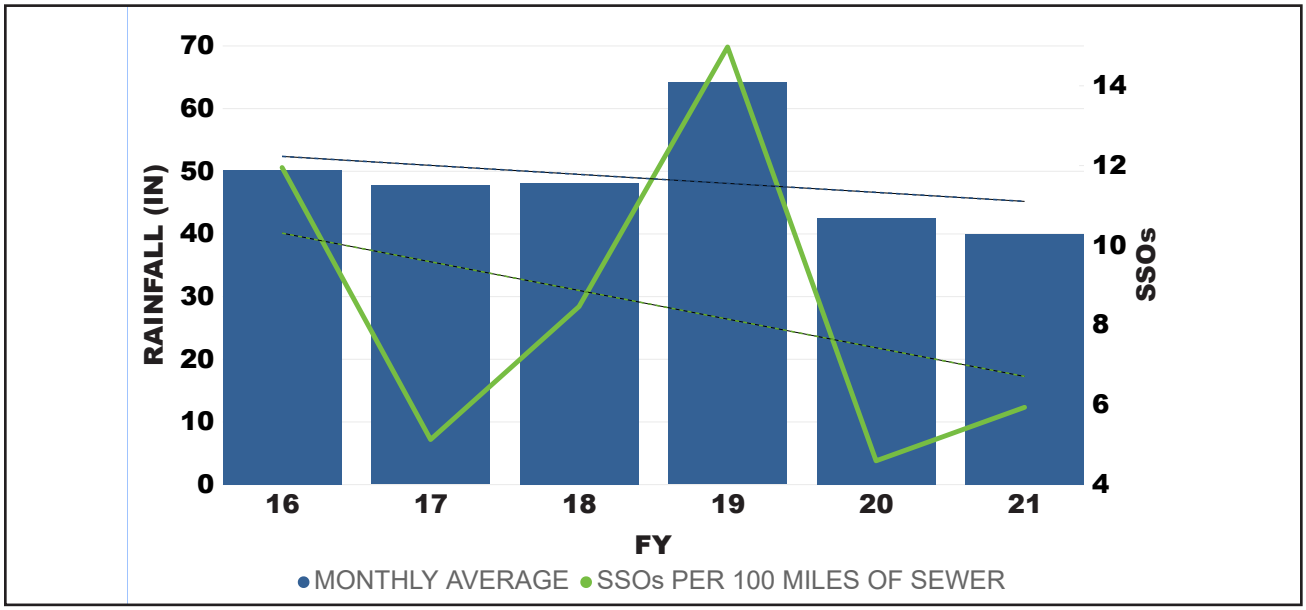
Table 1.13. Wet Overflow to the Exterior Occurrence - Historic and Current Reporting Periods

DUE TO								
	GREASE BLOCKAGE	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	ROOTS	LACK OF SYSTEM CAPACITY	ELECTRICAL PROBLEMS AT MSD	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET
FY16	0	1	0	2	14	0	0	0
FY17	0	0	0	0	4	1	1	0
FY18	1	2	1	3	6	0	1	0
FY19	0	2	2	0	5	0	0	1
FY20	1	1	1	2	2	0	1	0
FY21	0	0	4	0	2	0	2	0

Table 1.14. Dry Overflow to the Exterior Occurrence - Historic and Current Reporting Periods

DUE TO								
	GREASE BLOCKAGE	MECHANICAL FAILURE	OBSTRUCTION-NOT GREASE / ROOTS	ROOTS	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET	ELECTRICAL PROBLEMS AT MSD	PUMPED OVERFLOW
FY16	5	9	11	7	5	2	0	0
FY17	10	5	23	22	9	0	0	0
FY18	5	13	17	6	9	1	0	0
FY19	2	11	7	5	7	0	0	0
FY20	1	3	3	3	7	0	0	0
FY21	2	4	15	1	4	0	1	1

Figure 1.5. SSOs per 100 Miles of Sewer



Section 2: Program Activities for Discharge Abatement Plans

2.1. Integrated Overflow Abatement Plan (IOAP)

As a requirement of the original Consent Decree (CD) and the Amended Consent Decree (ACD), MSD prepared and submitted, for KEEC/EPA review and joint approval, Sanitary Sewer Discharge Plans (SSDP) designed to eliminate Unauthorized Discharges. MSD also prepared and submitted Long Term Control Plans (LTCP), for KEEC/EPA review and joint approval, pursuant to the CSO Control Policy. These plans were submitted under the title of the Integrated Overflow Abatement Plan (IOAP).

MSD developed these Discharge Abatement Plans (DAP) for the elimination of Unauthorized Discharges, the reduction and control of discharges from CSO locations identified in the Morris Forman WQTC Kentucky Pollutant Discharge Elimination System (KPDES) permit, and the improvement of water quality in the receiving waters. MSD prepared conventional and innovative or alternative designs as part of each plan, including but not limited to: sewer rehabilitation, sewer replacement, sewer separation, relief sewers, above ground or below ground storage, high rate Secondary Treatment, illicit connection removal, remote wet weather Secondary Treatment facilities, and other appropriate alternatives. Designs were based on sound engineering judgment and in accordance with generally accepted engineering design criteria and may include interim remedial measures to reduce pollutant loading and improve water quality in the short term while alternatives for final remedial measures are being developed, evaluated and implemented.

In 2021, MSD, KEEC and EPA completed negotiation of the Second Amended Consent Decree (2ACD) to amend, reprioritize and expand upon some of the provisions set forth in the ACD. MSD had completed many of the requirements of the ACD, including construction of 47 of the 63 SSDP projects and construction of 24 of the 25 LTCP projects required under the ACD. The completed projects resulted in preliminary finding of bacterial reductions in the Ohio River and Beargrass Creek watersheds based on water quality monitoring and modeling. However, MSD had spent approximately $1B on CD and ACD implementation, and was experiencing changed circumstances for other assets that KEEC and EPA agreed required additional work to be completed in the system and a reprioritization of the work required under the ACD. The 2ACD requires Additional Early Action Plan (AEAP) projects to remediate the Morris Forman WQTC, nine critical interceptors, and Paddy's Run Flood Pump Station (FPS), and the inclusion of an Asset Management Plan. Because these specific projects were in addition to the projects required under the SSDP and LTCP, the 2ACD also modified schedules for the completion of the few remaining projects under the approved SSDP and LTCP plans, as discussed in the following subsections.

A Gantt chart including progress of all IOAP projects during the reporting period, along with anticipated progress for the upcoming reporting period, can be found in Figure 2.1. The Asset Management Plan is discussed in Section 7: Program Activities for Asset Management.

2.2. Sanitary Sewer Discharge Plan (SSDP)

The Sanitary Sewer Discharge Plan (SSDP) addresses the overflows and unauthorized discharges from the Separate Sewer System (SSS). Multiple plans have been submitted under this program: the Updated Sanitary Sewer Overflow Plan (SSOP), submitted February 10, 2006; the Interim Sanitary Sewer Discharge Plan (ISSDP), approved July 24, 2008; the Final SSDP, approved February 12, 2010; a revised SSDP, approved June 19, 2014; and the most recent revision of the SSDP, approved May 19, 2021, conditioned and effective upon entry of the 2ACD. The approved documents can be viewed on the MSD 2ACD website, available at **msdprojectwin.org**. Discharges associated with SSDP Projects can be found in Appendix H.

The ACD required SSDP projects to be completed by December 31, 2024. Per Paragraph 38.a.(3) of the 2ACD, schedules for any SSDP project cannot extend beyond December 31, 2035. A Gantt chart including progress of SSDP projects during the reporting period, along with anticipated progress for the upcoming reporting period, can be found in Figure 2.1. No projects were certified as completed during the current reporting period. Raintree & Marian Ct 1 - Raintree PS Elimination, is anticipated to be completed during the upcoming reporting period.

2.3. 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). Multiple plans have been submitted under this program: the Interim CSO LTCP (approved February 22, 2007); the Final CSO LTCP (approved February 12, 2010); and the most recent revision of the LTCP, approved May 19, 2021, conditioned and effective upon entry of the 2ACD. The approved documents can be viewed on the MSD Project WIN website, available at **msdprojectwin.org**. Discharges associated with SSDP Projects can be found in Appendix H.

The ACD required LTCP projects to be completed by December 31, 2020. Per Paragraph 38.b.(3) of the 2ACD, schedules for any LTCP project cannot extend beyond December 31, 2022. A Gantt chart including progress of LTCP projects during the reporting period, along with anticipated progress for the upcoming reporting period, can be found in Figure 2.1. The Waterway Protection Tunnel is anticipated to be completed during the upcoming reporting period.

2.4. Additional Early Action Plan Projects

Since entry of the ACD, MSD determined that the conditions and circumstances regarding its assets have changed, thus necessitating the implementation of additional work in order to meet the objectives of the ACD and to achieve the levels of control for CSOs and SSOs set forth in the approved IOAP. Under the 2ACD, MSD is required to implement new projects, including the following:

- Replacement of the Paddy's Run Pump Station by December 31, 2026, with an estimated additional cost of $79M. It is noted that this project is dependent on partnership and cooperation with the US Army Corps of Engineers (USACE), and as such the deadline may be extended.
- Repair and replacement of nine critical interceptors by December 31, 2026, with an estimated additional cost of $70M. The critical interceptor projects include the following:
  - Buechel Trunk Sewer Rehabilitation
  - Harrods Creek Force Main Repair
  - Prospect Phase II Area Sewers Rehabilitation
  - Broadway Interceptor Infrastructure Rehabilitation
  - I-64 & Grinstead Infrastructure Rehabilitation
  - Large Diameter Sewer Rehabilitation
  - Rudd Ave Sewer Infrastructure Rehabilitation
  - Western Outfall Infrastructure Rehabilitation
  - Nightingale Rehabilitation
- Replacement of the Morris Forman WQTC Biosolids Facility by December 31, 2030, with an estimated additional cost of $198M.

A Gantt chart including progress of AEAP projects during the reporting period, along with anticipated progress for the upcoming reporting period, can be found in Figure 2.1. Nightingale Rehab was completed during the reporting period, but has not been certified; it will be certified during the upcoming reporting period. Harrods Creek Force Main Repair is anticipated to be complete during the upcoming reporting period.

2.5. Post-Construction Compliance Monitoring

Within the IOAP, monitoring efforts that support the impact evaluation of both project and plan implementation are discussed in Volume 1, Section 6.3. These efforts are incorporated into MSD's overall environmental data monitoring and management planning and activities, which support various MSD initiatives including operational support, the Municipal Separate Storm Sewer System (MS4) program, hydraulic and water quality modeling, and a range of regulatory reporting and trending requirements. Under the IOAP, the primary compliance assessment objectives will be to certify project completion to the selected overflow control level, both for CSOs and SSOs, to confirm that the CSS performs at a minimum level on a systemwide evaluation, and to confirm that SSOs continue to perform at the minimum level of control for each SSO. As such, post-construction compliance monitoring (PCCM) supports impact analysis and the validation of various objectives of IOAP project initiatives, and the overall abatement plan.

2.5.1. PCCM for SSDP Projects

Due to the nature of SSDP projects having varying levels of control (associated with 2-, 5-, and 10-year cloudburst storms), ensuring effective post-construction performance is important at the project level. It is the intent that performance analyses will be conducted for constructed projects as monitoring data becomes available. To complete this effort and independently assess projects that have been certified to date, MSD has partnered with the University of Louisville Center for Infrastructure Research (UofL) for the majority of the project PCCM evaluations.

MSD begins reporting PCCM results after one year of data is available for analysis, and continues monitoring until three years are documented with no reported overflows. If an overflow occurs that does not meet level of control for the project, an investigation is performed to determine what additional action may be needed. After the remedial measure is completed, MSD monitors for an additional three-year period.

The 2020 ACD Annual Report included a detailed listing of completed IOAP project post-compliance performance status for projects completed through June 30, 2019, with data through June 30, 2020. Since that time, no projects have been completed that would impact PCCM evaluation.

The status of SSDP projects that have not completed the three-year PCCM monitoring period are listed in Table 2.1, including anticipated remedial measures to achieve compliance as needed.

2.5.2. PCCM for LTCP Projects

Because of the interconnectivity of the combined sewer system, a system-wide methodology is necessary for evaluating PCCM within the combined system. It requires a model-based approach to ensure that the certified projects are effective at exceeding 85% capture for treatment or elimination of wet weather flows when compared to pre-IOAP conditions. Consistent with the CSO Policy, the PCCM program will involve flow metering of the collection system and updated hydraulic modeling to confirm achievement of the target percent capture values. Once system performance has been validated, KDOW will coordinate with MSD to transition to a post-LTCP permit that requires continued operation and maintenance of controls necessary to maintain compliance. LTCP projects will be evaluated holistically according to this PCCM methodology when compared to the 85% compliance target. The IOAP projects, when fully implemented, are projected to eliminate or capture for treatment 95% of the wet weather combined sewage generated in the service area, which greatly exceeds the requirement of 85%.

2.5.3. Stream Flow and Water Quality Monitoring

MSD publishes a synthesis report, called "State of the Streams", that summarizes water quality trends based on data MSD collects through its Long-Term Monitoring Network. The latest report is available at **louisvillemsd.org/WaterQuality**. MSD continues to synthesize and trend water quality data in a report as required by the MS4 permit.

2.6. IOAP Activity Schedule

A Gantt chart including progress of IOAP projects during the current reporting period and anticipated durng the upcoming reporting period can be found in Figure 2.1.

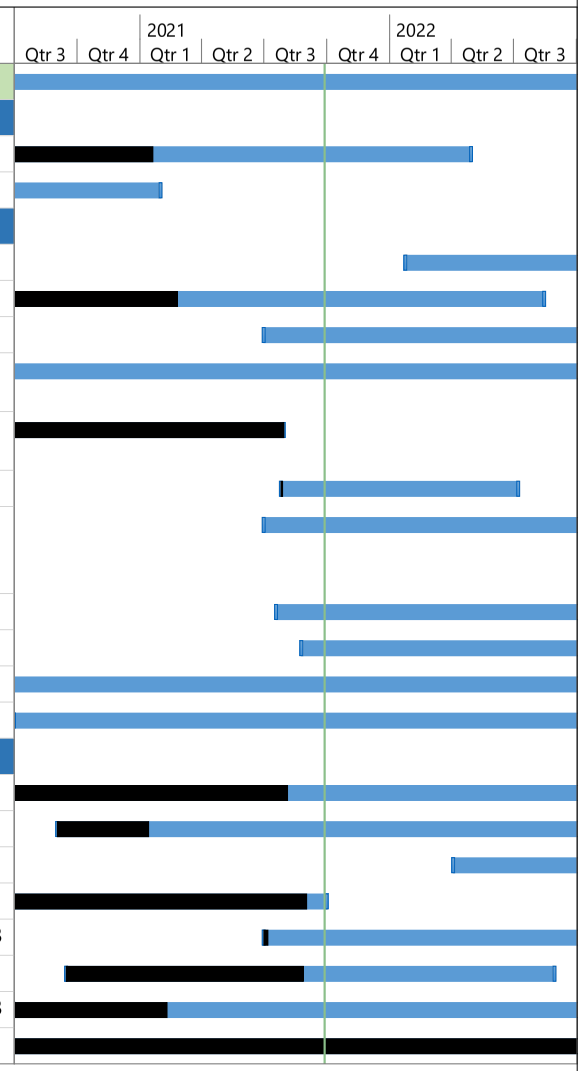
Table 2.1. SSDP PCCM Project Status

DESCRIPTION	CERTIFICATION DATE	STATUS / REMEDIAL MEASURES
Beargrass Interceptor Rehabilitation Ph 2	December 14, 2010	While this is an SSDP project, it is hydraulically impacted by the full implementation of all LTCP projects as outlined in the IOAP, and PCCM will be conducted at the project level concurrent with LTCP PCCM.
Goose Creek PS Improvements & Wet Weather Storage 2 - Devondale Wet Weather Storage	April 15, 2016	Phased project - will be analyzed after completion of Goose Creek PS Improvements & Wet Weather Storage 2 - PS & FM Upgrade.
Lantana #1 PS I/I Investigation & Rehabilitation	December 29, 2011	A revised solution will be developed and implemented.
Mellwood System Improvements and PS Eliminations 1 - Mellwood PS & FM Improvements	December 27, 2012	Phased project - will be analyzed after completion of Mellwood System Improvements and PS Eliminations 2 - Winton Avenue and Mockingbird Valley PS Eliminations.
Middle Fork Relief Interceptor, Wet Weather Storage And UMFPS Diversion 1 - Buechel Basin	December 27, 2013	Phased project - will be analyzed after completion of Middle Fork Relief Interceptor, Wet Weather Storage and UMFPS Diversion 2 - PS Diversion and Storage.
Southeastern Diversion Structure & Interceptor	April 19, 2012	While this is an SSDP project, it is hydraulically impacted by the full implementation of all LTCP projects as outlined in the IOAP, and PCCM will be conducted at the project level concurrent with LTCP PCCM.

Figure 2.1. IOAP Activity Schedule

MSD INTEGRATED OVERFLOW ABATEMENT PLAN IMPLEMENTATION SCHEDULE (01 July 2020 - 30 June 2021)

Budget ID	Task Name	% Complete	ACD Date	Start	Finish
	MSD IOAP ANNUAL SCHEDULE				
	LONG TERM CONTROL PLAN				
H09133	**Waterway Protection Tunnel**	80%	12/31/22	Mon 11/23/15	Sat 4/30/22
GIP	**Green Infrastructure Program**	69%	12/31/20	Tue 10/10/17	Sat 1/30/21
	SANITARY SEWER DISCHARGE PLAN				
H09163	**Little Cedar Creek Interceptor Improvement**	0%	12/31/25	Mon 1/24/22	Tue 7/16/24
H09164	**Idlewood Inline Storage**	47%	12/31/25	Mon 11/18/19	Sun 8/14/22
H09171	**Kavanaugh Rd. PS Improvements**	0%	12/31/25	Thu 7/1/21	Sat 3/2/24
H09179	**Dell Rd and Charlane Pkwy Interceptor Improvements**	0%	12/31/30	Fri 11/1/19	Mon 11/30/26
H09180	**Raintree and Marian Ct 1 - Raintree PS Elimination**	99%	12/31/25	Mon 7/1/19	Thu 7/29/21
H09182	**Monticello PS Elimination**	1%	12/31/25	Mon 7/26/21	Fri 7/8/22
H09188	**Mellwood System Improvements and PS Elimination - Winton and Mockingbird Valley Elimination**	0%	12/31/30	Thu 7/1/21	Sat 10/9/27
H09192	**Cinderella PS Elimination**	0%	12/31/25	Mon 7/19/21	Fri 9/8/23
H09196	**Leven PS Elimination**	0%	12/31/25	Wed 8/25/21	Thu 1/26/23
H09242	**Gunpowder PS Inline Storage**	0%	12/31/25	Thu 8/1/19	Sun 8/27/23
H09200	**Sutherland Interceptor**	0%	12/31/30	Wed 7/1/20	Thu 5/30/30
	EARLY ACTION PLAN				
F18515	**Paddys Run FPS Capacity Upgrade**	34%	12/31/26	Mon 7/1/19	Sat 8/2/25
D18116	**MFWQTC Biosolids Facility Replacement**	6%	12/31/30	Wed 9/2/20	Thu 4/22/27
E17053	**Buechel Trunk Sewer Rehab**	0%	12/31/26	Mon 4/4/22	Mon 1/6/25
A20280	**Harrods Creek Force Main Repair**	95%	12/31/26	Mon 12/2/19	Thu 9/30/21
H16075	**Prospect Phase 2 Rehab**	1%	12/31/26	Thu 7/1/21	Mon 8/14/23
A19208	**Broadway Interceptor Infrastructure Rehab.**	49%	12/31/26	Tue 9/15/20	Tue 8/30/22
H18503	**I-64 and Grinstead Infrastructure Rehab.**	20%	12/31/26	Wed 7/1/20	Mon 7/10/23
A20244	**Large Diameter Sewer Rehabilitation**	99%	12/31/26	Mon 9/16/19	Thu 9/28/23



Data date: 08/31/2021

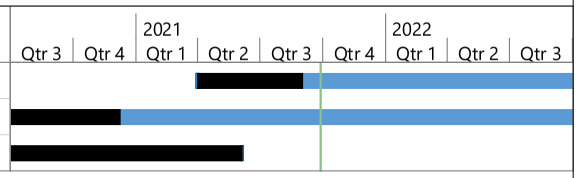
Task — Manual Task — Manual Progress
Summary — Progress

Page 1 of 2

Figure 2.1. IOAP Activity Schedule

MSD INTEGRATED OVERFLOW ABATEMENT PLAN IMPLEMENTATION SCHEDULE (01 July 2020 - 30 June 2021)

Budget ID	Task Name	% Complete	ACD Date	Start	Finish
H21019	**Rudd Avenue Infrastructure Rehab.**	17%	12/31/26	Thu 4/1/21	Fri 10/13/23
H20147	**Western Outfall Infrastructure Rehab.**	11%	12/31/26	Wed 7/1/20	Sun 6/30/24
H16074	**Nightingale Rehab**	100%	12/31/26	Mon 7/2/18	Sat 6/5/21



Data date: 08/31/2021

Task | Manual Task | Manual Progress
Summary | Progress

Page 2 of 2

Section 3: Program Activities for Nine Minimum Controls

Per Paragraph 37.a. of the 2ACD, the Nine Minimum Controls (NMC) Compliance Report was approved by the KEEC/EPA on February 22, 2007. The approved document can be viewed on the MSD Project WIN website, **msdprojectwin.org**. Highlights of NMC program implementation are outlined below.

3.1. NMC 1: Proper Operation and Maintenance Programs

FY21 Reporting Period

- Continued to inspect, maintain and properly operate the CSS pump stations and the Morris Forman WQTC.
- Continued projects to create improved access to selected CSO sites to facilitate cleaning activities.
- Continued to review catch basin areas against the CSS and explored re-alignment to confirm that the 15-month cleaning cycle is achieving regulatory commitments.
- Updated online CSO & Siphon Training modules for MSD Operations Division CSO/NMC staff and Morris Forman WQTC personnel to supplement CSO Field Training.
- Established performance measures and performance for the current reporting period are shown in Table 3.1
  - CSOs and flapgates are inspected weekly. Siphons are inspected monthly. Debris or repair work orders on CSO assets are required to be created the next business day after the inspection, and completed within five business days. Staff shortages due to COVID-19 as well as proximity of some CSOs to areas of civil unrest contributed to failure to achieve this goal.
  - Catch basins within the CSS are scheduled to be cleaned every 15 months. Cleaning totals have been annualized for reporting.

Table 3.1. NMC 1 Performance Measures

ACTIVITY	REQUIRED	COMPLETED	% COMPLETE	GOAL
CATCH BASIN CLEANING	17,850	15,613	87.5%	100.0%
CSO INSPECTIONS	5,157	4,802	93.1%	95.0%
DEBRIS REMOVAL / REPAIR	572	571	99.8%	95.0%
SIPHON INSPECTIONS	605	598	98.8%	95.0%
FLAPGATE INSPECTIONS	1,092	1,035	94.8%	95.0%

- Performed scheduled cleaning and inspection on gravity mains within the CSS, shown in Table 3.2.

Table 3.2. Other NMC 1 Activities Completed

ACTIVITY	LINEAR FEET
CLEANING ACTIVITIES	1,409
CHEMICAL ROOT CONTROL	79
INSPECTION ACTIVITIES	170,779

FY22 Reporting Period

- Continue cleaning and inspection programs, and reporting on programmatic implementation goals.
- Continue implementation of field verification efforts to determine operation and maintenance enhancements to be incorporated into annual training.

- Review the CSO inventory schematics and revise as necessary.
- Update the CSO characterization sheets to reflect the updated and calibrated hydraulic model.
- Incorporate the results of the annual field investigation to adjust and enhance the annual CSO Field Training modules.
- Schedule and conduct the annual CSO Field Training with the MSD Operations Division CSO/NMC staff and Morris Forman WQTC personnel.
- Continue to review catch basin areas against the CSS and explored re-alignment to confirm that the1 5-month cleaning cycle is achieving regulatory commitments.

3.2. NMC 2: Maximization of Storage in the Collection System

3.2.1. Real Time Control (RTC) Optimization

FY21 Reporting Period

- Continued operation of Phase 1, 2, and 3 of the RTC system. Approximately 6,023.58 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 Appendix I for a detailed report.
- Continued review of CSOs upstream of Morris Forman WQTC, and noted that flow through the plant is optimized prior to overflows occurring.
- Continued to implement the wet weather standard operating procedures (SOPs) 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.
- Continued to monitor and evaluate the performance of the RTC system against operational objectives and issue updates to configurations and site tuning as necessary to improve performance of the recently integrated facilities and Csoft 4.
- Prepared a draft master programming guide for RTC facilities to document existing programming and parameters at each facility as a reference to ensure long term continuity of the RTC system.
- Updated to the master RTC SOP manual based on comments received and continued preparation of the Rowan PS SOP.
- Prepared a detailed RTC startup guide for the Portland CSO Basin and worked remotely with MSD to implement the startup procedures and incorporate the basin into the RTC system.
- Reviewed tags for the Logan CSO Interceptor and began updating Csoft configurations to integrate the instruments into RTC.
- Began development of an RTC flood mode for facilities along the Ohio River influenced by high river levels to ensure safe operations under RTC control during these conditions and reduce the need for manual operation of the storage basins.

FY22 Reporting Period

- Continue monitor system operability in the automated mode and refine the local site tuning of RTC facilities as needed based on performance during varying rain events.
- Continue implementing RTC SOPs and validating operations.

- Design improvements to the SWOR1 facility to enable increasing the maximum level set point.
- Continue preparing the Rowan Pump Station SOP in advance of integrating the facility into RTC.
- Continue reviewing and updating the master programming and Modules guide.
- Continue developing the RTC flood mode for facilities along the Ohio River influenced by high river levels.

3.2.2. Storage Optimization

The main objective of the RTC performance assessment is to determine whether the available flow and storage capacities within the system are utilized to their optimal potential. MSD staff continues to review and prioritize strategies for performance improvement.

FY21 Reporting Period

- Completed installation and integration of a flow meter between the Main Diversion Structure (MDS) and the Morris Forman WQTC to improve monitoring of flow from the MDS.
- The RTC consultant provided recommendations for improvements to the Southwest Outfall Retention #1 (SWOR1) facility to enable setpoint increases that will allow a larger volume of in-line storage during rain events.
- Identified a variety of improvements related to operating the Southwestern Parkway CSO Basin under RTC. These included:
  - Identified instances when the Southwestern Parkway CSO Basin failed to switch from dewatering mode to fill mode. MSD investigated and adjusted a timer in the PLC programming to prevent the basin becoming stuck in the flush mode.
  - Evaluated means to provide redundant flow rate data for Gates 3 and 7 at the Southwestern Parkway CSO Basin to allow dewatering to occur when flow meters are out of service or invalid. This effort included identifying spare wires and conduits to enable installation of redundant level meters at Gate 7 and prepared an equation-based flow calculation based on flow depth data and levels at downstream CSO locations to account for backwater conditions.
  - Identified undesirable oscillation of Gates 4 and 87 and tuned the control loops to improve gate response.
  - Identified and removed unnecessary linkages in local programming related to communication failures triggered by invalid dewatering instrumentation data that prevent automated filling of the Southwestern Parkway CSO Basin.
- Revised the Csoft configuration for the Southern Outfall Retention facility (SOR1) to maintain a constant downstream level at the MDS inflatable gate independent of other gate movements at the MDS facility and increased the gate deadband to reduce gate movements and improve stability of downstream levels and flow to the Morris Forman plant.
- Identified oscillation of the SOR1 gates related to the rate of rise rule and began developing adjustments to improve the response to rapid rise in levels.
- Initiated a review of gate operations at the SOR1 facility to identify the cause of excessive gate movements, actuator failures, and excessive stem nut wear to identify modes of failure and develop improvements that will increase reliability of gates and actuators.
- Began implementing revised tag transfer protocols, enabling most RTC data to bypass iFix and be directly gathered from MSD's Industrial Gateway Server (IGS) OLE for Process Control server to improve reliability of the tag data transfer process and deployed a Csoft update to accommodate the longer IGS TAG names.

- Began recalibrating the MDS Gate 1 flow-under-the-gate equation using flow data from the related downstream flow meter to improve low-flow calculated values.
- Began implementing a real time validation routine for level instrumentation at the MDS and SOR1 facilities to improve the reliability of RTC data and proactively identify maintenance issues.
- Identified programming inconsistencies that cause a critical alarm associated with a regulator dysfunction at Logan CSO Basin and the Southwestern Parkway CSO Basin due to interceptor surcharging and identified adjustments to eliminate the false alarms.
- Identified early dewatering of the Portland CSO Basin not in line with RTC inputs and began review of programming to identify cause.
- Began developing standard procedures for production of CSO and storage-related tables for used by MSD to report information and identifying improvements to related calculations for incorporation into the Hydroweb dashboard. Implemented improved volume calculation for storage basins in the Hydroweb dashboard.
- Began working with new rainfall and forecast provider, Vieux, to transfer rainfall data and weather prediction with extended horizon to the RTC system.

FY22 Reporting Period

- During the next reporting period, MSD staff and the RTC consultant will continue to implement hardware, software, and set-point changes as applicable on a site-by-site basis.
- Continue to refine the local site tuning of RTC facilities as needed based on performance during varying rain events.
- Continue to improve and automate operations of the facilities integrated into the system.
- Continue development of the Hydroweb dashboard.
- Continue evaluating and begin implementation of means to provide redundant flow rate data for Gate 3 and 7 at the Southwestern Parkway CSO Basin to allow dewatering under RTC control to occur when flow meters are out of service or invalid.
- Deploy the real time validation routine for level instrumentation at the MDS and Southern Outfall Retention 1 facilities to improve RTC data and identify maintenance issues.
- During the next reporting period, MSD staff and the RTC consultant will continue to implement hardware, software, and set-point changes as applicable on a site-by-site basis.
- Continue to refine the local site tuning of RTC facilities as needed based on performance during varying rain events.
- Continue to improve and automate operations of the facilities integrated into the system.
- Continue development of the Hydroweb dashboard.
- Continue evaluating and begin implementation of means to provide redundant flow rate data for Gate 3 and 7 at the Southwestern Parkway CSO Basin to allow dewatering under RTC control to occur when flow meters are out of service or invalid.
- Deploy the real time validation routine for level instrumentation at the MDS and Southern Outfall Retention 1 facilities to improve RTC data and identify maintenance issues.

3.3. NMC 3: Review and Modification of Pretreatment Requirements

FY21 Reporting Period

- Completed FY21 NMC 3 Trunk Sewer Water Quality Data Collection in September 2020. Finalized pollutants of concern (POCs) and trunkline sewer data (contributory to CSOs) for FY21 Dry Weather Sampling Result Report. Reviewed and evaluated FY20 trunk sewer data against prior trunk sewer data to determine if changes in pollutants warrant review of contributory Non-Domestic Dischargers (NDDs). Determined POCs and trunkline sewer (contributory to CSOs) dry weather sampling strategy for FY22. Prepared a report to document the findings and recommendations resulting from sampling efforts.

- Continued to send wet weather alerts to NDDs of concern prior to rain events, reminding them of their commitment to implement voluntary controls during wet weather events. During this reporting period, the MSD service area experienced 72 measurable rain events and 58 events with only trace rainfall. MSD sent email notices to NDDs 68 times prior to precipitation events. The email notices contain information regarding expected precipitation expected for a one- to four-day period. There are currently nine NDDs that voluntarily implement controls during wet weather by alternating their cleaning schedule and/or by storing wastewater during a rain event.

- Continued to track performance measures to quantify the effectiveness of voluntary controls during wet weather events. The pollutant loading kept out of the CSS per typical rain event in previous fiscal years has been quantified with the data from the wet weather logs submitted by NDDs and is shown in Table 3.3. The typical results of pollutants kept out of the CSS when all NDDs participate are presented Table 3.3, quantified based on the actual rain events when NDDs detained their flow or otherwise reduced their discharge.

Table 3.3. Voluntary Controls During Wet Weather Events

PERFORMANCE MEASURE	NUMBER OF NDDS PARTICIPATING	NUMBER OF WET WEATHER DAYS	VOLUME (GAL)	BOD (LBS)	TSS (LBS)
Typical Pollutants Kept Out of the CSS Per Rain Event	8	NA	427,000	2,300	1,340
Total Quantity FY21	8	72	23,607,000	104,000	84,000

- Continued to include specific NMC 3-related language, as appropriate, in new and reissued wastewater discharge permits to facilities located in the CSS, as well as in all Unusual Discharge Requests (UDRs) approved for discharge to the CSS. MSD reissued 22 wastewater discharge permits to users discharging to or immediately upstream of the CSS. There were 26 UDRs processed for discharges to Morris Forman WQTC in FY21. The UDRs included 19 locations in the CSS and 7 locations in the SSS which ultimately discharge to Morris Forman WQTC. To avoid the risk of an overflow occurring, UDR permits contain standard condition requirements which restrict discharges into the collection system when wet weather conditions are expected.

- Conducted one NMC 3 site inspection at an NDD facility as part of the permit renewal process.

- Conducted twenty-one NMC 3 site inspections at Industrial User facilities not currently in the formal NMC 3 program as part of the initial permitting or permit renewal process. These facilities were found to have little to no impact during rain events. MSD elected not to request implementation of voluntary controls by these facilities at this time because of the limited benefit to be gained. MSD heightened the understanding of the CSS operation during wet weather for these industries during the inspections.

- Continued to include hold and release requirements in permits for all new industrial users in the combined sewer system and for existing industrial customers that expand production in the combined sewer system. The volume and duration of each hold and release requirement were determined through use of MSD's hydraulic model. MSD applied this requirement to two permits during the reporting period. MSD also documented which permitted industries have 'hold and release' permit requirements.
- Continued to seek out green infrastructure opportunities at NDDs discharging to the CSS and documented the permitted industries that use green infrastructure to reduce flow contributions during wet weather.
- Documented which NDDs have ceased operation during the reporting period.
- Reviewed improvements made to the combined sewer system infrastructure and the potential impact on the NMC 3 program. Updated CSS flows from the most recent calibrated hydraulic model.

FY22 Reporting Period

- Complete FY22 NMC 3 Trunk Sewer Water Quality Data Collection effort. Compare FY22 trunk sewer data against prior trunk sewer data to determine if changes in pollutants warrant review of contributory NDDs.
- Determine POCs, NDDs (based on historical data), and trunkline sewers (contributory to CSOs) for FY22. Review NDDs (based on historical data) to identify those that may be removed from the program, as well as any that may need to be added. Prepare a file report to document the findings and recommendations resulting from FY22 NMC 3 trunk sewer collection data.
- Continue to send wet weather alerts to NDDs of concern prior to rain events, reminding them of their commitment to implement voluntary controls during wet weather events.
- Continue to include specific NMC 3 related language, as appropriate, in new and re-issued wastewater discharge permits to facilities located in the CSS, as well as in all Unusual Discharge Requests approved for discharge to the CSS.
- Conduct NMC 3 site inspections at Industrial User permitted facilities not currently in the formal NMC 3 program as part of the permit renewal process.
- Discuss NMC 3 program participation at each annual site inspection for Industrial Users who are currently in the NMC 3 program.
- Track performance measures to monitor the effectiveness of the implementation of NMC 3 within the Pretreatment Program.
- Review new industrial users and existing industrial users with increased discharges in the combined sewer system to determine if hold and release requirements need to be added into their permits. Continue to document which permitted industries have hold and release permit requirements. Continue to document which permitted industries use green infrastructure to trade off for their 'hold and release' program.
- Document which NDDs have ceased operation and quantify the impact/reduction on CSS operation.
- Continue to review improvements made to the combined sewer system infrastructure and their potential impact on the NMC 3 program. Consider updated flows from the most recent calibrated hydraulic model. Some CSS improvements may result in changes to the ongoing NMC 3 program. Document the changes and impacts in a memo to the file.
- Conduct staff training on implementation of the NMC 3 program.

3.4. NMC 4: Maximization of Flow at the Morris Forman Water Quality Treatment Center

3.4.1. Capital Projects

NMC capital project schedules for the current and upcoming reporting periods are provided in Figure 3.4.

3.4.2. Morris Forman WQTC Performance

- Continued to maximize flow to the Morris Forman WQTC. Charts that compare plant flow at the Morris Forman WQTC with the occurrence of CSOs at the MDS and the Southwestern PS are included in Appendix J. Refer to Figure 3.1 for location of the CSOs closest to Morris Forman WQTC.
- The Final Effluent PS was in service 65 days during the reporting period.
- Morris Forman WQTC experienced plant violations throughout the reporting period due to continuing failure of the solids handling equipment and the limited availability of alternate solids disposal. Morris Forman WQTC compliance from FY16 through the current reporting period is included in Table 3.4

Figure 3.1. CSO Locations Relative to Morris Forman WQTC

Table 3.4. Morris Forman WQTC Permit Compliance

FY	EXCEEDANCES	MONTHS COMPLIANT
FY16	11	7
FY17	31	4
FY18	53	1
FY19	60	0
FY20	69	0
FY21	14	9

3.4.3. Wet Weather Capture

Historically, the long term trend continues to show that MSD has increased the amount of wet weather flow diverted at the Morris Forman WQTC. The wet weather capture is the difference between the annual average flow treated and the base wastewater flow (defined in state regulations as the lowest monthly average day flow during the calendar year). CY 2021 (through June 30) shows a significant increase in base flow compared to CY2020, as seen in Figure 3.2. Overall, the long-term base flow trend is decreasing. The increasing trend in wet weather capture is largely attributed to a combination of capital improvements within the Morris Forman WQTC service area, implementation of RTC facilities in the CSS, and construction and integration of CSO control basins into the RTC system.

Figure 3.2. Morris Forman WQTC Wet Weather Capture Trend

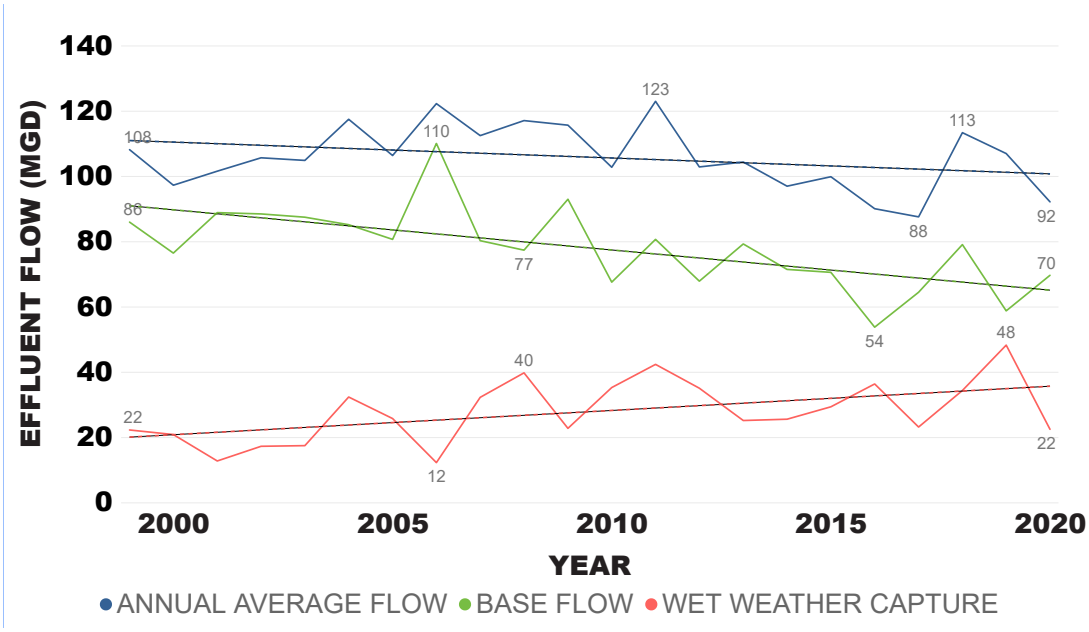
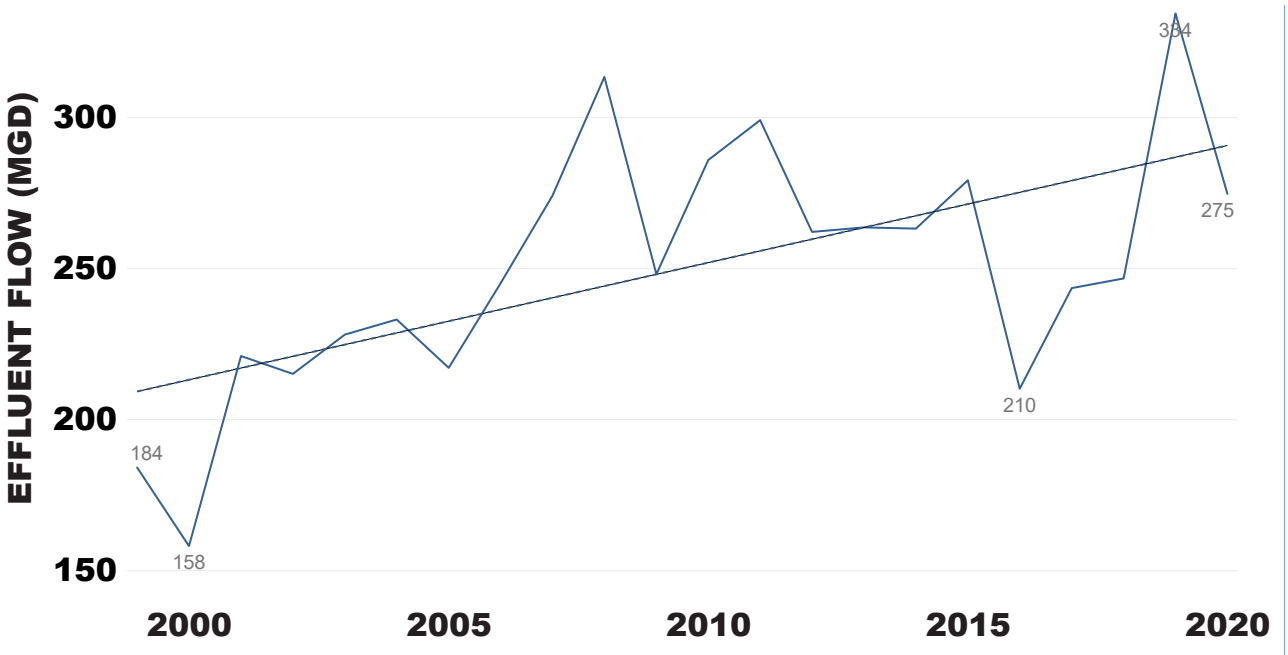


Figure 3.3. Morris Forman WQTC Peak Daily Flow



The long term trend in the peak daily flow treated at the Morris Forman WQTC also shows improvement, as shown in Figure 3.3. However ,during the reporting period, MSD experienced a failure of the biosolids handling system that resulted in permit noncompliance. Each data point represents the maximum daily flow treated during the year. Although the instantaneous peak hydraulic capacity of the Morris Forman WQTC is 350 MGD, the sustained flow that can be treated on a daily basis is governed by a number of other factors, including the performance of the biological treatment processes. While individual years are highly variable due to weather impacts, the long-term trend continues to be up. Factors contributing to this long-term positive trend are implementation of the new wet weather SOP and better wet weather process control at the Morris Forman WQTC. However, CY16 through CY18 show decreases in peak daily flow, as recent repair work has reduced the ability

of the plant to operate at high flow for extended periods. MSD is currently in the process of design and construction of emergency projects that will mitigate permit noncompliance issues.

3.5. NMC 5: Elimination of Combined Sewer Overflows during Dry Weather

FY21 Reporting Period

- Continued updates of the U.S. Army Corps of Engineers (USACE) Flood Operations and Maintenance Manual to reflect changes in operations that have occurred with the IOAP projects and operational SOP improvements. This will be an ongoing task until all the projects in the IOAP are completed and an ongoing task as NMC programmatic activities are completed.
- Monitored flood pump stations (FPS) for opportunities to pump trapped flow back into the combined sanitary sewer system to avoid dry weather overflows as a result of operation of the flood protection system from the 34th Street, Starkey and 4th Street FPSs. This practice and inspection have been put into place and is accomplished from the associated floodgate in-service work order located in-line with the related CSOs.
- Performed evaluations of dry weather unauthorized discharges to the WUS, with emphasis on the CSS, to determine causes and to determine if there is a need for corrective activities.
- Performed inspection and cleaning of fats, oils and grease (FOG) Focus Areas within the CSS, in accordance with Capacity Management, Operations and Maintenance (CMOM) commitments.

FY22 Reporting Period

- Continue to implement additional operational modifications at FPSs within the CSS to prevent dry weather overflows. Discussions with the USACE to continue regarding proposed modifications to these pumping stations that will minimize dry weather CSOs due to high river levels. This will be an ongoing activity until all the IOAP projects are completed and as staff implements programmatic NMC activities.
- Continue to review SOPs for the FPSs to reflect ongoing operational changes that occur as capital projects and NMC programmatic activities are completed.
- Perform a quarterly evaluation of dry weather overflows to the WUS, with emphasis on the CSS, to determine causes and to determine if there is a need for corrective activities.
- Perform inspection and cleaning of FOG focus areas within the CSS, in accordance with CMOM commitments.

3.6. NMC 6: Control of Solids and Floatable Materials in Combined Sewer Overflows

FY21 Reporting Period

- Continued to monitor and document performance of the CSO108 S&F Control Continuous Deflection Separator (CDS) operation in accordance with the Memorandum of Understanding (MOU) with the Kentucky Nature Preserve (KNP). Copies of the semi-annual CSO108 efficacy report have been provided in quarterly reports for the reporting period (January and July). Beginning in FY22, they will be included as an appendix of the 2ACD Annual Report.
- Continued to review new S&F technologies for potential incorporation into the program.
- Continued inspection and maintenance procedures for the S&F structures as part of the weekly CSO inspections and PM cleaning routines, outlined under NMC 1. During the reporting period, 683 work orders were issued for debris removal at the S&F structures.

- Continued working with staff to determine the quantity of debris and floatables captured by catch basin cleaning, at the Headworks of the Morris Forman WQTC, and at the end of line S&F controls. Reports have been developed to capture the amount of material removed through catch basin cleaning and at the end of the line S&F controls. Results for the reporting period are shown in Table 3.5.

FY22 Reporting Period

- Continue to monitor and document performance of the CSO108 S&F structure operation in accordance with the MOU with the KNP by MSD crews. Reports will be submitted to KNP on January 30 and July 30 and included as an appendix to subsequent 2ACD Annual Reports.
- Continue to review new S&F technologies for potential incorporation into the program.
- Continued inspection and maintenance procedures for the S&F structures as part of the weekly CSO inspections and PM cleaning routines, outlined under NMC 1.

Table 3.5. Debris Removed from System

SOURCE	DEBRIS REMOVED (TONS)
Catch Basin & Sewer Cleaning	866.1
Morris Forman WQTC Headworks	1,402.3

- Track the volume of S&F materials removed from the CSS.
- Develop revised process to track S&F removal at CSO basins.
- Review and refine S&F control operations and maintenance training and administer to appropriate staff.
- Perform CSO S&F Efficacy assessments for approximately 15 CSOs including pre- and post-storm site visits to determine where S&F control devices could be improved or replaced.

3.7. NMC 7: Pollution Prevention Programs to Reduce Contaminants in Combined Sewer Overflows

FY21 Reporting Period

- Continued administration of the Erosion Prevention and Sediment Control (EPSC) Ordinance. Continued use of a tracking system for EPSC Notices of Violation (NOVs) and Field Correction Notices (FCNs) within the CSS.
- Continued administration of the Hazardous Materials Ordinance, which requires users with hazardous materials on site to submit a spill prevention and control plan. Continued response to spills of hazardous materials and incidents involving discharges to the sewer system and provided spill mitigation kits to the Louisville Metro Fire Department to use to absorb vehicle fluids rather than flushing to the sewer.
- Continued issuance of Wastewater Discharge Permits under the Industrial Pretreatment Program.
- Distributed literature to significant industrial users (SIUs) on best management practices for prevention of pollution.
- Continued coordination of activities performed by Louisville Metro, such as street sweeping, Operation Brightside (trash and litter clean-up), and other Metro pollution prevention programs.
- Promoted Green Infrastructure initiatives within Jefferson County, such as guidance on downspout disconnection and rain garden installation.

- Continued to prepare and distribute informational pieces, targeted to inform customers and residents on activities that can be practiced within their homes to assist in the reduction of overflows within the collections system.
- Continued to enhance and train on Stormwater Pollution Prevention Plans (SWPPPs) for the WQTCs, major pump stations, and the Central Maintenance Facility (CMF).
- Continued enhancement of the framework for the IOAP green infrastructure program tracking in IPS.
- Utilized and distributed the rain garden handbook to Louisville Metro agencies and to the public in order to encourage green infrastructure.
- Partnered with the Urban Homesteading Class of Louisville Grows for a rain garden workshop. MSD demonstrated the steps to plan, build, and maintain a rain garden, and covered native plant characteristics. MSD provided all attendees with a native seed packet.
- Assisted a science class at Fern Creek High School with a second round of native plantings in a rain garden that was designed and built by the students to address a drainage issue.
- Discussed water quality topics with students at the Canoemobile event, Including what impacts the CSS can have on receiving waterways, and how they can improve water quality through behavior change.
- Partnered with Louisville Metro Council District 21 (Nicole George), Louisville Grows, Louisville Metro's Division of Community Forestry, and Brightside to plant 167 trees in the Iroquois and Southside neighborhoods.
- Coordinated two trash pick-ups in Middle Fork Beargrass Creek in association with the 319 Grant for watershed planning.

FY22 Reporting Period

- Continue daily inspections and documentation for EPSC NOVs, FCNs, and all enforcement activities within the CSS with an inspection web application for FCNs.
- Continue inspection hazardous materials from facilities. Continue issuance of Wastewater Discharge Permits under the Industrial Pretreatment Program. Continue distribution of literature to SIUs on best management practices for prevention of pollution.
- Utilize and distribute the rain garden handbook to Louisville Metro agencies and to the public in order to encourage green infrastructure.
- Continue to track green infrastructure projects and initiatives in IPS and SharePoint.
- Continue to prepare and distribute informational pieces, targeted to inform customers and residents on activities that can be practiced within their homes to assist in the reduction of overflows within the collection system.
- Continue planning for rain garden and stream health workshops.

3.8. NMC 8: Public Notification

Refer to Section 6: Program Activities for Public Outreach, Education, Notification and Participation for information regarding public notification.

3.9. NMC 9: Monitoring to Characterize Combined Sewer Overflow Impacts and the Efficacy of Combined Sewer Overflow Controls

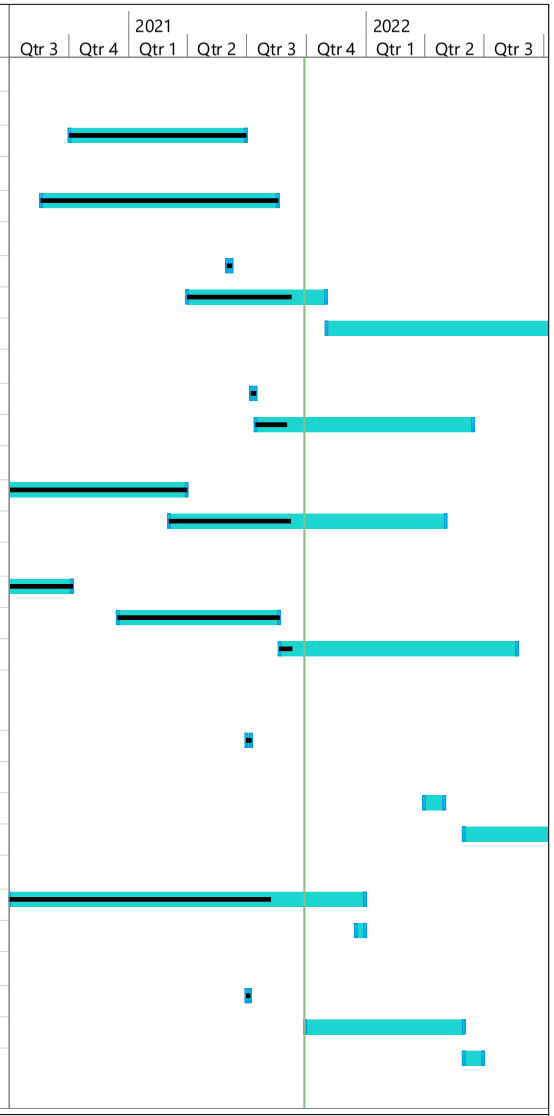
Refer to Section 2.5. Post-Construction Compliance Monitoring for information regarding system monitoring.

3.10. NMC Activity Schedule

A Gantt chart including progress of NMC projects during the reporting period can be found in Figure 3.4.

Figure 3.4. NMC Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
	MSD NMC Annual Commitments Schedule	44%	Mon 3/12/18	Sun 12/7/25
A19208	**Broadway Interceptor Infrastructure Rehab.**	100%	Fri 10/2/20	Wed 6/30/21
A19208	CONSTRUCTION	100%	Fri 10/2/20	Wed 6/30/21
A20244	**Large Diameter Sewer Rehab.**	100%	Mon 9/16/19	Wed 8/18/21
A20244	DESIGN	100%	Wed 8/19/20	Wed 8/18/21
A21241	**26th Street Sewer Repair Emergency**	54%	Thu 4/1/21	Sat 1/28/23
A21241	INITIATION & PROCUREMENT	100%	Tue 6/1/21	Mon 6/7/21
A21241	CONSTRUCTION	75%	Thu 4/1/21	Sun 10/31/21
A21241	CLOSEOUT	0%	Mon 11/1/21	Sat 1/28/23
C22053	**7th St Community Gardens**	14%	Thu 7/8/21	Fri 8/19/22
C22053	INITIATION & PROCUREMENT	100%	Thu 7/8/21	Wed 7/14/21
C22053	DESIGN	14%	Wed 7/14/21	Mon 6/13/22
D15020	**MFWQTC Cake Pump Phase II**	82%	Mon 3/12/18	Tue 5/3/22
D15020	CONSTRUCTION	100%	Fri 11/1/19	Wed 3/31/21
D15020	CLOSEOUT	44%	Thu 3/4/21	Tue 5/3/22
D15024	**MFWQTC Chiller Replacement**	60%	Fri 4/27/18	Sun 8/21/22
D15024	DESIGN	100%	Thu 8/29/19	Tue 10/6/20
D15024	CONSTRUCTION	100%	Tue 12/15/20	Fri 8/20/21
D15024	CLOSEOUT	5%	Sat 8/21/21	Sun 8/21/22
D18156	**MFWQTC Service and Blower Building Structural Repairs**	1%	Thu 7/1/21	Tue 4/11/23
D18156	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
D18156	DESIGN	0%	Sat 1/15/22	Wed 3/16/22
D18156	CONSTRUCTION	0%	Mon 2/14/22	Sun 5/1/22
D18156	CLOSEOUT	0%	Tue 5/31/22	Tue 4/11/23
D18453	**FY21 MFWQTC Equipment RR**	71%	Wed 7/1/20	Thu 12/30/21
D18453	INITIATION & PROCUREMENT	74%	Wed 7/1/20	Thu 12/30/21
D18453	CLOSEOUT	0%	Thu 12/16/21	Thu 12/30/21
D18454	**FY22 MFWQTC Equipment RR**	2%	Thu 7/1/21	Thu 6/30/22
D18454	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
D18454	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
D18454	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22



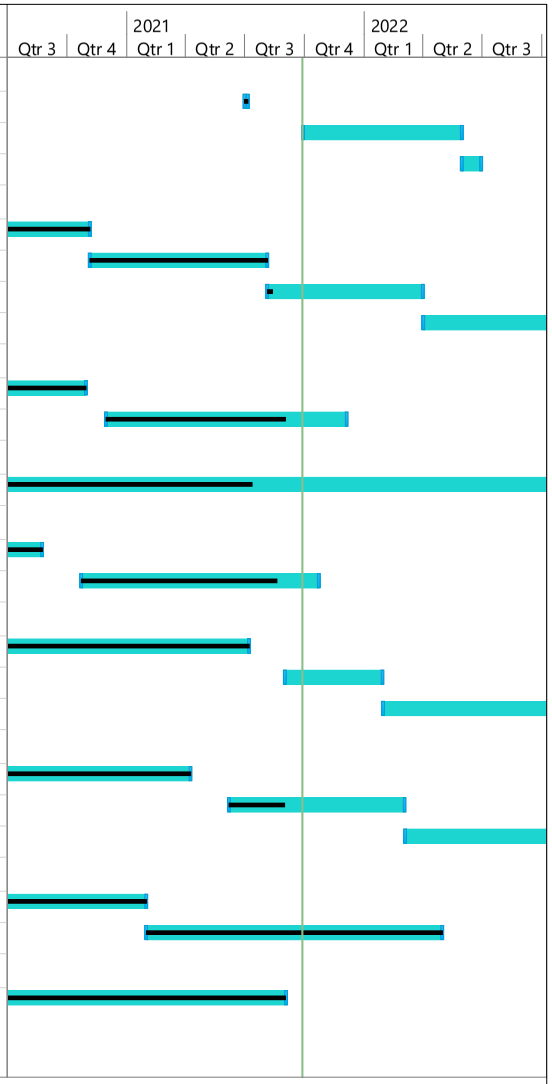
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 1

Figure 3.4. NMC Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
D18473	**FY22 MFWQTC Other Facilities Repairs**	2%	Thu 7/1/21	Thu 6/30/22
D18473	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
D18473	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
D18473	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
D19048	**MSD Radio Repeaters**	33%	Mon 7/2/18	Mon 5/1/23
D19048	INITIATION & PROCUREMENT	100%	Mon 7/2/18	Thu 11/5/20
D19048	DESIGN	100%	Thu 11/5/20	Thu 8/5/21
D19048	CONSTRUCTION	4%	Thu 8/5/21	Thu 3/31/22
D19048	CLOSEOUT	0%	Fri 4/1/22	Mon 5/1/23
D19307	**MFWQTC FEPS VFD Replacement**	88%	Mon 4/1/19	Sat 12/4/21
D19307	CONSTRUCTION	100%	Tue 11/26/19	Fri 10/30/20
D19307	CLOSEOUT	74%	Mon 11/30/20	Sat 12/4/21
D20012	**SGC RTC Enhancements**	26%	Tue 11/19/19	Mon 10/20/25
D20012	DESIGN	41%	Tue 2/18/20	Sat 7/22/23
D20167	**MFWQTC East Headworks HVAC**	91%	Sat 6/1/19	Sat 10/23/21
D20167	CONSTRUCTION	100%	Mon 2/17/20	Mon 8/24/20
D20167	CLOSEOUT	82%	Fri 10/23/20	Sat 10/23/21
D20223	**Bells Lane WWTF Polymer Dosing System Upd**	47%	Mon 11/4/19	Fri 3/31/23
D20223	DESIGN	100%	Fri 11/22/19	Thu 7/8/21
D20223	CONSTRUCTION	0%	Wed 9/1/21	Sat 1/29/22
D20223	CLOSEOUT	0%	Sun 1/30/22	Fri 3/31/23
D20224	**Bells Lane PAA System**	41%	Tue 7/23/19	Thu 5/4/23
D20224	DESIGN	100%	Tue 10/1/19	Thu 4/8/21
D20224	CONSTRUCTION	32%	Mon 6/7/21	Fri 3/4/22
D20224	CLOSEOUT	0%	Sat 3/5/22	Thu 5/4/23
D20228	**MFWQTC Centrifuge Replacement**	100%	Sat 7/13/19	Sun 5/1/22
D20228	EQUIPMENT REPLACEMENT	100%	Sun 9/1/19	Sun 1/31/21
D20228	CLOSEOUT	100%	Sun 1/31/21	Sun 5/1/22
D20231	**FY20 MFWQTC FEPS Pump and Motor Repair**	99%	Mon 7/1/19	Thu 9/2/21
D20231	CLOSEOUT	99%	Tue 3/31/20	Thu 9/2/21



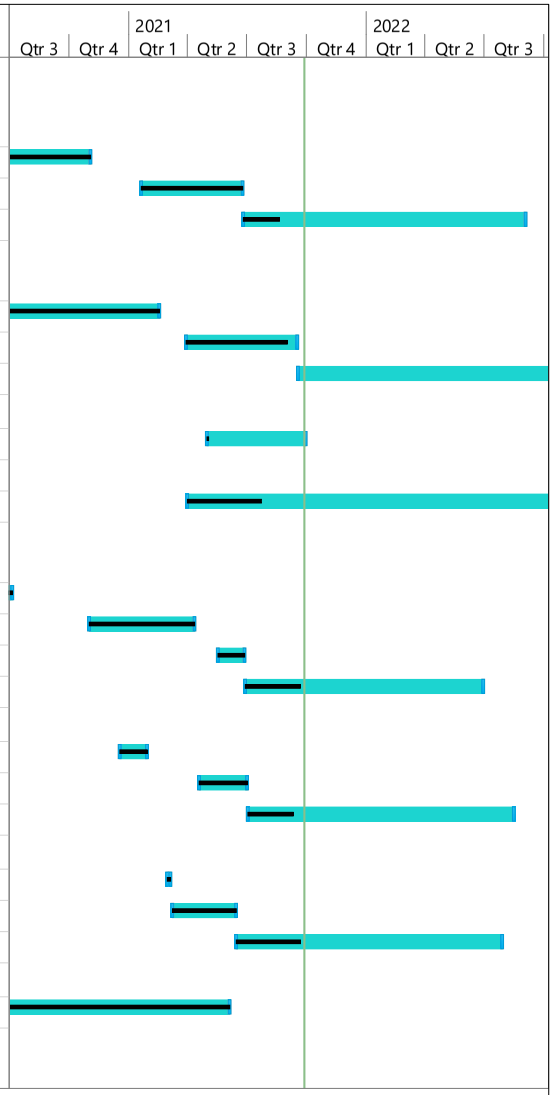
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 2

Figure 3.4. NMC Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
D20304	**MFWQTC Headworks and Dumpster Building Structural and Primary Blower Building Stair Repairs**	54%	Sun 9/1/19	Sat 9/3/22
D20304	DESIGN	100%	Sat 2/15/20	Tue 11/3/20
D20304	CONSTRUCTION	100%	Wed 1/20/21	Fri 6/25/21
D20304	CLOSEOUT	13%	Sat 6/26/21	Sat 9/3/22
D20314	**MFWQTC Sewer and Manhole Condition Assessment and Repair**	48%	Sun 2/16/20	Thu 11/17/22
D20314	DESIGN	100%	Wed 2/26/20	Wed 2/17/21
D20314	CONSTRUCTION	90%	Tue 3/30/21	Fri 9/17/21
D20314	CLOSEOUT	0%	Sat 9/18/21	Thu 11/17/22
D21237	**MFWQTC Secondary Clarifiers Repairs**	2%	Thu 4/1/21	Sun 12/7/25
D21237	INITIATION & PROCUREMENT	1%	Sat 5/1/21	Thu 9/30/21
D21237	DESIGN	0%	Fri 10/1/21	Wed 8/31/22
D21237	CONSTRUCTION	10%	Thu 4/1/21	Wed 5/15/24
F21061	**Clifton Heights Storage Basin Sump Pump Improvements**	49%	Wed 7/1/20	Thu 6/30/22
F21061	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Mon 7/6/20
F21061	DESIGN	100%	Sun 11/1/20	Mon 4/12/21
F21061	CONSTRUCTION	100%	Tue 5/18/21	Mon 6/28/21
F21061	CLOSEOUT	23%	Tue 6/29/21	Thu 6/30/22
F21153	**SWPS Influent Gate Seal Replacement**	35%	Thu 12/17/20	Mon 8/15/22
F21153	DESIGN	100%	Thu 12/17/20	Thu 1/28/21
F21153	CONSTRUCTION	100%	Mon 4/19/21	Fri 7/2/21
F21153	CLOSEOUT	17%	Sat 7/3/21	Mon 8/15/22
F21202	**SGC Emergency**	38%	Mon 3/1/21	Fri 7/29/22
F21202	INITIATION & PROCUREMENT	100%	Mon 3/1/21	Fri 3/5/21
F21202	EMERGENCY WORK	100%	Tue 3/9/21	Tue 6/15/21
F21202	CLOSEOUT	24%	Tue 6/15/21	Fri 7/29/22
H16074	**Nightingale Rehab**	56%	Mon 7/2/18	Mon 10/3/22
H16074	CONSTRUCTION	100%	Fri 12/13/19	Sat 6/5/21
H16074	CLOSEOUT	0%	Sun 6/6/21	Mon 10/3/22



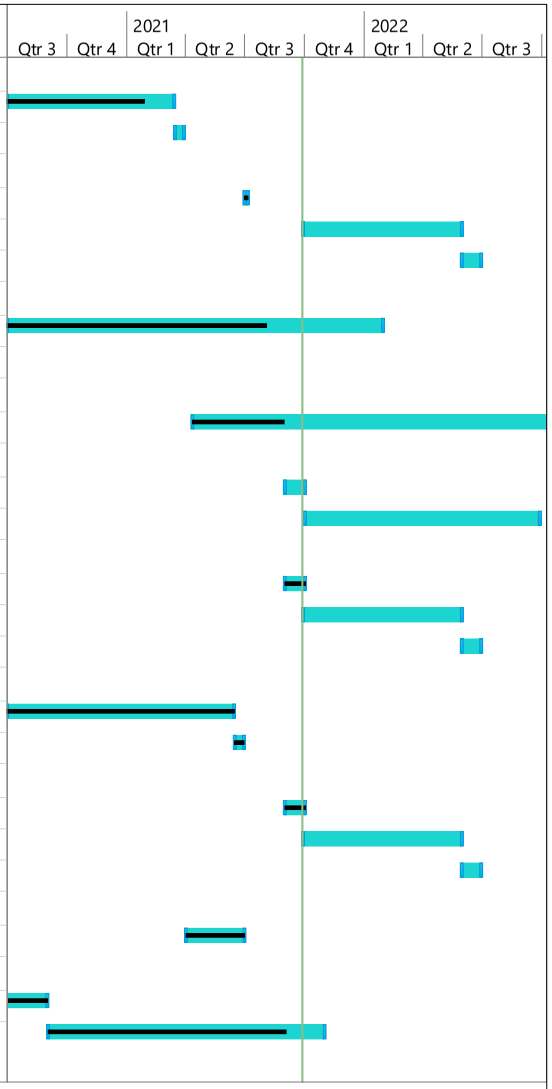
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 3

Figure 3.4. NMC Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
H17020	**FY21 NMC Support**	82%	Wed 7/1/20	Tue 3/30/21
H17020	INITIATION & PROCUREMENT	82%	Wed 7/1/20	Mon 3/15/21
H17020	CLOSEOUT	0%	Tue 3/16/21	Tue 3/30/21
H18013	**FY22 NMC Support**	2%	Thu 7/1/21	Thu 6/30/22
H18013	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H18013	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H18013	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H18443	**FY21 NMC RTC**	69%	Wed 7/1/20	Sun 1/30/22
H18443	INITIATION & PROCUREMENT	69%	Wed 7/1/20	Sun 1/30/22
H18443	CLOSEOUT	0%	Sun 1/30/22	Sun 1/30/22
H18503	**I-64 and Grinstead Infrastructure Rehab.**	17%	Mon 4/12/21	Mon 7/10/23
H18503	CONSTRUCTION	17%	Mon 4/12/21	Mon 7/10/23
H19034	**FY22 Envl Data Collection - MS4 and IOAP**	0%	Wed 9/1/21	Wed 9/28/22
H19034	INITIATION & PROCUREMENT	0%	Wed 9/1/21	Fri 10/1/21
H19034	CLOSEOUT	0%	Sat 10/2/21	Wed 9/28/22
H19116	**FY22 NMC RTC**	2%	Wed 9/1/21	Thu 6/30/22
H19116	INITIATION & PROCUREMENT	100%	Wed 9/1/21	Fri 10/1/21
H19116	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H19116	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H20048	**FY21 NMC CSO Inspection Cameras**	100%	Wed 7/1/20	Wed 6/30/21
H20048	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 6/15/21
H20048	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
H20049	**FY22 NMC CSO Inspection Cameras**	1%	Wed 9/1/21	Thu 6/30/22
H20049	INITIATION & PROCUREMENT	100%	Wed 9/1/21	Fri 10/1/21
H20049	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H20049	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H20147	**Western Outfall Infrastructure Rehab.**	11%	Fri 4/2/21	Sun 6/30/24
H20147	DESIGN	100%	Fri 4/2/21	Thu 7/1/21
H20153	**SWPS Flood Repair**	92%	Tue 6/4/19	Mon 11/1/21
H20153	CONSTRUCTION	100%	Sun 3/1/20	Tue 9/1/20
H20153	CLOSEOUT	86%	Wed 9/2/20	Mon 11/1/21



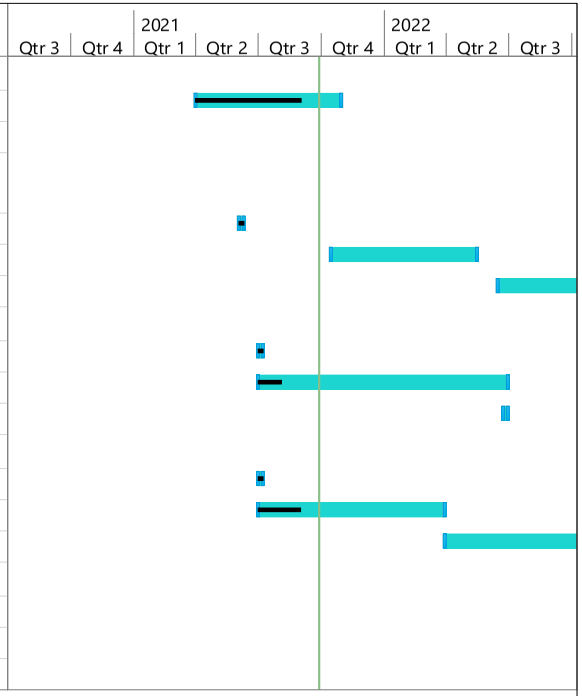
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 4

Figure 3.4. NMC Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
H21019	**Rudd Avenue Infrastructure Rehab.**	17%	Thu 4/1/21	Fri 10/13/23
H21019	DESIGN	72%	Thu 4/1/21	Sat 10/30/21
H21019	CONSTRUCTION	0%	Mon 11/1/21	Fri 10/13/23
H22014	**MFWQTC Groundwater Monitoring and Well Repair**	0%	Thu 6/3/21	Fri 4/12/24
H22014	INITIATION & PROCUREMENT	100%	Thu 6/3/21	Wed 6/9/21
H22014	DESIGN	0%	Fri 10/15/21	Mon 5/16/22
H22014	CONSTRUCTION	0%	Wed 6/15/22	Thu 4/13/23
H22017	**Regional Biosolids Management Study**	10%	Thu 7/1/21	Thu 6/30/22
H22017	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
H22017	DESIGN	9%	Thu 7/1/21	Thu 6/30/22
H22017	CLOSEOUT	0%	Thu 6/23/22	Thu 6/30/22
H22022	**SGC Gate Replacements**	9%	Thu 7/1/21	Thu 3/30/23
H22022	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
H22022	CONSTRUCTION	23%	Thu 7/1/21	Wed 3/30/22
H22022	CLOSEOUT	0%	Wed 3/30/22	Thu 3/30/23
H22038	**Sneads Branch Pump Replacement**	0%	Tue 9/7/21	Thu 9/28/23
H22038	INITIATION & PROCUREMENT	100%	Tue 9/7/21	Tue 9/7/21
H22038	DESIGN	0%	Fri 10/1/21	Fri 3/18/22
H22038	CONSTRUCTION	0%	Sun 4/17/22	Fri 12/2/22



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NMC Project

Project Progress

Percent complete is calculated based on phase duration.

Page 5

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Section 4: Program Activities for Capacity Management, Operations and Maintenance

4.1. Capacity Management Operations and Maintenance Program Activities

4.1.1. Management Programs

Per Paragraph 37.b. of the 2ACD, the CMOM Self-Assessment Report was approved by the KEEC/EPA on August 21, 2006. The approved document can be viewed on the MSD 2ACD website, **msdprojectwin.org**. Highlights of CMOM program implementation are outlined below.

4.1.1.1. Table of Organization

M-A-1 Organizational Chart

The Louisville MSD Organizational Chart is updated every quarter. See Appendix F for the latest version.

M-A-2 Relationship to Other Departments

FY21 Reporting Period

- Carried 717.4 approved positions at the beginning of the reporting period and 744 approved positions at the end of the reporting period. This is an increase of 26.5 positions.
- Carried 63 vacant positions at the beginning of the reporting period and 81 vacant positions at the end of the reporting period.
- Utilized services of executive recruiter to find qualified candidates to fill specialty and senior/mid/upper management positions critical to the success of the ACD.

FY22 Reporting Period

Continue to hire qualified staff to fill vacant positions, including specialty and senior/mid/upper management positions critical to the success of the ACD.

4.1.1.2. Training Programs

This section describes MSD's Training Programs. The goal of this section is to ensure employee growth and workplace safety through mandatory training (both initial and ongoing), conference and seminar attendance, certification, accurate record keeping of employee training, and incentives such as pay, promotions and ability to work. All training programs promote MSD's fundamental mission, goals, and policies.

M-B-1 Technical Training

M-B-2 Skills Training

M-B-3 Safety Training

FY21 Reporting Period

Training for the current reporting period is summarized in Table 4.1.

- Conducted Administrative Training sessions including such topics as New Employee Orientation, Project Management, Leadership, Records Retention, Crew Management, Supplier Diversity Procurement Procedures, and Ethics.

- Conducted Collections System training sessions including such topics as Sewer Overflow Response Protocol, Erosion Prevention & Sedimentation Control, Stormwater Pollution Prevention Plans (SWPPP) Training, Combined Sewer Overflow (CSO) & Siphon Preventative Maintenance, Sewer Cleaning, and Construction Blueprints.
- Conducted Reporting training sessions including such topics as Power BI, Telog, Budget Software and eB basics.
- Conducted Equipment training primarily including heavy equipment that enables employees to maintain and operate the collections system, pump stations and treatment plants. Examples include training on mini-excavators, sewer cleaners, cranes, forklifts and backhoes.
- Conducted Wastewater Operations training focusing on knowledge and skills related to wastewater treatment process and control, including sampling, Louisville Green Management System training, and Wastewater Lab Certification Preparation.
- Conducted Safety training in such areas as Traffic Control, Hearing Protection, Confined Space Entry, Blood Borne Pathogens, Hazmat, Lock Out/Tag Out, and Competent Person training for trenching and excavation.

Table 4.1. Training Program

TRAINING TYPE	SESSION	HOURS
Administrative	413	400
Collections System	221	261
Equipment	307	1023
Reporting	73	41
Safety	432	594
Wastewater Operations	307	314

FY22 Reporting Period

- Continue to increase access to digital training and resource materials for collection system and wastewater treatment employees.
- Continue development of enhanced Fleet mechanic training program.
- Continue to develop competent and capable employees through technical and skills training related to job duties.
- Continue to implement employee performance-based goals as part of annual appraisal process and utilize performance results to identify additional training needs.
- Continue to train employees on MSD Standard Safety Procedures.
- Develop processes to better link organizational goals to individual employee goals.

4.1.1.3. Safety Programs

This section describes MSD's Safety Programs. The goal of this section is to eliminate on-the-job injuries. MSD's Safety Programs include safety committees, confined space entry procedures, district wide safety policies, traffic management, lock out/tag out procedures, and proper use of safety equipment.

M-C-1 Safety Committee

FY21 Reporting Period

- Conducted quarterly meetings with the Safety Committee. This Committee includes representatives from across the Operations Division, including Treatment, Collections System, and Drainage and Flood Protection representatives.
- Performed random job site inspections on Drainage/Sanitary crews, and inspections at all MSD facilities.

FY22 Reporting Period

- Continue Safety Committee meetings to perform inspections and review policy and incidents. Address safety concerns presented by safety committee members.
- Continue to improve safety culture with quarterly meetings of the CMF Safety Committee, Treatment Safety Committee, Flood Protection Committee and Collections Safety Committee. Maintain a focus on safety culture that includes all personnel.
- Continue to perform random job site inspections on Drainage/Sanitary crews, inspections at Morris Forman WQTC, and quarterly inspections with Operations of WQTCs and flood & viaduct pump stations.

M-C-2 Confined Space Entry

FY21 Reporting Period

- Conducted training and monitoring procedures on confined space entries in order to maintain compliance with 29 CFR 1910.146. Health and Safety personnel has spot-checked confined space entries to determine compliance with company procedure.
- Maintained entry equipment and personal protective equipment to provide for safe entry conditions and to maintain compliance with 29 CFR 1910.146.
- Contracted with vendor to conduct annual inspections on confined space entry equipment such as tripods, wenches, and harnesses.
- Continued to advise personnel on the purchase of multi-gas monitors to replace older models that will no longer be maintained or manufactured.
- Continued to assess confined space monitor calibration status and purchase calibration gas for the six calibration stations.
- Revised the calibration station software to remove chlorine and sulfur dioxide from the monthly calibration program, due to their removal from the operational processes at the treatment plants.
- Purchased new monitors in Collections to meet the existing needs of personnel.

FY22 Reporting Period

- Continue to administer training and monitor procedures on confined space entry in order to maintain compliance with 29 CFR 1910.146. Health and Safety personnel will spot-check confined space entries to determine compliance with company procedure.
- Continue to ensure that all “Permit Required Confined Spaces” are properly labeled in Operations.
- Continue to advise personnel on the purchase of multi-gas monitors to replace older models that will no longer be maintained or manufactured.

- Continue to assess confined space monitor calibration status and purchase calibration gas for the six calibration stations.
- Utilize Confined Space trainer to train employees on entries under controllable conditions.

M-C-3 General Safety Procedures

FY21 Reporting Period

- Established various general safety procedures based on both 1910 & 1926 OSHA regulations, input from internal personnel, and on the specific needs of the district in order to maintain regulatory compliance and provide safe working procedures for employees.
- Conducted Emergency Response Team (ERT) fire drills and tornado drills at the Main Office, CMF and Morris Forman WQTC.
- Conducted 8-hour refresher training on hazardous materials for the ERTs.
- Conducted fire extinguisher training district-wide.
- Conducted annual audiograms district-wide.

FY22 Reporting Period

- Continue to conduct training with employees on the new OSHA Hazardous Communications Standard to include Globally Harmonized Systems for material safety data sheets and container labeling.
- Continue to assess the need to update existing procedures and/or create new procedures as conditions and regulatory requirements dictate.
- Continue to conduct 8-hour refresher training on hazardous materials for the ERTs and other required safety sensitive positions.
- Continue to conduct fire extinguisher training district-wide.
- Continue to conduct fire and tornado drills.
- Continue to conduct annual audiograms district-wide.
- Continue Monthly Safety Day Training as a refresher for safety topics.
- Schedule 40-hour HAZ-MAT Technician Level training for newly hired employees as needed based on hiring demands.
- Replace current Safety Data Sheets in the MSDS Pro database with updated safety data sheets compliant with the Globally Harmonized System (GHS) standard.
- Continue required safety orientations with contractors to ensure compliance with MSD & KYOSHA regulations and promote a strong safety culture.
- Continue to review and update the MSD Confined Space, Trenching, LOTO and Fall Protection Safety Programs.

M-C-4 Traffic Management

FY21 Reporting Period

- Purchased and maintained traffic control equipment to reduce hazardous operational exposure.

- Provided training on traffic control on all job sites and as employees are hired or as employee job duties require.

FY22 Reporting Period

- Continue traffic control training for employees to ensure continued compliance with MSD standards.
- Inspect and replace traffic control equipment regularly to ensure compliance with safety standards.
- Conduct traffic control audits of job sites in streets and roadways.

M-C-5 Lock Out/Tag Out

FY21 Reporting Period

- Maintained and communicated enhanced lock out/tag out procedures to employees as required by the OSHA Control of Hazardous Energy standard.
- Continued to developed lock out/tag out procedures as equipment was added or replaced, or as processes were changed.
- Conducted an inspection of all treatment facilities to determine the number of machine-specific procedures.

FY22 Reporting Period

- Continue to implement lock out/tag out, machine-specific procedures as equipment is added or replaced, or as processes are changed.
- Work with staff at Morris Forman WQTC to train on new machine specific procedures. These SOPs will be available through IPS and eB for improved accessibility.
- Getting new LOTO equipment ordered for all MSD staff to coordinate with the new policy.

M-C-6 Safety Equipment

FY21 Reporting Period

- Continued to review and provide required personal protective equipment to employees.
- Conducted NFPA 1852 required annual testing and maintenance for self-contained breathing apparatus respirators.

FY22 Reporting Period

- Maintain safety related equipment or replace the equipment per governing policies or as the need arises.
- Continue purchasing additional equipment for confined space, fall protection, trenching and Hazardous Materials.
- Explore options for more comfortable safety equipment to maintain employee adherence to safety policies and procedures.

M-C-7 Performance Measures

FY21 Reporting Period

- Maintained compliance with OSHA standards.

- Ensured that appropriate staff attended mandatory training on trench excavation safety, confined space, first aid, hazmat response and fire extinguisher usage.
- Safety / worker compensation performance measures for MSD employees are detailed in Table 4.2.

Table 4.2. Safety Incidents and Worker Compensation Claims

PERFORMANCE MEASURE	RESULT
Days Worked (8 Hours)	152,319
Safety Incidents	89
Incidents per Days Worked	0.0006
Worker Comp Claims	23
Worker Comp Claims per Days Worked	0.0002
Days Off due to Work-Related Issues	314
Days Off due to Work-Related Issues per Days Worked	0.0021

FY22 Reporting Period

- Maintain field inspections as discussed under M-C-1 Safety Committee to reduce the number of incidents.
- Continue to improve compliance with NFPA 70E and the GHS standard as discussed under M-C-3 General Safety Procedures.
- Continue to foster a strong culture of workplace safety.

4.1.1.4. Utility Information Management Systems

This section describes MSD's Utility Information Management System. The goal of this section is to produce quality information regarding sewer system performance. MSD's Utility Information Management System supports the following programs: management, operations, maintenance, complaint management, and performance indicators.

M-D-1 Management Information Management Systems

M-D-2 Operations Information Management Systems

M-D-3 Maintenance Information Management Systems

M-D-4 Complaint Management and Tracking Information Management Systems

M-D-5 Performance Indicators

FY21 Reporting Period

- Utilized a wide variety of software to operate the day to day business activities associated with wastewater collections, conveyance and treatments. The major Utility Information Management applications are shown in Table 4.3
- Deployed and tested ArcGIS Enterprise 10.8.1 Development tier.
- Migrated single-instance Oracle geodatabase to multi-instance, replicated Oracle Enterprise Geodatabase.
- Upgraded all LOJIC desktop and web applications to ArcGIS 10.6.1.
- Acquired Spring 2021 LiDAR, 3-inch orthoimagery for Jefferson, Oldham, Bullitt Counties.
- Completed upgrade and cloud migration of IPS to 11.2.

Table 4.3. Utility Information Management Applications

UTILITY INFORMATION MANAGEMENT (UIM) APPLICATIONS
AssetWorks
CC&B
Csoft 4
eB/Alim
EGIS
GIS
GPS
GraniteNet
InfoMaster Sewer
InfoWorks
InfoWorks ICM
IPS
LabWorks
LINKO
Optimatics
Power BI
SAP
SCADA
Sharepoint
Telog

- Performed Project WIN web site facelift.
- Continued LOJIC deployment and testing of new ArcGIS Enterprise 10.6.1 architecture.
- Acquired FAA drone pilot certification.
- Completed enterprise class reporting to SSRS from Crystal Reports.
- Completed move of disaster recovery data center to a co-located, enterprise-grade data center in Tennessee..
- Completed upgrade of telecommunications network at Morris Forman wastewater treatment facility.
- Implemented two-factor authentication for remote user access.
- Completed network re-design to improve network resiliency and redundancy across multiple MSD locations including our data centers.

FY22 Reporting Period

- Complete deployment of LOJIC ArcGIS Enterprise 10.8.1 and Enterprise Geodatabase Production tier architecture.
- Complete LOJIC planimetric/topographic map updates for Jefferson, Oldham, Bullitt Counties.
- Enhance IPS 11.1 functionality with Field Inspector Mobile for use by field staff on mobile devices and Rhythm for Civics web portal for customer service request and permit application online submittal.
- Replace FASTER with cloud-based AssetWorks.
- Complete Project WIN redesign and rewrite.
- Complete eB upgrade.
- Complete upgrade of Telog.
- Continue planning for SAP upgrade to S/4HANA.
- Perform technology refresh of server and storage platforms in primary data center.
- Deploy McAfee's next-generation endpoint protection to servers and workstations.
- Deploy MaaS360 mobile device management solution.
- Complete end-to-end network resiliency testing.
- Refresh SolarWinds monitoring and alerting environment and deploy enhanced capabilities.

4.1.1.5. Engineering Programs

This section describes MSD's Engineering CMOM activities. The goal of this section is to maintain accurate plans of current sewer system infrastructure, oversee construction quality of new infrastructure, and conduct assessments to maximize the efficiency of current WQTCs. MSD's engineering programs include the following: collections and transmission system plans, system inventory, mapping, sewer system design, sewer construction, construction inspection, acquisition considerations, continuing sewer system assessment (CSSA), infrastructure rehabilitation, and a system capacity assurance plan (SCAP).

M-E-1 Collection and Transmission System Plans

M-E-2 System Inventory

M-E-3 Mapping

MSD has an extensive collection of record drawings of the sewer facilities dating back to 1874. In addition to the original record drawing, a scanned image is stored in eB/Alim, MSD's records management system. Plans are scanned twice during a project life cycle – once when the project is approved for construction and a second time when the plans are made "as-built" after construction completion. After a set of plans has been constructed, the facilities are created in GIS and the attributes of the facilities are stored in a corresponding asset record in the IPS database. Map corrections are also obtained during asset inspection activities.

FY21 Reporting Period

- Captured assets in the GIS and IPS. Added 1,199 property service connection records and 71 miles of sewer assets.
- Corrected 35 sewer errata.
- Scanned 119 construction plan sets into the eB Imaging System.

FY22 Reporting Period

- Continue to scan plans and to add and update data in the GIS and asset management software based on new construction drawings and feedback from MSD field personnel.
- Update the GIS sewershed layer as projects are completed to support SCAP implementation.
- Continue routine audits and QA/QC methods to ensure data accuracy.

M-E-4 Sewer System Design

FY21 Reporting Period

- Continued to hold the Qualified Post-Construction Inspector (QPCI) training course, which includes a 4-hour training course and qualifying exam. All green infrastructure projects are required to submit an annual inspection by a QPCI to verify continued on-site stormwater management.
- Continued use of AutoCAD templates available on the MSD public website, including AutoCAD 3D templates, for use by private firms as well as in-house design.

FY22 Reporting Period

- Continue to review and update the MSD Design Manual.
- Gather additional data on GMP implementation and update design manual as needed.
- Continue to administer training on the green infrastructure review and inspection process.

M-E-5 Sewer Construction

M-E-6 Construction Inspection

FY21 Reporting Period

- Maintained the practice on significant capital projects to utilize the design engineer as the engineer of record or resident project representative (RPR).

- Continued reviews and revisions of the Construction Inspector Field Handbook.
- Continued utilization of contract inspectors due to workloads.

FY22 Reporting Period

- Continue construction inspection activities in-house and continue to supplement with contract inspection as needed.
- Continue acquisition of RPR services for significant capital projects.
- Continue review and updates of the Construction Inspector Field Handbook.

M-E-7 Acquisition Considerations

FY21 Reporting Period

- Financed capital expenditures of $188,184,236.
- Committed professional services funds of $16,404,219.
- Committed construction funds of $88,744,063.

FY22 Reporting Period

- Budget for capital expenditures up to $200,722,526.
- Monitor expenditures related to professional services and construction.

M-E-8 Continuing Sewer System Assessment

FY21 Reporting Period

- Continued to perform acoustic inspections as a prescreening for gravity pipe under 15 inches in diameter before referral for CCTV inspection.
- Acquired a second multi-inspection tool capable of inspecting assets with CCTV, sonar, laser in partial full and pipe-full conditions, up to 5,000 linear feet.
- Completed cleaning and inspection in the SSS, as shown in Table 4.4.

Table 4.4. Continuing Sewer System Assessment Activities

ACTIVITY	LINEAR FEET
CHEMICAL ROOT CONTROL	139,078
CLEANING ACTIVITIES	65,579
INSPECTION ACTIVITIES	138,254

FY22 Reporting Period

- Complete cleaning and inspection activities as scheduled in IPS.

M-E-9 Infrastructure Rehabilitation

Refer to Section 2: Program Activities for Discharge Abatement Plans for more details on infrastructure rehabilitation projects identified in the IOAP. Refer to Section 7: Program Activities for Asset Management for rehabilitation projects not specifically identified in the IOAP.

M-E-10 System Capacity Assurance Program

FY21 Reporting Period

- Continued to collect formula-based defect inspection of sewer lines in various sewersheds across the county. This information is being used to prioritize cleaning and rehabilitation efforts that will remove inflow and infiltration from the system and create capacity credits.
- Tracked pump station capacities, reviewed drawdown testing results and identified action items pertaining to deficiencies. Critical results of this effort are being documented on each asset within the IPS system.
- Submitted credit catchment ledgers to the Kentucky Division of Water (KDOW) and EPA as part of quarterly reports.
- Reviewed wastewater capacity requests from private development as shown in Table 4.5. Running SCAP Balance by sewershed can be found in Appendix L.

Table 4.5. SCAP Wastewater Capacity Request Reviews

RESULT	REVIEWS	FLOW
CONDITIONALLY APPROVED	446	7,996,362
APPROVED	111	586,565
DENIED	7	638,700

FY22 Reporting Period

- Continue to perform inspection of sewer lines in various sewersheds across the service area as scheduled. Continue tracking pump station capacities through testing, investigation and capacity evaluations.
- Update WQTC capacities and track new development flows.
- Generate inflow and infiltration reduction projects and calculate related capacity credits.
- Continue to enhance credit calculation protocols and tracking in IPS.
- Continue to enhance the procedures for documentation of rehabilitation and the calculation of SCAP credits.
- Update SCAP areas based on pump station elimination projects that have been completed.

4.1.1.6. Sanitary Sewer Overflow Reporting and Notification Program

This section describes MSD's SSO Reporting and Notification Program. The goal of this section is to maintain accurate, up to date records of SSOs and to ensure proper, timely notification of the agencies and organizations through unpermitted discharge reporting, SSO notification and tracking.

M-F-1 Unauthorized Discharge Reporting

Refer to Section 1: Discharges to Waters of the United States for detailed information.

M-F-2 Sanitary Sewer Overflow Notification

M-F-3 Tracking Sanitary Sewer Overflows

Refer to Section 5: Program Activities for Sewer Overflow Response Protocol for detailed information.

4.1.1.7. Financing and Cost Analysis Program

This section describes MSD's Financing and Cost Analysis Program. The goal of this section is to provide a detailed cost analysis for both the capital and operational costs of MSD for use in future budgeting and decision making.

M-G-1 Operations Cost

M-G-2 Maintenance Cost

M-G-3 Capital Improvement Funding

M-G-4 Management Programs Cost

M-G-5 Life Cycle Cost

M-G-6 Budget and Customer Rate Setting

FY21 Reporting Period

Budget performance is shown in Table 4.6. Reported amounts for the program are unaudited financial results.

Table 4.6. Financing and Cost Analysis Program Performance

PERFORMANCE MEASURE	BUDGET	ACTUAL
Operating Revenue Growth	5%	3%
Operating Revenue	$325,608,669	$329,418,417
Wastewater / Stormwater Revenue	$321,333,765	$325,717,207
Investment Income	$15,788,560	$12,174,607
Senior Debt Service Coverage Ratio	183%	186%
Total Operating Expenses	$153,521,000	$151,527,714
Total Capital Expenses	$194,112,000	$188,184,236

FY22 Reporting Period

- Set the operating budget at $161,044,447 and the capital budget at $200,722,526.

4.1.1.8. Equipment and Tools Management and Maintenance Program

This section describes MSD's Equipment and Tools Management Programs. The goal of this section is to facilitate efficient repair and support of MSD's sewer systems through an accurate spare parts inventory, a timely equipment maintenance schedule, vehicle repair, and needed tools and supplies.

M-H-1 Spare Parts Inventory Management

M-H-4 Supplies Management

FY21 Reporting Period

- Continued weekly meetings with departments for improved customer service, inventory management of critical spare parts, reorganization of new storeroom locations, and PPE/safety upgrades.
- Reviewed current SOPs to verify compatibility with current organizational direction. Updated SOPs for quality improvements and determined best practices to improve operations through continuous training of Storeroom applications.

- Annual Organizational events (i.e. River Sweep); helping trace the life, valuation and spend of assets for proper & transparent auditing purposes.
- Continued asset management process to replace identified spare parts from Morris Forman WQTC flood event.
- Implemented daily cycle counts of all assets issued/day and work order assets/week resulting in 75% of high revolving and mid revolving items being counted 10x's more than annual inventory counts.
- Designed condition tags to help identify non-inventory assets maintenance condition of new, repaired (in from maintenance), sending out for maintenance or unserviceable/condemned for salvage, disposal or cannibalization of parts to go to another asset.
- Acquired spare parts for Morris Forman WQTC storeroom from ongoing equipment replacement projects.
- Added mid-year inventory based off of cycle counts and ABC methods to CMF and Morris Forman WQTC warehouse facilities, improving annual inventory counts and variants.
- Added capability to new bar code system of adding non inventory assets value and maintenance history for transparency and proper asset tracking.
- Continued Bar-Code Scanning initiatives for inventory control.

FY22 Reporting Period

- Continue to update SOPs for quality improvements and determine best practices to improve operations, utilizing "Back to Basics" guidelines.
- Continue to resubmit selected Material Master Forms for reprocessing to reconcile vendor's Unit of Measure with storeroom's Unit of Issue, in order to improve inventory and ordering processes.
- Complete upgrade security of Cedar Creek Storeroom with camera surveillance.
- Continue improvements to Material Master Form.
- Continue to implement plan to reorganize CMF North Warehouse.
- Continue barcode scanning initiatives for inventory control.
- Update inventory descriptions and relocate like parts.
- Continue cycle counts after each morning rush and before system processing.
- Continue storeroom follow-up program to ensure accountability of vendors and visibility of incoming assets.
- Continue "Back to Basics" training for goal setting and incorporate focus commodities for team members

M-H-2 Equipment and Tools Repair Management

FY21 Reporting Period

- Attended regular safety inspections and meetings, and supported safety standards as part of participation in CMF and Morris Forman Safety Committees.
- Trained all employees in advanced safety of material handling and storeroom functionality.
- Continued annual audit of SOPs for tooling inspections and implement improved security measures for cost savings initiatives and asset management.

- Collaborated with Safety to review and update safety equipment and inspection controls (Arc Flash Personal Protective Equipment [PPE], safety harness inspections, eyewash stations, ladders, safety PPE, and fire extinguishers). Reconciled Morris Forman WQTC's Gas Cylinder Cage; assessed inventory of expired and currently used gas cylinders.
- Located drop zones for future barcoding implementation at Morris Forman WQTC.
- Implemented and designed an electronic material master form through Docusign. (allows a transparent electronic chain of process of signatures as well as speeds up the process of having digital signature approval VS routing through interoffice wet signatures; adding to the speed of an asset becoming an inventory item and added through SAP.)
- Reviewed all non-inventory or non-critical spares assets the Storeroom are requested to store from other departments. If no weight or measurement can be given, assets are rejected in order to upkeep "good housekeeping" of warehouse conditions and keep free of waste, theft and collection of "junked" assets being left in warehouse for cumulative amounts of years.
- Implemented an electronic UPS terminal for shipping at CMF and MF (This is an ongoing project). Work with MF leadership to designate proper location to place pallet/floor digital scale and computer terminal. This allows the enduser to directly set up ground, air or overnight shipments on their own. This also helps MSD's UPS accounts continue without being delinquent.

FY22 Reporting Period

- Continue participation on CMF and Morris Forman WQTC Safety Committees by attending regular safety inspections, safety meetings, and supporting safety standards.
- Continue training on safety related storeroom processes and inventory for all employees.
- Continue annual audit of SOP for tooling inspections and implement improved security measures for cost savings initiatives and asset management that aligned with departmental goals when necessary.
- Continue barcode scanning initiatives for inventory control.
- Develop capital spare parts process with MSD Engineering and Operations Divisions.

M-H-3 Vehicle Repair

MSD's vehicle repair maintenance program addresses over 600 pieces of rolling stock, including automobiles, trucks, trailers, construction equipment (backhoes, mobile cranes, etc.), and specialty sewer maintenance equipment. 2ACD reports specifically address maintenance issues related to the grouping of Mission Critical Equipment (MCEs) that were identified as being essential to meeting commitments related to NMC and CMOM activities, including catch basin cleaners (mechanical clamshell type), high-pressure sewer flusher / jetter trucks, teleinspection vehicles, and combination vacuum sewer / catch basin cleaner trucks.

FY21 Reporting Period

- Monitored equipment and work order data using FASTER System reports to analyze and target areas where improvement is needed and to plan future replacements. Began transition to AssetWorks for fleet management.
- Monitored preventive maintenance (PM) schedules to ensure they remain within industry standards, specifically addressing the operating environment of all MCE increasing the frequency of PM performed to improve availability to the operating division.
- Analyzed FY21 capital purchasing needs, including the evaluation of MCE for replacement.

- Heavy Duty Vacuum Sewer / Catch Basin Cleaner Truck: Ordered one new replacement unit in FY21 with estimated delivery September 2021.
- Jetter / Flusher Truck: Ordered one in FY20 and received and placed in service in July 2021.
- Catch Basin Cleaner: Ordered two in FY20 and received and placed in service in August 2020.

- Continued efforts associated with One Water Initiative with LWC to capitalize on fleet services opportunities to realize cost savings while better serving our customers and increasing levels of service to the community. Remain in conversations with both MSD and LWC union leadership regarding opportunities to capitalize on shared resources.
- Monitored and reported availability and turnaround time of MCE targeting each equipment type's overall average goals. MCE metrics include measures for availability and shop turnaround time as shown in Table 4.7.

Table 4.7. Mission Critical Equipment and Fleet Performance Measures

PERFORMANCE MEASURE	GOAL	RESULT
MCE Availability	80%	91%
Fleet Availability		96%
MCE 24-Hour Turnaround	80%	94%
Fleet 24-Hour Turn Around		89%
MCE 48-Hour Turn Around	90%	97%
Fleet 48-Hour Turn Around		94%

FY22 Reporting Period

- Continue monitoring equipment and work order data using FASTER and AssetWorks system reports to analyze and target areas where improvement is needed and to plan future replacements.
- Continue monitoring preventive maintenance (PM) schedules to ensure they remain within industry standards, specifically addressing the operating environment of all MCE increasing the frequency of PM performed to improve availability to the Operations Division.
- Analyze FY22 capital purchasing needs, including the evaluation of all MCE for replacement.
- Continue to explore One Water Initiatives with LWC to capitalize on fleet services opportunities to realize cost savings while better serving our customers and increasing levels of service to the community.
- Continue monitoring and reporting availability and turnaround time of MCE targeting each equipment type's overall average goals.
  - Heavy Duty Vacuum Sewer / Catch Basin Cleaner Truck: Procure and place in service four new units to replace aging equipment and improve availability. Coordinate operator and fleet technician training after receipt.
  - Jetter / Flusher Truck: Procure and place in service four new units to replace aging equipment and improve availability. Coordinate operator and fleet technician training after receipt.
  - Catch Basin Cleaner: Procure and place in service one new unit to replace aging equipment and improve availability. Coordinate operator and fleet technician training after receipt.
  - Tele-Inspection Vehicle: Procure and place in service two new units to replace aging equipment and improve availability. Coordinate operator and fleet technician training after receipt.

4.1.1.9. Customer Service Programs

This section describes MSD's Customer Service Programs. The goal of this section is to strengthen and maintain a healthy relationship between MSD and the public through service programs which include complaint management, public information and public education.

M-I-1 Customer Service

M-I-2 Public Information

M-I-3 Public Education

FY21 Reporting Period

- Mailed out 573 Project WIN and Plumbing Modification Program packets of information or applications.
- Launched a new customer service portal for customers to submit service request online, **eservice.louisvillemsd.org**. Added 309 new users and accepted 104 service requests online.
- Received 42,762 calls as shown in Table 4.8. Continued effort to reduce the percentage of abandoned calls below target level.

Table 4.8. Customer Service Call Data

PERFORMANCE MEASURE	GOAL MAXIMUM	RESULT
Calls Received		42,762
Calls Abandoned		3,055
Abandoned Call Rate	5%	7%

FY22 Reporting Period

- Continue efforts to keep the number of abandoned calls below target level.
- Fill vacant Customer Relations positions to better serve customer needs.
- Continue to improve the functionality of the portal for service request submission and routing.

4.1.1.10. Legal Support Programs

The following support programs are included in this section: inter-jurisdictional agreement, ordinances, pretreatment legal support, grease control legal support, service laterals legal support, septic tank haulers legal support, and "Call Before You Dig" legal support.

M-J-1 Inter-Jurisdictional Agreement

M-J-2 Ordinances

M-J-3 Pretreatment

M-J-4 Grease Control

M-J-5 Service Laterals

M-J-6 Septic Tank Haulers Legal Support

M-J-7 "Call Before You Dig"

FY21 Reporting Period

Over the past fiscal year, the MSD legal department has provided a variety of legal services designed to support MSD in its efforts to implement programs to abate sanitary sewer overflows. The services most directly related to this effort include:

- Participated in and/or provided legal advice and other functions pertaining to the procurement of construction and professional service contractors to provide services and/or perform work in furtherance of IOAP -related projects.
- Participated in the acquisition of properties and/or property interests (easements and/or fee simple ownership) critical to the completion of IOAP-related sewer construction projects. The department's participation has included assisting in the negotiation and structuring of purchase and sale agreements, drafting acquisition related documents, drafting easements, title research, and performing or providing oversight of the closing of acquisition transactions, as well as initiating legal proceedings to acquire property through eminent domain.
- Provided support and assistance to the Development & Stormwater Services department in the negotiation and preparation of green infrastructure and long-term maintenance agreements.
- Provided support, assistance and counsel to regulatory programs and enforcement actions brought under the Wastewater Stormwater Discharge Regulations, Hazardous Materials Ordinance, and Erosion Prevention and Sediment Control Ordinance.

FY22 Reporting Period

- Continue to provide legal services to support MSD.

4.1.1.11. Water Quality Monitoring Programs

This section describes MSD's Water Quality Monitoring Program. The goal of this section is to maintain an accurate, consistent record of water quality in receiving bodies of water. Monitoring results are used to determine the effect of effluent discharge and/or spills through the following monitoring programs: routine water quality, investigative water quality, and water quality monitoring for spill impact. Water Quality monitoring data is also assessed and provided in the Water Quality Synthesis Report.

M-K-1 Routine Water Quality Monitoring Programs

M-K-2 Investigative Water Quality Monitoring

M-K-3 Water Quality Monitoring for Spill Impact

MSD has aggressively pursued a watershed management approach that relies heavily on an established water quality monitoring program. The program has an extensive in-stream monitoring effort for tributary streams and for emergency spill responses, including:

- Ambient monitoring at 28 Long Term Monitoring Network (LTMN) locations across Jefferson County to monitor multiple physical and biological indicator parameters in accordance with the MS4 permit.
  - Continuous monitoring for pH, conductivity, temperature, dissolved oxygen, and stream flow are currently collected at 25 of the 28 ambient locations.
  - Biological sampling and/or evaluation for algae, fish, habitat, and benthic macroinvertebrates are currently conducted every two years at 27 of the 28 ambient locations.
  - Quarterly sampling for Total Suspended Solids (TSS), E. coli, total nitrogen, oil and grease, copper, and pH is currently conducted on a quarterly basis at 27 of the 28 ambient locations.
  - Recreational contact monitoring is conducted seasonally from May through October is currently conducted at 27 of the 28 ambient monitoring sites for E. coli.
  - Wet weather monitoring is conducted over the course of the MS4 permit term for three storm events at 27 of the 28 ambient locations and an additional 15 locations.
- Combined Sewer Overflows (CSOs)/Significant Industrial Users (SIUs) point sampling monitors the risk of water quality impairment to discharges associated with SIUs and General Discharge Permits through the NMC 3 Pretreatment Program.
- CSO flow monitoring measures flow within the combined sewer system to provide improved data input into water quality models.

Additional information on these programs is provided in Section 2.5.3. Stream Flow and Water Quality Monitoring.

4.1.1.12. Contingency Plan for Sewer and Treatment Plant

This section describes MSD's Contingency Plan for the wastewater collection and treatment system. The goal of this section is to provide a protocol for emergency response and notification. The following elements are included in this section: contingency planning process, response flow diagram, public notification plan, agency notification plan, emergency flow control plan, emergency operations and maintenance plan, preparedness training program, water quality monitoring plan, and Sewer Overflow Response Protocol (SORP). The SORP requires training for all MSD employees.

M-L-1 Contingency Planning Process

M-L-2 Response Flow Diagram

FY21 Reporting Period

- Continued efforts to improve disaster response protocols. Improved draft matrix for internal training modules to be implemented, including training on first aid, CPR, bloodborne pathogens, and the National Incident Management System's Incident Management System and National Response Framework.
- Practiced annual floodwall closure installations.

- Continued collaboration with the National Weather Service, USGS, and Louisville Metro Emergency Management Agency (EMA) to develop a pilot project to install flow and level monitors at a site for early warning of significant weather events. Significant changes in both meters would trigger a notification at MSD and EMA.
- Began development of a Critical Asset Risk Management tool to perform risk and resiliency assessment for all hazards including natural, technology/accidental, human-caused/adversarial, and decaying of infrastructure.

FY22 Reporting Period

- Continue to practice annual floodwall closure installations.
- Continue development of the Critical Asset Risk Management tool.
- Continue work with the National Weather Service regarding monitors for early warning of significant weather events.
- Continue revision of Comprehensive Nature Disaster and Business Continuity Plan using the critical path.
- Continue to work with other agencies to develop Catastrophic Urban Flood Plan.
- Add redundant communication paths to provide improved network resiliency for key sites.

M-L-3 Public Notification Plan

M-L-4 Agency Notification Plan

Refer to Section 5: Program Activities for Sewer Overflow Response Protocol for more details on public and agency notifications.

M-L-5 Emergency Flow Control Plan

M-L-6 Emergency Operations and Maintenance Plan

Strategy 5 of MSD's Strategic Business Plan requires that MSD "develop a comprehensive disaster response and business continuity plan for disasters that impact our ability to serve our customers and the community". As part of this effort, a diverse team from across MSD has been working to complete the initiatives of this plan.

FY21 Reporting Period

- Continue development of catastrophic urban flood plan in conjunction with the Department of Homeland Security, US Army Corps of Engineers, Kentucky Emergency Management, Louisville Emergency Management Agency and other partners. MSD will transition from the data gathering stage of the Regional Resiliency Assessmet Program to the implementation phase.

FY22 Reporting Period

- Continue development of catastrophic urban flood plan.
- Continue development of operational emergency response SOPs from the comprehensive risk and vulnerability assessment of MSD operations and infrastructure assets, using industry best practices, and begin training.

M-L-7 Preparedness Training

Refer to 4.1.1.2. Training Programs for details on training for emergency response procedures.

M-L-8 Water Quality Monitoring Plan

Refer to 5.5. Post Construction Compliance Monitoring Program and 4.1.1.11. Water Quality Monitoring Programs for more details on the MSD Water Quality Monitoring Plan.

M-L-9 Sewer Overflow Response Protocol

Refer to Section 5: Program Activities for Sewer Overflow Response Protocol for details on MSD's SORP program.

4.1.2. Operations Programs

4.1.2.1. Pump Station Operations Programs

This section describes MSD's Pump Station Operation Programs. The goal of this section is to maintain pump stations for optimal use during routine and emergency operations through well documented operating procedures.

O-A-1 Routine Operating Programs

FY21 Reporting Period

- Continued review and updates, as needed, of the U.S. Army Corps of Engineers (USACE) Flood Operations and Maintenance Manual based on USACE and staff review comments. The manual is continuously under review as MSD completes both LTCP and NMC programmatic activities.
- Determined capital project priorities and the budgetary needs related to flood protection system pump stations during regular meetings with MSD Operations and Engineering staff.
- Completed Operations staff training for pump stations and diversion structures at newly-constructed CSO storage basins.
- Installed level instrumentation at three sanitary pump stations.
- Developed schedule for physical drawdown to coincide with completed preventive maintenance.
- Replaced over thirty sanitary pumps in the collections system.

FY22 Reporting Period

- Continue regular meetings with MSD Operations and Engineering staff to determine capital project priorities and advise on the budgetary needs on a quarterly basis.
- Complete Operations staff training for pump stations and diversion structures at newly-constructed CSO storage basins.
- Continue reviewing pump stations for the installation of level sensors in support of improved monitoring capability.
- Continue to provide backup power at critical pump stations.
- Begin telemetry panel replacement projects for pump stations with outdated processors, at risk of submergence, or with multiple PLC or communications failures.
- Procure twelve replacement sanitary pumps for the collections system.
- Procure replacement control panel for Muddy Fork PS and new motor starters for Hasbrook PS.
- Procure spare screw compactor for Grand Avenue PS.

O-A-2 Emergency Operating Programs

FY21 Reporting Period

- Reviewed and updated procedures for installation and handoff of backup power supply and mobile generator staging and operation.

FY22 Reporting Period

- Continue to evaluate pump stations for inclusion in the Green Line program.
- Replaced failed standby Generator at West Goose Creek Pump Station.

4.1.2.2. Pretreatment Program

This section describes MSD's Pretreatment Programs. The goal of this section is to protect MSD's sewer system and treatment plants by requiring industrial users to pretreat their effluent to required levels through industrial user permitting, inspection, sampling and enforcement.

O-B-1 Industrial User Permit

O-B-2 Inspection

O-B-3 Sampling Enforcement

Administered pretreatment limitations at Hite Creek, Floyds Fork, Derek R. Guthrie and Morris Forman WQTCs. Additional information related to the MSD Pretreatment Program for the combined sewer system can be found in 3.3. NMC 3: Review and Modification of Pretreatment Requirements.

FY21 Reporting Period

- Completed Dental Amalgam Program (DAP) implementation and developed continuity plan for the upcoming reporting period.
- Completed development of local limits for Cedar Creek and revisions to the Enforcement Response Plan (ERP) which were approved by KEEC.

FY22 Reporting Period

- Continue to administer the DAP for MSD service areas and identify new detnal office(s) that submit a one-time compliance dental amalgam report.
- Submit for approval to the EPA's Cross-Media Electronic Reporting Rule to utilize third-party software and allow online submission of self-monitoring report data from permitted industries.
- Submit to MSD board policy committee approved ERP changes.

4.1.2.3. Corrosion Controls Program

This section describes MSD's Corrosion Controls Program. The goal of this section is to extend the life of MSD's sewer system by controlling the corrosive effects of hydrogen sulfide (H2S) and other corrosive chemicals in the system through inspection, control measures, monitoring, and performance measures.

O-C-1 Inspection

O-C-2 Control Measures

O-C-3 Monitoring

O-C-4 Performance Measures

Hydrogen sulfide is a serious problem for the structural integrity of the collection system, as well as a nuisance to the public due to odor. In some instances, it is possible to respond to odor complaints and treat H_2S without addressing corrosion concerns.

FY21 Reporting Period

- Continued to clean MSD facilities to minimize impact of corrosion and odors. Completed 63 cleaning work orders on collection system.
- Continued to enhance asset review and documentation by further defining service request responsibilities related to odor complaints.
- Continued contracts in order to provide professional engineering services to assist MSD with odor control for the collection system, regional WQTCs, and Ohio River Force Main (ORFM).
- Continued to monitor and evaluate gravity lines within the collections system through the CSSA/Blockage Abatement Program using the corrosion indexes.

FY22 Reporting Period

- Continue to clean MSD facilities to minimize impact of odors and corrosion caused by H_2S on the collection system.
- Create further training and documentation on maintenance activities and work flow for better tracking of work performed and time and materials used.
- Monitor and evaluate gravity lines within the collections system through the CSSA/Blockage Abatement Program.
- Continue to monitor Evoqua's Full Service Odor Control Contract.
- Continue review of underground tank pump station sites, which may be susceptible to corrosion. Projects include application of epoxy coatings as for corrosion control and calcium nitrate as for H_2S elimination.
- Design and construct air release valve replacement using resistant materials on the ORFM.
- Construct two pump station oxygen injection systems to treat H_2S on the ORFM.

4.1.2.4. Grease Trap Inspection and Enforcement Program

This section describes MSD's Grease Trap Inspection and Enforcement Programs. The goal of this section is to reduce the amount of fats, oils and grease (FOG) that enter MSD's sewer system and treatment plants through permitting, inspection, enforcement, performance measures, and the FOG program.

O-D-1 Permitting

O-D-2 Inspection

O-D-3 Enforcement

O-D-4 Performance Measures

O-D-5 Fats, Oils and Grease Program

FY21 Reporting Period

- Issued 24 enforcement actions to include FCNs, NOVs and NOVs with fines to food service establishments (FSEs) requiring action(s) to prevent and/or eliminate grease blockages in MSD's collections system. The enforcement actions required FSEs to install and/or modify grease control equipment, with additional requirements to submit documentation of installations and/or modifications.
- Conducted 187 plan review inspections to insure proper grease control equipment was installed at new and/or modified FSEs.
- Mailed 732 FOG residential public service notifications. The public service outreach informed residents of a recent sanitary sewer blockage occurrence near their home. Information sent to residents informs the customer of measures that could be taken within a residential dwelling to prevent any further occurrences.
- Conducted two Certified Grease Waste Hauler (CGWH) training classes for haulers servicing grease control equipment within Jefferson County. Grease haulers from various MSD Certified Grease Waste Hauler facilities participated and received certification cards collectively. Class number 23 was held virtually on November 17, 2020, and class number 24 held virtually on April 20, 2021. CGWHs as well as master and journeyman plumbers that service or repair grease traps or grease interceptors within Jefferson County service area are required to participate and receive approval to service grease control equipment. FSEs in Jefferson County must only utilize MSD's CGWHs or plumbers that have obtained the appropriate certification.
- Continued to track FOG removal by CGWHs. Collectively, 2,272,992 gallons of FOG was removed from grease control equipment maintained by area FSEs during the reporting period. Collectively, CGWHs in Jefferson County serviced approximately 6,906 items of grease control equipment.
- Continued to track FOG program performance measures.
- Contracted with a consultant and pertinent employees to conduct a comprehensive FOG Program Assessment Report to identify program areas for improvements and enhancements. Developed a comprehensive FOG Program Guidance Document to define the scope of program initiatives, proper documents, policies and procedures.

FY22 Reporting Period

- Continue to conduct inspections at FSEs and issue enforcement actions as appropriate for violations of the MSD Wastewater/Stormwater Discharge Regulations.
- Continue to send FOG residential public outreach letters to residents in neighborhoods in the MSD service area that had FOG issues.
- Participate in public education and outreach programs to inform the public regarding MSD's FOG program.
- Continue to host at least two CGWH training classes per year.
- Continue to conduct CGWH audits.

- Continue to track FOG program performance measures and develop reporting tools.
- Develop a framework for periodic performance of a FOG Characterization Study.
- Develop an interface between IPS and LINKO for reporting and portal access.
- Examine cost recovery options associated with the program.

4.1.2.5. New Connection Tap-In Program

This section describes MSD's New Connection Tap-In Program. The goal of this section is to ensure that future connections do not compromise the capacity of the receiving treatment plant. The program is implemented using a new service tap approval process, inspection, enforcement, and performance measures for new connections to existing sewers and increased flow on existing service connection locations. All new service connections are installed by contractors that have a master plumber on staff. New connections made to public sanitary sewers are inspected by MSD personnel.

All new and changes to wastewater discharge volumes are reviewed through MSD's SCAP process. Developers are required to submit proposed flows to MSD's system and those flows are traced through MSD's infrastructure to identify lack of system capacity. Where capacity in the system exists, capacity requests are approved for 90 days. Where capacity does not exist, upgrades to infrastructure are undertaken or the capacity request is not approved.

O-E-1 Installation of New Service Taps

O-E-2 Inspection

O-E-3 Enforcement

O-E-4 Performance Measures

O-E-5 Other

FY21 Reporting Period

- Refer to Table 4.5 for details regarding new connections approved through the SCAP process.
- Inspected installation of 115 new property service connections (PSCs) on existing MSD's sewers.

FY22 Reporting Period

- Continue to review projects for capacity available through SCAP program.
- Implement new property service connection workflow in IPS.

4.1.2.6. Flow Monitoring Field Operation Programs

This section describes MSD's Flow Monitoring Field Operation Programs. The goal of this section is to provide accurate flow data for use in evaluating various aspects of MSD's sewer system. Flow is monitored at both permanent and temporary stations.

O-F-1 Permanent Stations

O-F-2 Temporary Stations

Refer to 2.5.3. Stream Flow and Water Quality Monitoring for details on water quality monitoring efforts.

4.1.2.7. Septic Tank Haulers Program

MSD does not accept septic tank waste. This is handled through private contractors in Jefferson County.

4.1.2.8. "Call Before You Dig" Program

This section describes MSD's "Call Before You Dig" Program. The goal of this section is to prevent the damaging or cutting of sewer lines and other MSD assets and subsequent spills through permitting, inspection, enforcement, and performance measures.

O-H-1 Permitting

O-H-2 Inspection

O-H-4 Performance Measures

FY21 Reporting Period

- Contracted with locating company to locate all requests with the MSD service area. Contract is set up to handle Louisville Water Company (LWC) requests as well (invoiced separately). Invoices totaled $979,084.53 to 107,078 locate requests to identify MSD facilities during the reporting period.
- Contracted with the KY 811 (BUD Center) for underground utility information call center services. Invoices totaled $108,479.00 to participate in this program for the reporting period.
- Requested 2,694 (1,596 via phone and 1,098 via web) to the BUD Center for the marking of other utilities during this time period.

FY22 Reporting Period

- Continue to contract for utility locating services.

O-H-3 Enforcement

Enforcement is handled by the Commonwealth of Kentucky.

4.1.3. Maintenance Programs

4.1.3.1. Pump Station Preventive Maintenance

This section describes MSD's Pump Station Structured Maintenance program. The goal of this section is to prevent unanticipated repairs and subsequent down-time by providing scheduling, staff, and records to perform routine, preventive pump station maintenance. Electrical, mechanical, and physical maintenance are included in this section.

S-A-1 Electrical Maintenance

S-A-2 Mechanical Maintenance

S-A-3 Physical Maintenance

FY21 Reporting Period

- Continued to annually train staff to use the IPS asset management system to track pump station work orders as well as associated pump station assets.
- Ensured collaboration between Engineering and Operations on the design and construction of pump stations at CSO storage basins and diversion structures.
- Continued structured maintenance for sanitary pump stations as shown in Table 4.9. This measure also includes structured maintenance at flood pump stations in the CSS.

Table 4.9. Sanitary PS Structured Maintenance

PERFORMANCE MEASURE	GOAL	RESULT
Sanitary PS Structured Maintenance Completion Rate	60.0%	98.4%

FY22 Reporting Period

- Continue structured maintenance for sanitary and flood pump stations.
- Continue to annually train staff to use the IPS asset management system to track pump station work orders as well as associated pump station assets.
- Continue collaboration between Operations and Engineering staff, designers and contractors to incorporate changes to the system with the elimination of the non-regional WQTCs and the addition of storage basins and associated pump stations as required by the IOAP.
- Continue to develop and improve SOPs, training, and reporting related to subsequent repairs.

4.1.3.2. Force Main Preventive Maintenance

This section describes MSD's Force Main Preventive Maintenance program. The goal of this section is to prevent unanticipated repairs and subsequent down-time by providing scheduling, staff, and records to perform routine, preventive force main maintenance. The maintenance programs include walking the force main alignment to find cave-ins and air relief valve inspections.

S-B-1 Air Release Valves

S-B-2 Valve Exercise Program

FY21 Reporting Period

- Conducted the Annual Force Main Program evaluation and completed inspections on force mains listed in Table 4.10, covering 301,418 linear feet. Each inspection consisted of inspecting wet wells, valve vaults, air release valves, and discharge manholes; pumping out access vaults to lube, grease and exercise cross-connections; and observing the ground above the lines for evidence of pipe failure below ground.
- Continued to initiate corrective work orders for defects found on other assets during inspections.

FY22 Reporting Period

4.1.3.3. Gravity Line Preventive Maintenance

This section describes MSD's Gravity Line Preventive Maintenance program. The goal of this section is to reduce infiltration and increase efficiency of the gravity line system through routine cleaning, root control, and manhole preventive maintenance.

S-C-1 Routine Hydraulic Cleaning

S-C-2 Routine Mechanical Cleaning

S-C-3 Root Control Program

S-C-4 Manhole Preventive Maintenance

Refer to 4.1.1.5. Engineering Programs for details on gravity line preventive maintenance efforts.

Table 4.10. Force Main Inspections

FORCE MAIN	INSPECTED LENGTH
ADAMS RUN #1 FM	3,877
APPLE PATCH FM	1,942
ARBOR MANOR FM	4,174
ASHBURTON FM	438
BARDSTOWN ROAD FM	2,532
BAY HARBOR FM	3,810
BECKLEY STATION FM	7,291
BERRYTOWN FM	466
BLUEGRASS FIELDS FM	1,479
BRANDYWYNE FM	575
BRIDGE POINTE FM	4,007
CINDERELLA FM	2,964
COVERED COVE FM	3,683
CROSSGATE FM	450
DENBEIGH FM	416
DOMINION WAY FM	2,346
EASTWOOD-FISHERVILLE FM	12,089
EDITH AVENUE FM	13,469
FAIRMOUNT ROAD FM	5,264
FAIRWAY VIEW FM	4,964
FARMVIEW PLAZA FM	918
GRAND AVENUE FM	26,967
GUNPOWDER FM	3,476
HARRODS CREEK FM	27,370
INDUSTRIAL FM	1,741
JARVIS LANE FM	304
LAKE FOREST FM	1,428
ORFM	81,929
ROSA TERRACE FM	1,521
RUBBERTOWN FM	9,485
ST. PATRICK SCHOOL FM	404
WEST COUNTY SLUDGE MAIN	69,331
WORTHING FM	308

4.1.3.4. Equipment and Collections System Maintenance

S-D-1 Equipment Maintenance

Equipment and vehicle maintenance is discussed in detail in 4.1.1.8. Equipment and Tools Management and Maintenance Program.

4.2. Comprehensive Performance Evaluations and Composite Correction Plans (CPE/CCP)

Under the ACD, MSD implemented a Comprehensive Performance Evaluation (CPE) and Composite Correction Plan (CCP) program for MSD's Water Quality Treatment Centers (WQTCs). Per Paragraphs 12 and 13 of the 2ACD, MSD timely submitted all program submittals and eliminated required WQTCs by December 31, 2015, as required. Although the ACD CPE/CCP improvements are completed, MSD will continue to implement CPE/CCP activities as part of the MSD's CMOM program. This section will list performance measures established for the WQTCs and activities per WQTC as they occur each reporting period. Schedules for CPE/CCP related capital projects are provided in 4.3. CMOM Activity Schedule.

4.2.1. All Water Quality Treatment Centers

MSD's policy is to operate WQTCs in full compliance with the permitted effluent water quality standards. However, circumstances sometimes arise that may cause WQTCs to exceed the permitted effluent limits. This reality is recognized by the National Association of Clean Water Agencies (NACWA), which gives awards at different levels based on the number of effluent parameter exceedances during the calendar year:

- Silver – Five or fewer exceedances per year
- Gold – Zero exceedances per year
- Platinum – Zero exceedances per year for five years

Based on past operating history, MSD has established the target for all treatment centers of receiving at least the NACWA Silver Award.

FY21 Reporting Period

- All four operational regional WQTCs have achieved the NACWA Silver Award goal since FY16. Cedar Creek WQTC has maintained NACWA Platinum Award status since FY09 as shown in Table 4.11.
- Continued structured maintenance for WQTCs as shown in Table 4.12.

FY22 Reporting Period

- Continue to track exceedances at the regional WQTCs.
- Continue structured maintenance for all WQTCs.

4.2.2. Hite Creek Water Quality Treatment Center

FY21 Reporting Period

- Continued expansion project construction throughout the year.
- Began dewatering of sludge on-site began.

FY22 Reporting Period

- Complete expansion project.

Table 4.11. Regional WQTC Permit Compliance

PLANT NAME	FY	EXCEEDANCES	MONTHS COMPLIANT
CEDAR CREEK	FY16	0	12
CEDAR CREEK	FY17	0	12
CEDAR CREEK	FY18	0	12
CEDAR CREEK	FY19	0	12
CEDAR CREEK	FY20	0	12
CEDAR CREEK	FY21	0	12
DEREK R. GUTHRIE	FY16	0	12
DEREK R. GUTHRIE	FY17	1	11
DEREK R. GUTHRIE	FY18	3	10
DEREK R. GUTHRIE	FY19	2	10
DEREK R. GUTHRIE	FY20	0	12
DEREK R. GUTHRIE	FY21	0	12
FLOYDS FORK	FY16	0	12
FLOYDS FORK	FY17	1	11
FLOYDS FORK	FY18	2	11
FLOYDS FORK	FY19	0	12
FLOYDS FORK	FY20	0	12
FLOYDS FORK	FY21	1	11
HITE CREEK	FY16	2	11
HITE CREEK	FY17	1	11
HITE CREEK	FY18	1	11
HITE CREEK	FY19	0	12
HITE CREEK	FY20	0	12
HITE CREEK	FY21	3	11

Table 4.12. WQTC Structured Maintenance

PERFORMANCE MEASURE	GOAL	RESULT
WQTC Structured Maintenance Completion Rate	60%	69%

4.2.3. Floyds Fork Water Quality Treatment Center

FY21 Reporting Period

- No major capital projects were completed.

FY22 Reporting Period

- No major capital projects are anticipated to be completed.

4.2.4. Derek R. Guthrie Water Quality Treatment Center

FY21 Reporting Period

- Completed construction of the RAS Building Electrical Modifications Project.

- Completed construction of the Admin and RAS Buildings HVAC project.
- Continued construction of the Clarifier Grout Repair and RAS Gate Replacement project.
- Continued construction of the Dewatering Emergency Contract Project. Began dewatering sludge in the new system.
- Began construction of the Elevator Repairs project.
- Completed the Paving Project.

FY22 Reporting Period

- Continue construction of the Clarifier Grout Repair and RAS Gate Replacement project.
- Complete the construction of the Dewatering Emergency Contract project.
- Continue construction of the Elevator Repair project.

4.2.5. Cedar Creek Water Quality Treatment Center

FY21 Reporting Period

- Began construction of the Effluent Parshall Flume Upgrade Project.
- Completed construction of the Influent PS MCC Project.
- Completed construction of the new Sodium Aluminate Building.

FY22 Reporting Period

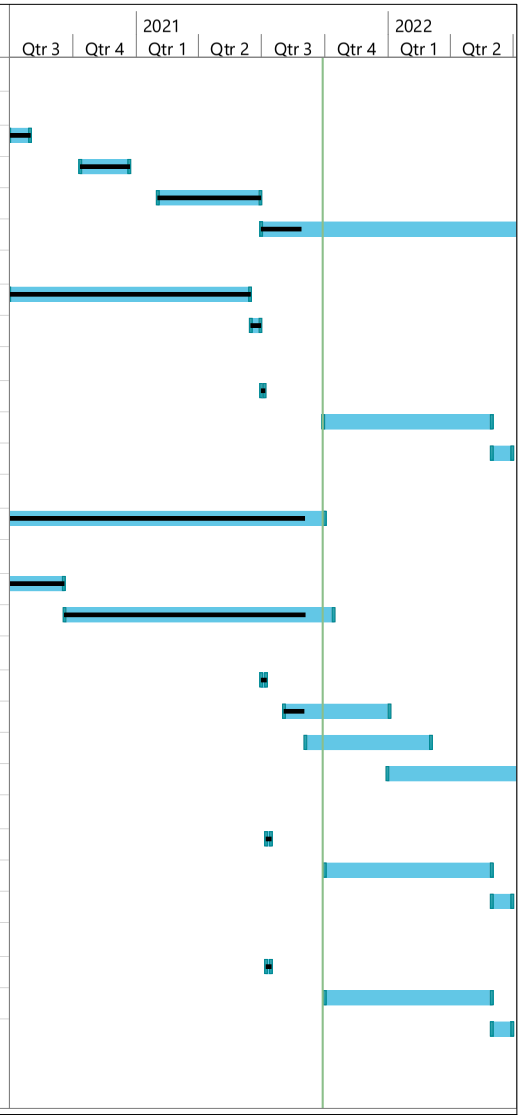
- Complete construction of the Effluent Parshall Flume Upgrade project.
- Begin design of Solids Holding Tank Project to install new decanters, tank covers, and odor control.
- Work to re-rate the plant capacity from 7.5 to 9.0 MGD.

4.3. CMOM Activity Schedule

A Gantt chart including progress of CMOM projects during the reporting period can be found in Figure 4.1

Figure 4.1. CMOM Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
	MSD CMOM Annual Commitments Schedule	40%	Thu 2/11/16	Thu 3/27/25
A14129	**Gorham Way Pump Station Elimination**	42%	Wed 7/1/20	Mon 10/31/22
A14129	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Fri 7/31/20
A14129	DESIGN	100%	Mon 10/12/20	Tue 12/22/20
A14129	CONSTRUCTION	100%	Mon 2/1/21	Wed 6/30/21
A14129	CLOSEOUT	12%	Thu 7/1/21	Mon 10/31/22
A19098	**FY21 Construction Inspection**	100%	Wed 7/1/20	Wed 6/30/21
A19098	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 6/15/21
A19098	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
A19109	**FY22 Construction Inspection**	2%	Thu 7/1/21	Thu 6/30/22
A19109	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
A19109	SERVICE PERIOD	0%	Wed 9/29/21	Thu 6/30/22
A19109	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
A20280	**Harrods Creek Force Main Repair**	95%	Mon 12/2/19	Thu 9/30/21
A20280	CONSTRUCTION	95%	Fri 12/6/19	Thu 9/30/21
A20320	**Broadfern PS Elimination**	93%	Fri 3/13/20	Thu 10/14/21
A20320	CONSTRUCTION	100%	Tue 6/9/20	Thu 9/17/20
A20320	CLOSEOUT	89%	Fri 9/18/20	Thu 10/14/21
C22029	**Ohio River Area Facilities Plan**	4%	Thu 7/1/21	Thu 7/27/23
C22029	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
C22029	DESIGN	19%	Tue 8/3/21	Mon 1/3/22
C22029	EASEMENTS/LAND ACQUISITION	0%	Fri 9/3/21	Fri 3/4/22
C22029	CONSTRUCTION	0%	Fri 12/31/21	Fri 9/30/22
C22052	**Rehabilitation Project Management Support**	1%	Thu 7/8/21	Thu 6/30/22
C22052	INITIATION & PROCUREMENT	100%	Thu 7/8/21	Wed 7/14/21
C22052	SERVICE PERIOD	0%	Fri 10/1/21	Tue 5/31/22
C22052	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
C22054	**PSC Program Support**	1%	Thu 7/8/21	Thu 6/30/22
C22054	INITIATION & PROCUREMENT	100%	Thu 7/8/21	Wed 7/14/21
C22054	SERVICE PERIOD	0%	Fri 10/1/21	Tue 5/31/22
C22054	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22



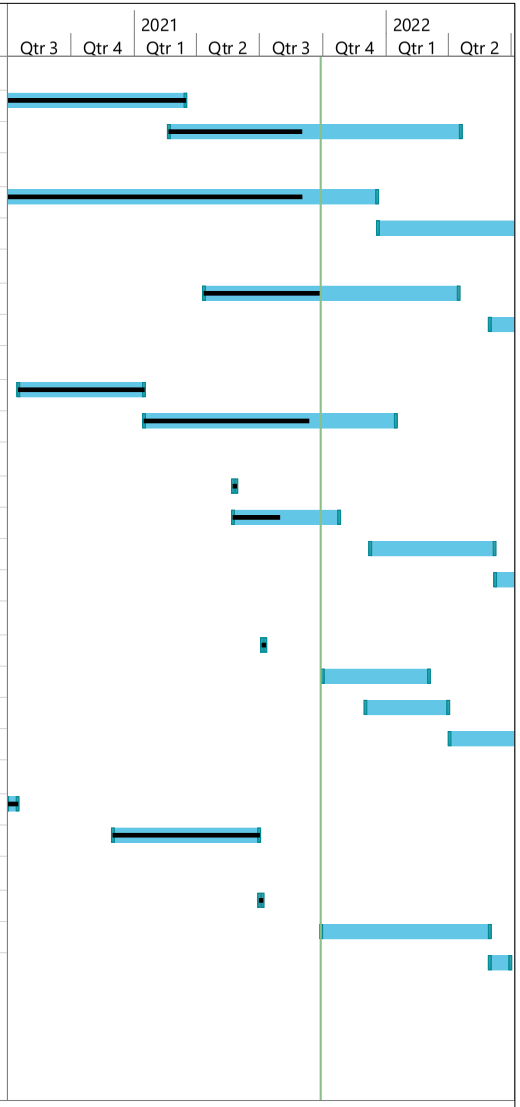
Data Date: 8/31/21 | CMOM Project | Project Progress

Percent complete is calculated based on phase duration.

Page 1

Figure 4.1. CMOM Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
D16272	**CCWQTC Influent PS MCC Upgrades**	69%	Thu 2/11/16	Tue 4/19/22
D16272	CONSTRUCTION	100%	Mon 5/25/20	Mon 3/15/21
D16272	CLOSEOUT	45%	Sat 2/20/21	Tue 4/19/22
D18285	**ORFM Odor and Corrosion Control**	63%	Mon 1/1/18	Thu 2/16/23
D18285	CONSTRUCTION	81%	Mon 5/18/20	Sun 12/19/21
D18285	CLOSEOUT	0%	Mon 12/20/21	Thu 2/16/23
D19286	**SWPS Gas Monitoring and SP1 Odor Control**	16%	Wed 5/15/19	Thu 3/27/25
D19286	DESIGN	46%	Sun 4/11/21	Fri 4/15/22
D19286	CONSTRUCTION	0%	Tue 5/31/22	Fri 1/26/24
D20278	**DRGWQTC RAS Building Electrical Modifications**	79%	Tue 12/17/19	Sat 1/15/22
D20278	CONSTRUCTION	100%	Fri 7/17/20	Fri 1/15/21
D20278	CLOSEOUT	65%	Fri 1/15/21	Sat 1/15/22
D22042	**FFWQTC and CCWQTC Power Factor Correction**	20%	Mon 5/24/21	Sun 6/4/23
D22042	INITIATION & PROCUREMENT	100%	Mon 5/24/21	Fri 5/28/21
D22042	DESIGN	45%	Mon 5/24/21	Mon 10/25/21
D22042	CONSTRUCTION	0%	Thu 12/9/21	Tue 6/7/22
D22042	CLOSEOUT	0%	Wed 6/8/22	Sun 6/4/23
E15035	**Lake Forest Pump Station Eliminations**	0%	Mon 7/5/21	Tue 10/10/23
E15035	INITIATION & PROCUREMENT	100%	Mon 7/5/21	Fri 7/9/21
E15035	DESIGN	0%	Fri 10/1/21	Fri 3/4/22
E15035	EASEMENTS/LAND ACQUISITION	0%	Thu 12/2/21	Fri 4/1/22
E15035	CONSTRUCTION	0%	Sun 4/3/22	Tue 10/10/23
E18468	**FY21 CMOM Collection System PS RR**	100%	Wed 7/1/20	Wed 6/30/21
E18468	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Wed 7/15/20
E18468	CLOSEOUT	100%	Tue 12/1/20	Wed 6/30/21
E18469	**FY22 CMOM Collection System PS RR**	2%	Thu 7/1/21	Thu 6/30/22
E18469	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
E18469	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
E18469	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22



Data Date: 8/31/21

CMOM Project

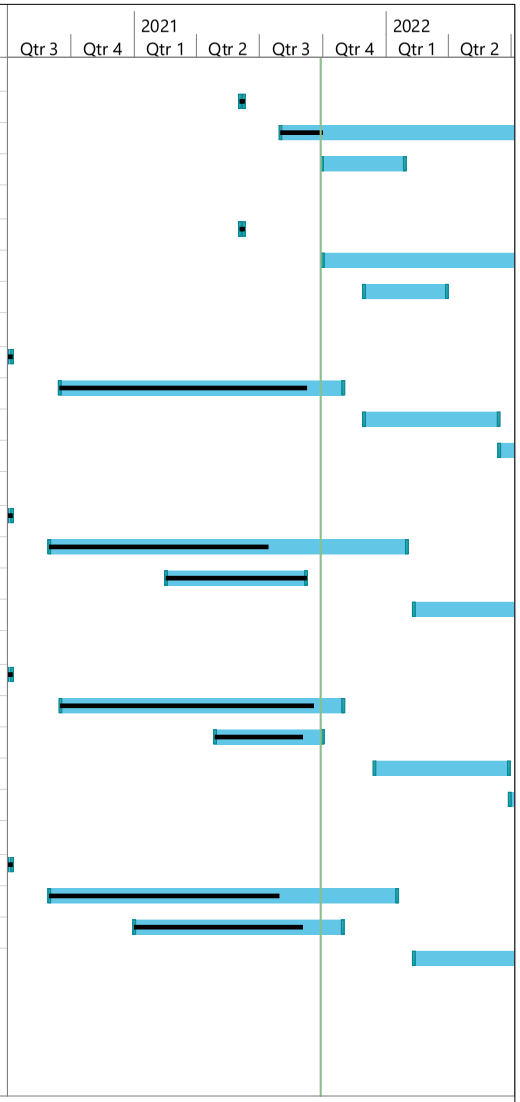
Project Progress

Percent complete is calculated based on phase duration.

Page 2

Figure 4.1. CMOM Activity Schedule

Budget ID	Task Name	% Complete	Start	Finish
E21062	**Modesto Pump Station Elimination**	4%	Thu 6/3/21	Fri 4/12/24
E21062	INITIATION & PROCUREMENT	100%	Thu 6/3/21	Tue 6/8/21
E21062	DESIGN	17%	Sun 8/1/21	Sun 7/31/22
E21062	EASEMENTS/LAND ACQUISITION	0%	Thu 9/30/21	Fri 1/28/22
E21066	**Pirogue Court Pump Station Elimination**	1%	Thu 6/3/21	Fri 4/12/24
E21066	INITIATION & PROCUREMENT	100%	Thu 6/3/21	Tue 6/8/21
E21066	DESIGN	0%	Fri 10/1/21	Sun 7/31/22
E21066	EASEMENTS/LAND ACQUISITION	0%	Tue 11/30/21	Wed 3/30/22
E21070	**Rosa Terrace PS Elimination**	36%	Wed 7/1/20	Sun 8/13/23
E21070	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21070	DESIGN	87%	Tue 9/15/20	Sun 10/31/21
E21070	CONSTRUCTION	0%	Tue 11/30/21	Mon 6/13/22
E21070	CLOSEOUT	0%	Tue 6/14/22	Sun 8/13/23
E21071	**Wathen Lane PS Rehabilitation**	35%	Wed 7/1/20	Wed 11/29/23
E21071	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21071	DESIGN	61%	Mon 8/31/20	Mon 1/31/22
E21071	EASEMENTS/LAND ACQUISITION	100%	Tue 2/16/21	Tue 9/7/21
E21071	CONSTRUCTION	0%	Thu 2/10/22	Thu 9/29/22
E21090	**Sonne Avenue PS Elimination**	35%	Wed 7/1/20	Mon 8/28/23
E21090	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21090	DESIGN	90%	Wed 9/16/20	Sun 10/31/21
E21090	EASEMENTS/LAND ACQUISITION	81%	Tue 4/27/21	Thu 9/30/21
E21090	CONSTRUCTION	0%	Wed 12/15/21	Tue 6/28/22
E21090	CLOSEOUT	0%	Wed 6/29/22	Mon 8/28/23
E21091	**Sanders Lane PS Rehabilitation**	37%	Wed 7/1/20	Wed 11/29/23
E21091	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21091	DESIGN	66%	Mon 8/31/20	Mon 1/17/22
E21091	EASEMENTS/LAND ACQUISITION	80%	Fri 1/1/21	Sat 10/30/21
E21091	CONSTRUCTION	0%	Thu 2/10/22	Thu 9/29/22



Data Date: 8/31/21

CMOM Project

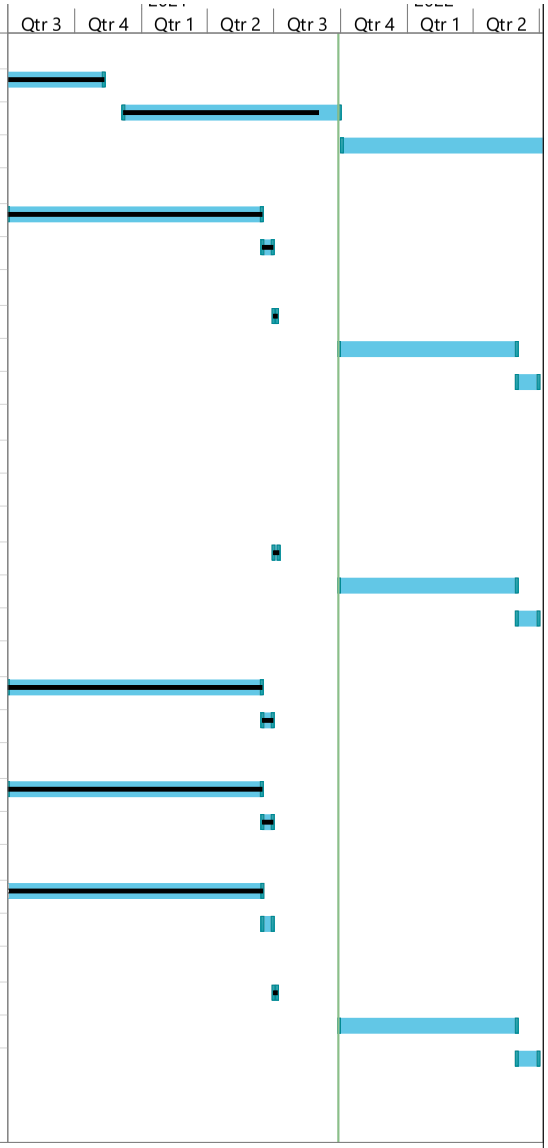
Project Progress

Percent complete is calculated based on phase duration.

Page 3

Figure 4.1. CMOM Activity Schedule

F20321	**Bluegrass Fields PS Renovation**	50%	Mon 3/16/20	Mon 10/31/22
F20321	DESIGN	100%	Mon 5/18/20	Tue 11/10/20
F20321	CONSTRUCTION	90%	Mon 12/7/20	Thu 9/30/21
F20321	CLOSEOUT	0%	Sun 10/3/21	Mon 10/31/22
G18444	**FY21 Plumbing Modification Program**	100%	Wed 7/1/20	Wed 6/30/21
G18444	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 6/15/21
G18444	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
H09215	**FY22 CMOM Infrastructure Rehabilitation Progr**	2%	Thu 7/1/21	Thu 6/30/22
H09215	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H09215	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H09215	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H16075	**Prospect Phase 2 Rehab**	1%	Thu 7/1/21	Mon 8/14/23
H16075	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H16075	DESIGN	0%	Thu 8/5/21	Fri 6/17/22
H18009	**FY22 Plumbing Modification Program**	1%	Thu 7/1/21	Thu 6/30/22
H18009	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
H18009	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H18009	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H18096	**FY21 CMOM Program Management Assistance**	100%	Wed 7/1/20	Wed 6/30/21
H18096	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 6/15/21
H18096	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
H18097	**FY21 CMOM, SCAP, AAM and FOG**	100%	Wed 7/1/20	Wed 6/30/21
H18097	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 6/15/21
H18097	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
H18172	**FY20 Information Governance**	98%	Mon 7/1/19	Wed 6/30/21
H18172	INITIATION & PROCUREMENT	100%	Mon 7/1/19	Wed 6/16/21
H18172	CLOSEOUT	0%	Wed 6/16/21	Wed 6/30/21
H19032	**FY22 CMOM SCAP, AAM and FOG**	2%	Thu 7/1/21	Thu 6/30/22
H19032	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H19032	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H19032	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22



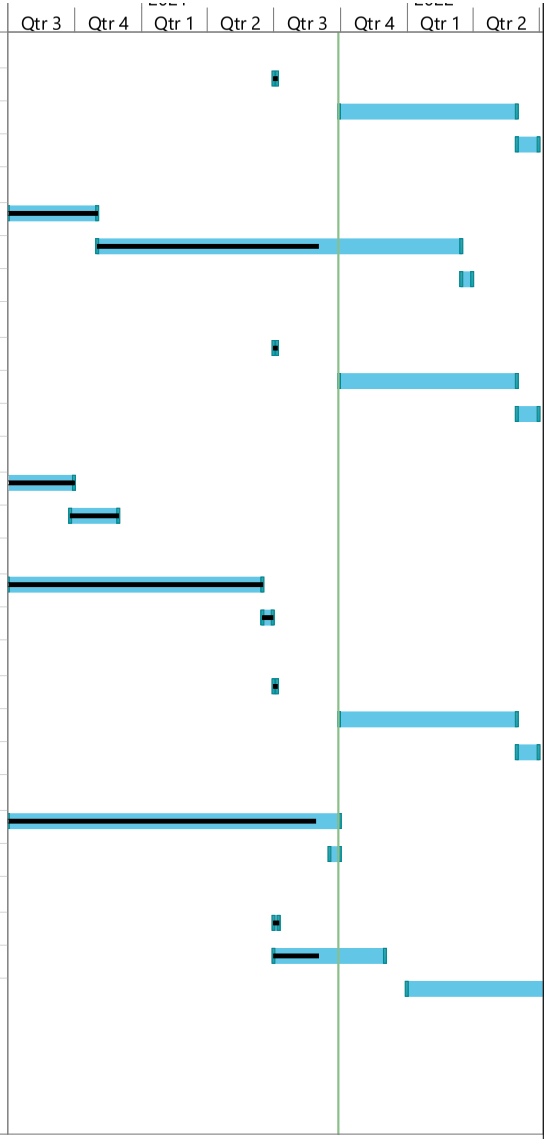
Data Date: 8/31/21 | CMOM Project | Project Progress

Percent complete is calculated based on phase duration.

Page 4

Figure 4.1. CMOM Activity Schedule

H19106	**FY22 CMOM Program Management Assistance**	2%	Thu 7/1/21	Thu 6/30/22
H19106	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H19106	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H19106	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H20056	**FY21 CMOM I and C Implementation**	59%	Wed 7/1/20	Thu 3/31/22
H20056	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Sun 11/1/20
H20056	SERVICE PERIOD	61%	Sun 11/1/20	Wed 3/16/22
H20056	CLOSEOUT	0%	Wed 3/16/22	Thu 3/31/22
H20057	**FY22 CMOM I and C Implementation**	2%	Thu 7/1/21	Thu 6/30/22
H20057	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H20057	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H20057	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H20061	**FY20 CMOM Gravity Line Cleaning and Inspectio**	100%	Mon 7/1/19	Mon 11/30/20
H20061	INITIATION & PROCUREMENT	100%	Mon 7/1/19	Wed 9/30/20
H20061	CLOSEOUT	100%	Fri 9/25/20	Mon 11/30/20
H20062	**FY21 CMOM Gravity Line Cleaning and Inspectio**	100%	Wed 7/1/20	Wed 6/30/21
H20062	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Wed 6/16/21
H20062	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
H20063	**FY22 CMOM Gravity Line Cleaning and Inspectio**	2%	Thu 7/1/21	Thu 6/30/22
H20063	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Tue 7/6/21
H20063	SERVICE PERIOD	0%	Wed 9/29/21	Tue 5/31/22
H20063	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
H21111	**FY21 FOG Program Support**	90%	Wed 7/1/20	Thu 9/30/21
H21111	INITIATION & PROCUREMENT	93%	Wed 7/1/20	Thu 9/30/21
H21111	CLOSEOUT	0%	Thu 9/16/21	Thu 9/30/21
H22010	**Barcoding Phase 2**	9%	Thu 7/1/21	Sat 6/24/23
H22010	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
H22010	DESIGN	40%	Thu 7/1/21	Wed 12/1/21
H22010	CONSTRUCTION	0%	Fri 12/31/21	Sun 8/28/22



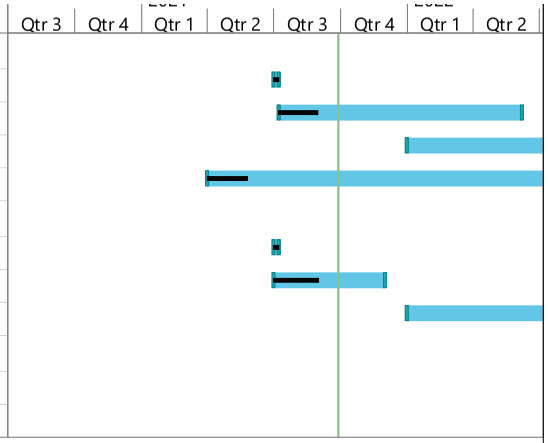
Data Date: 8/31/21 | CMOM Project | Project Progress

Percent complete is calculated based on phase duration.

Page 5

Figure 4.1. CMOM Activity Schedule

H22015	**Water Reuse Study**	10%	Thu 4/1/21	Thu 3/28/24
H22015	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
H22015	DESIGN	16%	Wed 7/7/21	Mon 6/6/22
H22015	CONSTRUCTION	0%	Fri 12/31/21	Wed 2/1/23
H22015	CLOSEOUT	5%	Thu 4/1/21	Thu 3/28/24
H22016	**AI Aquasight Software at CCWQTC**	9%	Thu 7/1/21	Sat 6/24/23
H22016	INITIATION & PROCUREMENT	100%	Thu 7/1/21	Wed 7/7/21
H22016	DESIGN	40%	Thu 7/1/21	Wed 12/1/21
H22016	CONSTRUCTION	0%	Fri 12/31/21	Sun 8/28/22
H22086	**Floyds Fork & Ohio River Condition Assessment**	0%	Wed 9/1/21	Sat 12/31/22
H22086	INITIATION & PROCUREMENT	100%	Wed 9/1/21	Tue 9/7/21
H22086	ASSESSMENT PERIOD	0%	Fri 10/1/21	Thu 12/1/22



Data Date: 8/31/21

CMOM Project

Project Progress

Percent complete is calculated based on phase duration.

Page 6

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Section 5: Program Activities for Sewer Overflow Response Protocol

5.1. Program Background

Per Paragraph 38.c. of the 2ACD, MSD's initial Sewer Overflow Response Protocol (SORP) was approved by KEEC/EPA on August 22, 2006. MSD is required to review the SORP annually and propose changes as appropriate as a component of the 2ACD Mid-Year Report, and provide updates to the Louisville Regional Office of the Division of Water within 15 days of incorporation of the update. The approved document can be viewed on the MSD Project WIN website **msdprojectwin.org**.

The following activities were performed during this reporting period.

5.2. Overflow Management and Field Documentation

FY21 Reporting Period

- Documented overflows and unauthorized discharges to waters of the US (WUS) during the reporting period as documented in 1.1. Discharge Definitions and Documentation.
- Reported discharges that reached the WUS within 24 hours as shown in Table 5.1.

Table 5.1. Discharge Notifications

TOTAL DISCHARGES	REPORTED WITHIN 24 HOURS	RESULT
183	168	92%

- Hauled sewage from pump stations to mitigate sanitary overflows as indicated in Table 5.2. One site was routinely (3 or more times per year) hauled to prevent overflows during rain events, depending on the manitude and location of the storm.
- Monitored approximately 143 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 reporting period, MSD executed a total of 566 wet weather inspections on a toptal of 6 days, and documented 180 unauthorized discharges through route reconnaissance.
- Monitored the West County route via telemetry. Discharge work orders are created as required based on telemetry observations.
- Continued to monitor over 300 sites via telemetry.

FY22 Reporting Period

- Continue to monitor data, train staff and update information as needed.
- Continue to monitor over 300 sites via telemetry.
- Continue to haul to prevent overflows and backups during rain events until system improvements are completed.
- Continue to monitor documented collections system SSO sites, which have been grouped into routes based on the range of rainfall rates necessary to cause a SSO.

Table 5.2. Hauling Operations

FY	ELECTRICAL PROBLEMS AT MSD	GENERAL NATURE	LACK OF SYSTEM CAPACITY	MECHANICAL FAILURE	POWER OUTAGE (LG&E)	STRUCTURAL FAILURE	UTILITY DAMAGED MSD ASSET
FY14	0	0	412,100	38,000	0	74,050	0
FY15	14,500	0	84,000	0	0	70,000	3,000
FY16	50	5,000	160,860	7,500	0	28,500	0
FY17	29,000	2,000	767,500	13,700	38,700	91,800	1,000
FY18	7,000	0	410,200	26,000	0	5,055,100	0
FY19	0	0	716,670	25,000	0	232,750	3,000
FY20	0	0	112,400	0	0	34,000	0
FY21	0	0	131,100	20,000	0	20,000	0

- Continue the daily, monthly and quarterly data reviews with staff from Engineering and Operations Divisions to ensure accuracy and consistency in reporting.
- Schedule additional field reviews of SORP procedures after rain events to both ensure successful implementation and to assist with the annual SORP overall review.

5.3. Regulatory Reporting and Data Management

FY21 Reporting Period

- Conducted daily review with staff to perform quality control on discharge work orders.
- Conducted a monthly review of the discharge work orders and updated the associated assets in IPS as needed.
- Performed a detailed review and trend analysis on the discharge data and incorporated the findings into the quarterly SORP training.

FY22 Reporting Period

- Continue to perform quality control on discharge work orders with appropriate staff.
- Update assets in IPS when new overflow locations are identified.
- Continue to review the overflow data for trends. These trends are discussed with staff in the Quarterly SORP training and documented in the Quarterly Reports.

5.4. Staff Training & Communication

FY21 Reporting Period

- Continued training through the online training delivery system, which allows more flexibility for employees to complete training at convenient times during the quarter and to integrate SORP training with new employee and contractor orientation. SORP training activities are detailed in Table 5.3. Training module descriptions can be found in the latest vesrion of the SORP manual, available at **msdprojectwin.org**.

FY22 Reporting Period

- Continue to integrate SORP training with new employee and contractor orientation.
- Schedule and administer SORP Quarterly and Annual Training.
- Continue to review and update the data associated with overflows.

5.5. Public Notification and Communication

Refer to Section 6: Program Activities for Public Outreach, Education, Notification and Participation for information regarding public notification.

Table 5.3. SORP Training Details

TRAINING MODULE	STAFF TRAINED
Annual	381
Assessment, Mitigation, & Documentation	258
Preparing for Overflows, Monitoring, & Mobilization	270
Public Notification & Overflow Cleanup	269
Reporting & Follow-up	270

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Section 6: Program Activities for Public Outreach, Education, Notification and Participation

6.1. Public Notification Program

MSD has developed a program aimed at notifying the community of the objectives of the 2ACD, and ways to reduce the risks of coming into contact with sewage overflows.

6.1.1. Overflow Advisory Signs

FY21 Reporting Period

- Updated sign inventory to ensure all needed signs are in place.
- Performed the annual sign inspection process in the spring. There were 1,165 signs inspected, 1,034 signs cleaned, and 46 replaced.

FY22 Reporting Period

- Perform an evaluation comparing the documented overflows with existing sign locations to ensure all needed signs are in place.
- Perform the annual sign inspections as scheduled in IPS.

6.1.2. Electronic Notifications

FY21 Reporting Period

- Continued to utilize the Louisville Metro e-mail alert system to notify customers who voluntarily signed up to receive email alerts regarding sewer overflows and to broadcast messages to the public.
- Provided notification on the MSD's website (**louisvillemsd.org)** and MSD's 2ACD website (**msdprojectwin.org**) for wet weather overflows during rain events and unauthorized discharges of more than 1,000 gallons.

FY22 Reporting Period

- Continue email alerts to customers who signed up to receive the information.
- Continue to provide web notification for wet weather overflows and significant unauthorized discharges.

6.1.3. Print Notifications

FY21 Reporting Period

- Sent 732 public outreach letters to residents in areas that have FOG issues.
- Mailed 786 Project WIN information packets to customers who called with questions about the Amended Consent Decree – specifically regarding overflows, discharges, plumbing modification and the surcharge fee.

Table 6.1. Metro TV Broadcasts

PROJECT	PHASE	AIRINGS
Portland CSO Basin	Conceptual Design Meeting	15
Southwestern Parkway CSO Basin	Construction Meeting	42
Waterway Protection Tunnel	Construction Meeting	72

- In April 2021, distributed the annual mailing to over 20,000 residents within 500 feet of Beargrass Creek and the Ohio River, advising the use of caution around streams during and immediately following rain events as they may contain untreated sewage.
- Provided annual notification to community at large in the Courier Journal in a newspaper advertisement to use caution around streams during and immediately following rain events as they may contain untreated sewage.

FY22 Reporting Period

- Continue to send out FOG residential public outreach letters to areas that have FOG issues.
- Continue to mail Project WIN information packets to customers who call with questions about the Amended Consent Decree – specifically regarding overflows, discharges, plumbing modification and the surcharge fee.
- Provide annual notification and informational material to the community, providing a general overview and awareness relating to public health impacts associated with sewer overflows and an update of Project WIN initiatives by May 1, 2022.
- Distribute, prior to May 1, 2022, the annual mailing to residents within 500 feet of Beargrass Creek and the Ohio River, advising the use of caution around streams during and immediately following rain events as they may contain untreated sewage.

6.2. Public Education Programs

A public education program about Louisville MSD's primary business functions of wastewater treatment, stormwater management and flood protection has been developed and is in use across multiple platforms. MSD uses earned media through local and regional outlets to educate the public about MSD's vital services, initiatives, 2ACD projects and more.

FY21 Reporting Period

- Continued to identify areas of public knowledge requiring additional effort and attention and target public education efforts to fill the gaps.
- Shared the benefits of fostering good water quality.
- Continued to provide information on MSD's Green Infrastructure incentive programs, Louisville's tree canopy, sewer overflow prevention, pollution prevention and other topics, including the events listed in Table 6.2.

FY22 Reporting Period

- Continue to re-tool public education efforts to address areas of public knowledge requiring additional effort and attention.

6.2.1. Radio and TV Activities

FY21 Reporting Period

- Coordinated with Metro TV to air broadcasts of public input meetings listed in Table 6.1. More information about public information meetings can be found in 6.3.1. IOAP Project and Program Meetings.
- Continued to utilize various media outlets, including TV, radio and the newspaper, to serve as a conduit for disseminating information to the public.

Table 6.2. Public Education Workshops & Activities

DATE(S)	EVENT	BENEFIT / RELEVANCE / IMPACT
July 14, 2020	UofL Green Infrastructure Walking Tour	Louisville MSD staff host a tour of green infrastructure, stormwater and sanitary facilities on the University of Louisville Belknap Campus.
July 22, 2020	SummerWorks	Collaboration with ECHO and SummerWorks to work with youth on an infiltration trench installation.
September 23, 2020	KAMM Presentation	Virtual presentation at the Kentucky Association of Mitigations Managers Annual Conference about grant funding for flood and water quality projects
October 6, 2020	WEFTC	Virtual presentation at the Water Environment Federation Technical Exhibit & Conference (WEFTEC) on Green Infrastructure Maintenance.
October 16, 2020	Kentucky Conservation Conversations Podcast	Louisville MSD Executive Director Tony Parrott discussed MSD and Water Quality in Jefferson County.
January 21, 2021	MSD Can You Dig It Event	Forum for contractors and consultants to learn about MSD projects and how to do business with MSD.
March 9, 2021	University of Louisville Green Engineering Class	Discussed Green Infrastructure, water quality and watershed topics with a class at the University of Louisville
April 14, 2021	MSD Virtual Field Day	MSD conducted the Annual Field Day event virtually due to COVID-19 restrictions. MSD used Microsoft Teams to present on green infrastructure, current projects, and outreach opportunities.
May 26, 2021	KSPE Presentation	2021 Infrastructure Report Card for America, including topics on stormwater.

FY22 Reporting Period

- Continue to utilize radio and TV to serve as a conduit for disseminating information to the public.
- Continue coordination with Metro TV to show IOAP project public input meetings and special interest material.

6.2.2. Printed Media Activities

FY21 Reporting Period

- Purchased public service advertising messages in the Courier Journal, Business First and Louisville Magazine, reaching an estimated 306,000 for 2ACD messaging.
- Provided printed copies of the StreamLine to 700 customers and staff each month for the first half of the fiscal year, then quarterly. 2ACD-related articles are contained in each issue of this newsletter.
- Augmented print ads with digital campaign to augment the print ads, reaching more than 831,000. The digital online campaign continued to increase awareness of the Waterway Protection Tunnel project, sewer overflows and What Not To Flush.
- Published a Waterfront and Beargrass Creek Walking & Paddling Guide, which includes information on CSOs, green infrastructure and ideas to reduce SSOs and mitigate CSOs.
- Utilized direct mail communications through post card, letters and bill inserts external communications.

FY22 Reporting Period

- Continue to utilize printed media to serve as a conduit for disseminating information to the public.

- Continue to send the MSD Streamline to customers and staff each month.

6.2.3. Digital Media Activities

Social media, MSD's website (**louisvillemsd.org)**, and MSD's 2ACD website (**msdprojectwin.org**) are important methods to reach and educate the public. MSD is on Facebook, Twitter and Instagram.

FY21 Reporting Period

- Maintained the 2ACD website, which includes a repository of public documents related to Project WIN, tips for customers to help control overflows through their personal actions, information about the history and background of Project WIN and a place to sign up for overflow advisory emails warning when significant precipitation has caused overflows in MSD's system. The Project WIN website can also be accessed by navigating through the Consent Decree link on MSD's website.
- Maintained the Overflow Advisory Level indicator on MSD's website and MSD's 2ACD website. The indicator provides important information on the condition of area streams and shows a warning if overflows are likely to be happening or have happened in the past 48 hours.
- Included 2ACD compliance, wastewater facility upgrades, and aging infrastructure as key topics in the Critical Repair & Reinvestment Plan. Public education about this initiative continues to include posts on MSD's website and social media accounts.
- Released monthly social media ads containing messages related to upcoming IOAP project public meetings when applicable. Released posts on topics including environmental awareness, outreach programs, events, health and safety, and public meetings. Public outreach campaigns supported included World Environment Day, World Oceans Day, Pollinator Week, Skills USA, and Ohio River Sweep.
- Posted the Streamline to Twitter and Facebook accounts, and online at **louisvillemsd.org/publications**.
- Posted the Waterfront and Beargrass Creek Walking & Paddling Guide online at **louisvillemsd.org/programs/education** and **louisvillemsd.org/at-home**.
- Continued to provide information on MSD's green infrastructure incentive programs, Louisville's tree canopy, sewer overflow prevention, pollution prevention and other topics.
- Created a Mandy the Salamander video and storybook to educate younger children about the importance of clean waterways, available at **louisvillemsd.org/programs/education/meet-mandy-the-salamander**.

FY22 Reporting Period

- Continue to post Project WIN information on the website.
- Continue to provide information through social media platforms.

6.3. 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 2ACD program elements.

Due to COVID-19 restrictions, outreach programs were limited during the reporting period.

FY21 Reporting Period

- Presented, attended, and / or facilitated meetings related to green infrastructure as detailed in Table 6.3.
- Presented, attended, and / or facilitated meetings related to clean streams as detailed in Table 6.4.

Table 6.3. Green Infrastructure Workshops & Activities

DATE(S)	EVENT	BENEFIT / RELEVANCE / IMPACT
March 1, 2021	Native Seed Give Away	Distributed native seed packets.
March 9, 2021	University of Louisville Green Engineering Class	Discussed Green Infrastructure, water quality and watershed topics with a class at the University of Louisville
April 14, 2021	MSD Virtual Field Day	MSD conducted the Annual Field Day event virtually due to COVID-19 restrictions. MSD used Microsoft Teams to present on green infrastructure, current projects, and outreach opportunities.
April 19, 2021	River to River Program (Online)	MSD conducted a workshop for freshman at Holy Cross High School about the different aspects of water from wastewater, drinking water, to stormwater, water quality and flooding.
April 23, 2021	River to River Program (Classroom)	Heritage Engineering used the MSD flood model to give a presentation to 3rd graders at Portland Elementary School about flood safety and flooding and how development impacts watersheds and water quality.
April 24, 2021	Seventh Street Garden Tree Planting	Planted more than 50 trees in the combined sewer area to in the combined sewer area in an effort to address drainage, heat island, and water quality issues.
May 15, 2021	South Louisville Tree Planting Projects	Partnered with Louisville Grows, Division of Community Forestry and Operation Brightside to plant 167 new trees in the combined sewer area in an effort to address drainage, heat island, and water quality issues.

Table 6.4. Clean Stream Workshops & Actiivities

DATE(S)	EVENT	BENEFIT / RELEVANCE / IMPACT
April 24, 2021	Metro Council District 8 Stream Cleanup	Beargrass Creek stream cleanup as part of Earth Day events.
May 8, 2021	Middle Fork Beargrass Creek Cleanup	MSD partnered with Kentucky Waterways Alliance, Louisville Metro Parks and the City of St Matthews to organize a clean up at 3 locations along this stream.
May 22, 2021	Ohio River Mini-Sweep	MSD and ORSANCO sponsored event to clean up along the Ohio River

- Presented, attended, and / or facilitated student outreach as detailed in Table 6.5.
- Conducted the Annual Field Day event virtually using Microsoft Teams to present on green infrastructure, current projects, and outreach opportunities.

6.3.1. IOAP Project and Program Meetings

6.3.1.1. Wet Weather Team

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.

FY21 Reporting Period

- Wet Weather Team meetings were held on July 22, 2020 and April 21, 2021.

Table 6.5. Outreach Activities for Students

DATE(S)	EVENT	BENEFIT / RELEVANCE / IMPACT
March 9, 2021	University of Louisville Green Engineering Class	Discussed Green Infrastructure, water quality and watershed topics with a class at the University of Louisville
April 5, 12, 19 and 26, 2021	Louisville MSD's Massive Tunnel Project	MSD partnered with the Louisville Free Public Library to present information on the Waterway Protection Tunnel, how it was built and how it contributes to safe, clean water. Presentation targeted at 2nd-5th grade students.
April 26, 2021	Meet our Louisville River Fish	MSD partnered with the Louisville Free Public Library to present information on local aquatic life and the ecosystem in local streams and how the Waterway Protection Tunnel helps keep safe, clean waterways.
April 19, 2021	River to River Program (Online)	MSD conducted a workshop for freshman at Holy Cross High School about the different aspects of water from wastewater, drinking water, to stormwater and flooding.
April 23, 2021	River to River Program (Classroom)	Heritage Engineering used the MSD flood model to give a presentation to 3rd graders at Portland Elementary School about flood safety and flooding and how development impacts watersheds and water quality.
Ongoing	Kentucky Science Center Waterway Protection Tunnel Exhibit	MSD partnered with the Kentucky Science Center to create an exhibit on the Waterway Protection Tunnel and how it keeps waterways safe and clean for local wildlife.

FY22 Reporting Period

- Schedule Wet Weather Team meetings as needed.

6.3.1.2. Structured Public Involvement Meetings

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 illustrated in Figure 6.1. 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 **msdprojectwin.org/public-input**.

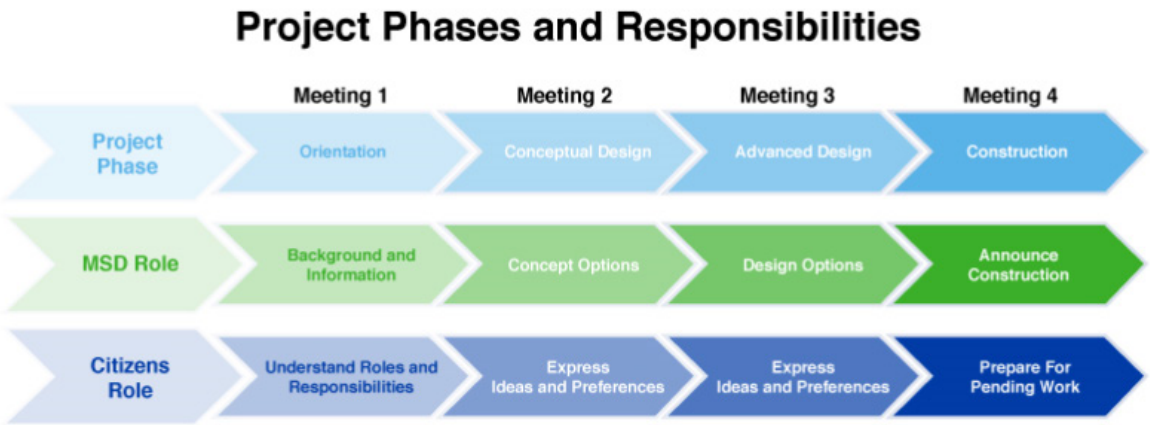
FY21 Reporting Period

- MSD held no Structured Public Involvement meetings during the current reporting period.

FY22 Reporting Period

- Schedule Structured Public Involvement meetings as needed.

Figure 6.1. MSD's Structured Public Involvement Meeting Process



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Section 7: Program Activities for Asset Management

Per Paragraph 40 of the 2ACD, MSD was required to submit an Asset Management (AM) Plan to KEEC/EPA for review and joint approval by June 30, 2021.The Strategic Asset Management Plan was submitted on June 30, 2021 and is currently under review by KEEC/EPA. The unapproved document can be viewed on the MSD 2ACD website, **msdprojectwin.org**. Highlights of the AM program implementation are outlined below.

7.1. Strategic Asset Management Plan

Per Paragraph 40, the AM program should provide a long-term maintenance and funding strategy for the rehabilitation and renewal of MSD's aging sewer system and WQTC infrastructure, including practices and procedures to ensure that planned maintenance can be conducted and capital assets can be repaired, replaced or upgraded on time with funding available to cover the costs. MSD developed a Strategic Asset Management Plan (SAMP) that, when approved, will be the primary document that guides MSD's efforts in the administration of asset management activities. It brings focus to the strategy for improved asset management, and provides the overarching framework for achieving the mission, strategic goals, and critical success factors of the AM Program, as described in the AM Program Charter. Rather than being an extensive manual of practice on AM, the SAMP is a concise framework that creates a consistent approach for all MSD divisions which operate and maintain the assets. The SAMP framework provides the "rule book" for how facility and system plans will be created and implemented to help meet the established service level expectations and other operational objectives at the lowest life cycle cost.

The SAMP serves several purposes:

- Provides a standardized approach for the overall AM framework and business rules across all facilities and systems.
- Provides information about the information systems where the asset inventory data are located.
- Provides criticality criteria to determine individual asset inspection, replacement, and rehabilitation rankings.
- Provides information on the established levels of service (LOS) and performance measures.
- Identifies condition assessment, operation and maintenance, and renewal and replacement strategies and techniques.
- Identifies currently known data requirements and program enhancements.
- Provides a framework for capital planning and decision making.

In addition to the SAMP, Tactical Asset Management Plans (TAMPs) will define activities at the facility level. An Implementation Plan, or AM Roadmap, defines the sequencing, scheduling, and prioritization of asset management program activities. The AM Roadmap includes prioritized SAMP improvement strategies recommended for the ultimate fulfillment of a successful AM program.

Per Paragraph 40.d., KEEC, EPA and MSD acknowledge that implementation of the SAMP will result in the plan becoming a dynamic document that will be updated over time with greater specificity regarding specific projects for rehabilitation. The SAMP will be reviewed annually, and any significant changes to the SAMP submitted on June 30, 2021 will be documented in subsequent 2ACD Annual Reports and the updated document will be posted on MSD's 2ACD website, **msdprojectwin.org**.

7.1.1. Tactical Asset Management Plans

In recognition of the fact that each facility and system owned and operated has specific assets, conditions, and requirements under which they are operated, the management of these facility and system assets are also governed by TAMPs. The TAMP structure is like that of the SAMP, but the TAMP describes the specifics for AM at

a particular location or within a particular system and identifies actions that are being implemented to achieve the standards and goals listed in the SAMP.

As TAMPs are completed, sections will be added to subsequent 2ACD Annual Reports. The TAMPs will also be updated annually, and any significant changes to the TAMPs or progress updates will be documented in subsequent 2ACD Annual Reports.

7.2. Asset Management Program Costs

Per Paragraph 40.e. of the 2ACD, MSD is required to spend a total of $375M on AM projects by June 30, 2035. Eligible costs include work and/or services associated with planning, inspection, field testing, design, permitting, bidding, construction, commissioning (asset start-up), rehabilitation, replacement, and renewal of MSD's Sewer System and WQTC infrastructure. Costs that are not eligible costs to be counted include work and/or services associated with asset management software, programming, financing, grant or loan applications, or annual operating budget line items (power, chemicals, labor, or services associated with preventative or corrective maintenance). Table 7.1 includes a list of actual costs spent on projects that meet the definition provided above for the current reporting period. Subsequent reports will include actual costs for the current reporting period as well as cumulative costs after June 30, 2020. Note that projects in Table 7.1 are based on date of expenditure, and may include projects with completion dates in a prior reporting period that exclude their inclusion from Figure 7.1.

7.3. AM Activity Schedule

A Gantt chart including progress of AM projects during the reporting period can be found in Figure 7.1.

Table 7.1. Asset Management Program Costs - Current Reporting Period

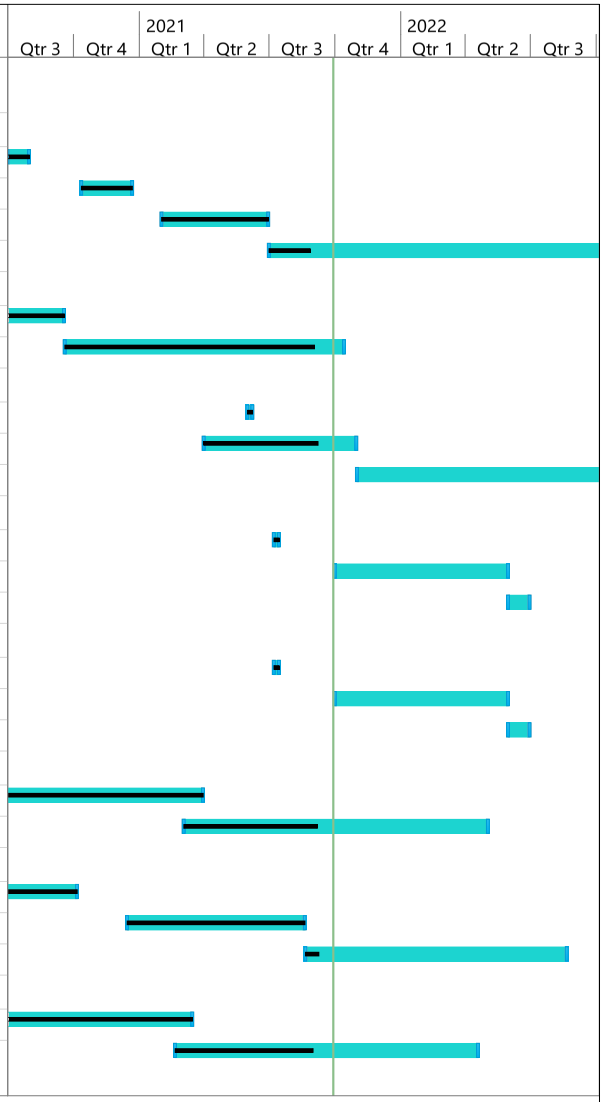
BUDGET ID	PROJECT NAME	ACTUAL EXPENDITURES
A14129	Gorham Way Pump Station Elimination	$197,686
A20320	Broadfern PS Elimination	$236,012
A21241	26th Street Sewer Repair Emergency	$846,166
D15020	MFWQTC Cake Pump Phase II	$952,154
D15024	MFWQTC Chiller Replacement	$161,918
D16272	CCWQTC INFLUENT PS MCC UPGRADES	$508,255
D18114	MFWQTC LAB EQUIPMENT UPGRADE	$395
D18128	DRGWQTC PAVING	$312,659
D18285	ORFM Odor and Corrosion Control	$1,470,066
D18292	DRGWQTC Clarifier Grout Repair and RAS Gate Replacement	$1,092,213
D18453	FY21 MFWQTC Equipment RR	$514,836
D18489	FAIRMOUNT RD PS FM EXT PHASE 1	$119,896
D19028	FY20 MFWQTC UPGRADE PLCs	$82,301
D19039	CCWQTC Effluent Parshall Flume Upgrade	$962,846
D19227	MFWQTC PRIMARY SLUDGE LINE REPLACEMENT	$5,778
D19275	MDS DOWNSTREAM FLOW METER	$37,218
D19285	BELLS LANE PHASE II	$9,941
D19286	SWPS Gas Monitoring and SP1 Odor Control	$65,487
D20012	SGC RTC Enhancements	$77,697
D20016	DRG ADMIN & RAS BUILDINGS HVAC	$564,297
D20017	CCWQTC Sodium Aluminate Building	$725,019
D20030	FY20 CCWQTC EQUIPMENT R&R	$59,323
D20033	FY21 Regional WQTC Equipment RR	$706,369
D20034	FY20 FFWQTC EQUIPMENT RENEWAL & REPLACE	$103,000
D20036	FY20 DRGWQTC EQUIPMENT R&R	$20,871
D20148	FFWQTC REGIONAL FACILITIES PLAN UPDATE	$64,417
D20216	FY20 STRAND CCWQTC ENGINEERING SUPPORT	$2,040
D20218	FY20 JACOBS MFWQTC ENGINEERING SUPPORT	$2,090
D20219	FY20 HDR MFWQTC ENGINEERING SUPPORT	$57,436
D20223	Bells Lane WWTF Polymer Dosing System Updates	$72,770
D20226	BELLS LANE & MF HW BAR SCREEN GRIT STUDY	$51,441
D20262	MFWQTC GROUNDWATER WELLS STUDY/REPAIR	$214,584
D20278	DRGWQTC RAS BLDG ELECTRICAL MODIFICATIONS	$148,314
D20304	MFWQTC Headworks and Dumpster Building Repairs and Primary Blower Building Stair Repairs	$294,512
D20306	MFWQTC LOADING DESIGN CRITERIA EVALUATION	$39,323
D20314	MFWQTC Sewer and Manhole Condition Assessment and Repair	$130,761
D20337	FFWQTC ARC FLASH STUDY	$23,085
D20351	FLOYDS FORK INTERCEPTOR - DESIGN	$632,483

BUDGET ID	PROJECT NAME	ACTUAL EXPENDITURES
D21059	Asset Management Plan Development	$530,637
D21092	FY21 WQTC Engineering Support	$69,212
D21129	DRGWQTC ELEVATOR REPAIRS	$131,886
D21176	MFWQTC DIGESTER BLDG CEILING TILES	$12,340
D21181	MFWQTC SODIUM HYPOCHLORITE BLDG FLOOR REPAIR	$15,261
D21191	CCWQTC Dewatering Planning Evaluation	$89,958
D21208	MFWQTC ADMIN BLDG ENV DAMAGE ASSMT	$31,071
D21209	DRG WWPS Vibration Analysis Testing of Pump 1A and 2B	$11,394
D21222	DRG GRIT BUILDING ROOF REPLACEMENT	$14,457
D21223	HCWQTC GRIT & PROCESS WATER BLDGS ROOF REPLACEMENT	$10,474
D21224	DRG SO HYPO &WATER PROCESS BLDGS ROOF REPLACEMENT	$20,800
D21226	DRG WWPS BLDG ROOF REPLACEMENT	$33,583
D21230	DRG RAS Pumps 2 and 3 Replacement	$28,633
D21232	FY21 MFWQTC Process Improvement	$12,686
D21233	MFWQTC MEB & SERVICE/BLOWER BLDGS ROOF	$58,830
D21247	MFWQTC HVAC UPGRADES	$65,980
E18468	FY21 CMOM Collection System PS RR	$636,568
E19211	FY20 OPERATIONS R&R	$304,625
E19212	FY21 Operations Renewal and Replacement	$183,179
E21070	Rosa Terrace PS Elimination	$165,112
E21071	Wathen Lane PS Rehabilitation	$108,215
E21090	Sonne Avenue PS Elimination	$125,033
E21091	Sanders Lane PS Rehabilitation	$80,039
F20321	Bluegrass Fields PS Renovation	$230,880
F21061	Clifton Heights Storage Basin Sump Pump Improvements	$81,356
F21123	10TH ST FPS MCC REPLACEMENT	$275,447
F21124	STARKEY & SHAWNEE FPS ARC FLASH STUDIES	$45,180
F21153	SWPS Influent Gate Seal Replacement	$134,147
F21202	SGC Emergency	$10,355
G18417	MFWQTC ADMIN BLDG ROOF REPLACEMENT	$36,798
G19001	FY19 RENEWAL & REPLACEMENT	$18,100
G20028	MFWQTC ELEVATOR REPAIRS	$79,717
G21001	FY21 Renewal and Replacement	$5,116,422
G21220	FY21 ACOUSTIC EQUIPMENT	$52,935
G21221	FY21 MUDMASTER	$53,958
G21231	FY21 WQTC & FPS ROOF ASSESSMENTS	$18,000
H16013	FY20 CMOM SCAP, AAM & FOG	$20,655
H17103	DRGWQTC Pumping Package	$87,753

BUDGET ID	PROJECT NAME	ACTUAL EXPENDITURES
H19095	FY20 PS RR	$8,400
H20055	FY20 CMOM I&C IMPLEMENTATION	$7,109
H20056	FY21 CMOM I and C Implementation	$56,854
H20061	FY20 CMOM GRAVITY LINE CLEAN & INSPECT	$299,229
H20153	SWPS FLOOD REPAIR	$90,111
H20297	FY20 ASSET MANAGEMENT ASSISTANCE	$101,240
Total		$21,130,281

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
	MSD Asset Management Annual Commitments Schedule	60%	Sun 3/29/09	Fri 9/18/26
A14129	**Gorham Way Pump Station Elimination**	42%	Wed 7/1/20	Mon 10/31/22
A14129	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Fri 7/31/20
A14129	DESIGN	100%	Mon 10/12/20	Tue 12/22/20
A14129	CONSTRUCTION	100%	Mon 2/1/21	Wed 6/30/21
A14129	CLOSEOUT	12%	Thu 7/1/21	Mon 10/31/22
A20320	**Broadfern PS Elimination**	93%	Fri 3/13/20	Thu 10/14/21
A20320	CONSTRUCTION	100%	Tue 6/9/20	Thu 9/17/20
A20320	CLOSEOUT	89%	Fri 9/18/20	Thu 10/14/21
A21241	**26th Street Sewer Repair Emergency**	54%	Thu 4/1/21	Sat 1/28/23
A21241	INITIATION & PROCUREMENT	100%	Tue 6/1/21	Mon 6/7/21
A21241	CONSTRUCTION	75%	Thu 4/1/21	Sun 10/31/21
A21241	CLOSEOUT	0%	Mon 11/1/21	Sat 1/28/23
C22052	**Rehabilitation Project Management Support**	1%	Thu 7/8/21	Thu 6/30/22
C22052	INITIATION & PROCUREMENT	100%	Thu 7/8/21	Wed 7/14/21
C22052	SERVICE PERIOD	0%	Fri 10/1/21	Tue 5/31/22
C22052	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
C22054	**PSC Program Support**	1%	Thu 7/8/21	Thu 6/30/22
C22054	INITIATION & PROCUREMENT	100%	Thu 7/8/21	Wed 7/14/21
C22054	SERVICE PERIOD	0%	Fri 10/1/21	Tue 5/31/22
C22054	CLOSEOUT	0%	Tue 5/31/22	Thu 6/30/22
D15020	**MFWQTC Cake Pump Phase II**	82%	Mon 3/12/18	Tue 5/3/22
D15020	CONSTRUCTION	100%	Fri 11/1/19	Wed 3/31/21
D15020	CLOSEOUT	44%	Thu 3/4/21	Tue 5/3/22
D15024	**MFWQTC Chiller Replacement**	60%	Fri 4/27/18	Sun 8/21/22
D15024	DESIGN	100%	Thu 8/29/19	Tue 10/6/20
D15024	CONSTRUCTION	100%	Tue 12/15/20	Fri 8/20/21
D15024	CLOSEOUT	5%	Sat 8/21/21	Sun 8/21/22
D16272	**CCWQTC Influent PS MCC Upgrades**	69%	Thu 2/11/16	Tue 4/19/22
D16272	CONSTRUCTION	100%	Mon 5/25/20	Mon 3/15/21
D16272	CLOSEOUT	45%	Sat 2/20/21	Tue 4/19/22



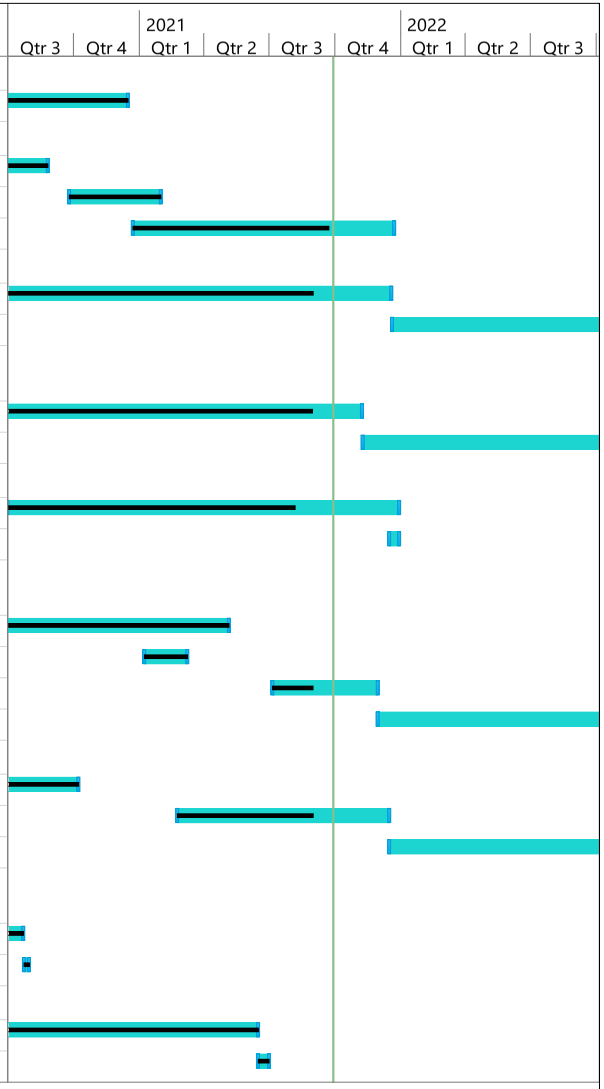
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 1

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
D18127	**DRGWQTC Hypo Containment**	100%	Sat 12/1/18	Wed 12/16/20
D18127	CLOSEOUT	100%	Tue 12/17/19	Wed 12/16/20
D18128	**DRGWQTC Paving**	86%	Tue 5/21/19	Thu 12/23/21
D18128	DESIGN	100%	Mon 9/23/19	Wed 8/26/20
D18128	CONSTRUCTION	100%	Fri 9/25/20	Sun 1/31/21
D18128	CLOSEOUT	75%	Wed 12/23/20	Thu 12/23/21
D18285	**ORFM Odor and Corrosion Control**	63%	Mon 1/1/18	Thu 2/16/23
D18285	CONSTRUCTION	81%	Mon 5/18/20	Sun 12/19/21
D18285	CLOSEOUT	0%	Mon 12/20/21	Thu 2/16/23
D18292	**DRGWQTC Clarifier Grout Repair and RAS Gate Replacement**	68%	Wed 1/31/18	Sun 1/8/23
D18292	CONSTRUCTION	90%	Mon 12/9/19	Mon 11/8/21
D18292	CLOSEOUT	0%	Tue 11/9/21	Sun 1/8/23
D18453	**FY21 MFWQTC Equipment RR**	71%	Wed 7/1/20	Thu 12/30/21
D18453	INITIATION & PROCUREMENT	74%	Wed 7/1/20	Thu 12/30/21
D18453	CLOSEOUT	0%	Thu 12/16/21	Thu 12/30/21
D18489	**Fairmount Road Pump Station Force Main Extension - Phase 1**	51%	Thu 8/15/19	Fri 12/30/22
D18489	DESIGN	100%	Thu 6/25/20	Thu 5/6/21
D18489	EASEMENTS/LAND ACQUISITION	100%	Fri 1/8/21	Tue 3/9/21
D18489	CONSTRUCTION	38%	Tue 7/6/21	Tue 11/30/21
D18489	CLOSEOUT	0%	Tue 11/30/21	Fri 12/30/22
D19039	**CCWQTC Effluent Parshall Flume Upgrade**	50%	Tue 6/4/19	Fri 12/16/22
D19039	DESIGN	100%	Sun 9/1/19	Thu 10/8/20
D19039	CONSTRUCTION	64%	Tue 2/23/21	Thu 12/16/21
D19039	CLOSEOUT	0%	Thu 12/16/21	Fri 12/16/22
D19043	**MFWQTC OGA PTO and Chlorine Rail Car Facility Demolition**	100%	Tue 6/4/19	Thu 7/30/20
D19043	DESIGN	100%	Sun 9/15/19	Thu 7/23/20
D19043	CLOSEOUT	100%	Fri 7/24/20	Thu 7/30/20
D19223	**DRGWQTC WWPS Finite Element Analysis Phas**	100%	Mon 7/2/18	Wed 6/30/21
D19223	DESIGN	100%	Wed 9/12/18	Tue 6/15/21
D19223	CLOSEOUT	100%	Tue 6/15/21	Wed 6/30/21



Data Date: 8/31/21

NMC Project

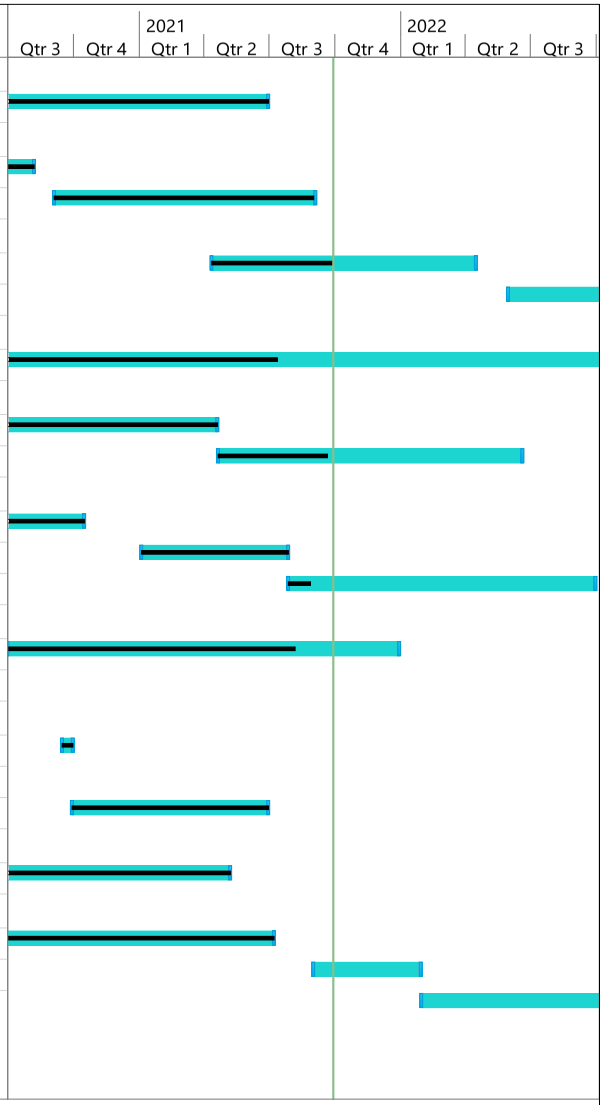
Project Progress

Percent complete is calculated based on phase duration.

Page 2

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
D19227	**MFWQTC Primary Sludge Line Replacement**	100%	Sun 7/1/18	Wed 6/30/21
D19227	CLOSEOUT	100%	Tue 6/30/20	Wed 6/30/21
D19275	**MDS Downstream Flow Meter**	99%	Tue 1/1/19	Sat 9/4/21
D19275	CONSTRUCTION	100%	Mon 1/6/20	Fri 8/7/20
D19275	CLOSEOUT	99%	Fri 9/4/20	Sat 9/4/21
D19286	**SWPS Gas Monitoring and SP1 Odor Control**	16%	Wed 5/15/19	Thu 3/27/25
D19286	DESIGN	46%	Sun 4/11/21	Fri 4/15/22
D19286	CONSTRUCTION	0%	Tue 5/31/22	Fri 1/26/24
D20012	**SGC RTC Enhancements**	26%	Tue 11/19/19	Mon 10/20/25
D20012	DESIGN	41%	Tue 2/18/20	Sat 7/22/23
D20016	**DRGWQTC Admin and RAS Buildings HVAC**	70%	Fri 5/3/19	Mon 6/20/22
D20016	CONSTRUCTION	100%	Wed 6/17/20	Tue 4/20/21
D20016	CLOSEOUT	36%	Wed 4/21/21	Mon 6/20/22
D20017	**CCWQTC Sodium Aluminate Building**	57%	Tue 6/4/19	Fri 9/30/22
D20017	DESIGN	100%	Fri 10/4/19	Thu 10/15/20
D20017	CONSTRUCTION	100%	Mon 1/4/21	Wed 7/28/21
D20017	CLOSEOUT	7%	Wed 7/28/21	Fri 9/30/22
D20033	**FY21 Regional WQTC Equipment RR**	73%	Wed 7/1/20	Thu 12/30/21
D20033	INITIATION & PROCUREMENT	73%	Wed 7/1/20	Thu 12/30/21
D20033	CLOSEOUT	0%	Thu 12/30/21	Thu 12/30/21
D20148	**FFWQTC Regional Facilities Plan Update**	100%	Tue 9/15/20	Wed 6/30/21
D20148	INITIATION & PROCUREMENT	100%	Tue 9/15/20	Tue 9/29/20
D20148	SERVICE PERIOD	100%	Tue 9/29/20	Tue 9/29/20
D20148	CLOSEOUT	100%	Tue 9/29/20	Wed 6/30/21
D20222	**Bells Lane Grit Classifier Drain Line**	100%	Tue 7/23/19	Sat 5/8/21
D20222	CLOSEOUT	100%	Fri 5/8/20	Sat 5/8/21
D20223	**Bells Lane WWTF Polymer Dosing Sys. Updates**	47%	Mon 11/4/19	Fri 3/31/23
D20223	DESIGN	100%	Fri 11/22/19	Thu 7/8/21
D20223	CONSTRUCTION	0%	Wed 9/1/21	Sat 1/29/22
D20223	CLOSEOUT	0%	Sun 1/30/22	Fri 3/31/23



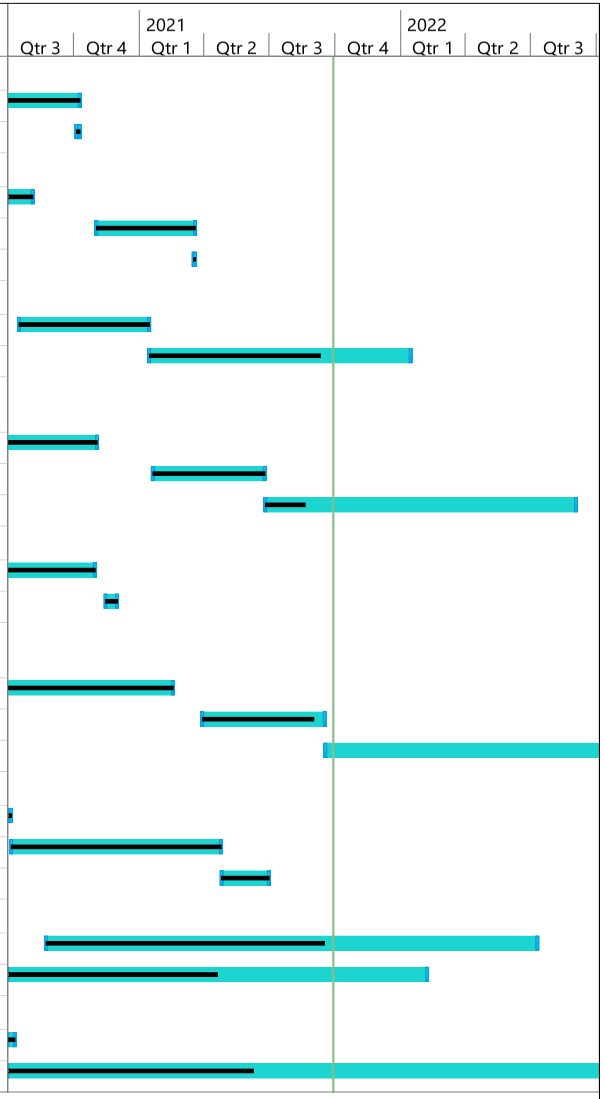
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 3

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
D20226	**Bells Lane and MF HW Bar Screen Grit Study**	100%	Sat 7/13/19	Fri 10/9/20
D20226	STUDY	100%	Thu 10/10/19	Fri 10/9/20
D20226	CLOSEOUT	100%	Mon 10/5/20	Fri 10/9/20
D20262	**MFWQTC Groundwater Wells Study and Rpr**	100%	Mon 10/28/19	Fri 3/19/21
D20262	DESIGN	100%	Wed 7/1/20	Wed 8/5/20
D20262	STUDY	100%	Mon 11/2/20	Fri 3/19/21
D20262	CLOSEOUT	100%	Wed 3/17/21	Fri 3/19/21
D20278	**DRGWQTC RAS Building Elect. Modifications**	79%	Tue 12/17/19	Sat 1/15/22
D20278	CONSTRUCTION	100%	Fri 7/17/20	Fri 1/15/21
D20278	CLOSEOUT	65%	Fri 1/15/21	Sat 1/15/22
D20304	**MFWQTC Headworks and Dumpster Building Repairs and Primary Blower Building Stair**	54%	Sun 9/1/19	Sat 9/3/22
D20304	DESIGN	100%	Sat 2/15/20	Tue 11/3/20
D20304	CONSTRUCTION	100%	Wed 1/20/21	Fri 6/25/21
D20304	CLOSEOUT	13%	Sat 6/26/21	Sat 9/3/22
D20306	**MFWQTC Loading Design Criteria**	100%	Tue 2/11/20	Mon 11/30/20
D20306	INITIATION & PROCUREMENT	100%	Tue 2/11/20	Fri 10/30/20
D20306	CLOSEOUT	100%	Sun 11/15/20	Mon 11/30/20
D20314	**MFWQTC Sewer and Manhole Condition Assessment and Repair**	48%	Sun 2/16/20	Thu 11/17/22
D20314	DESIGN	100%	Wed 2/26/20	Wed 2/17/21
D20314	CONSTRUCTION	90%	Tue 3/30/21	Fri 9/17/21
D20314	CLOSEOUT	0%	Sat 9/18/21	Thu 11/17/22
D20337	**FFWQTC Arc Flash Study**	100%	Wed 7/1/20	Wed 6/30/21
D20337	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Mon 7/6/20
D20337	STUDY	100%	Mon 7/6/20	Sun 4/25/21
D20337	CLOSEOUT	100%	Mon 4/26/21	Wed 6/30/21
D20351	**Floyds Fork Interceptor**	18%	Wed 7/1/20	Fri 9/18/26
D20351	DESIGN	57%	Mon 8/24/20	Sun 7/10/22
D20351	EASEMENTS/LAND ACQUISITION	50%	Wed 7/1/20	Mon 2/7/22
D21059	**Asset Management Plan Development**	31%	Wed 7/1/20	Mon 8/14/23
D21059	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Fri 7/10/20
D21059	DESIGN	31%	Wed 7/1/20	Fri 6/30/23



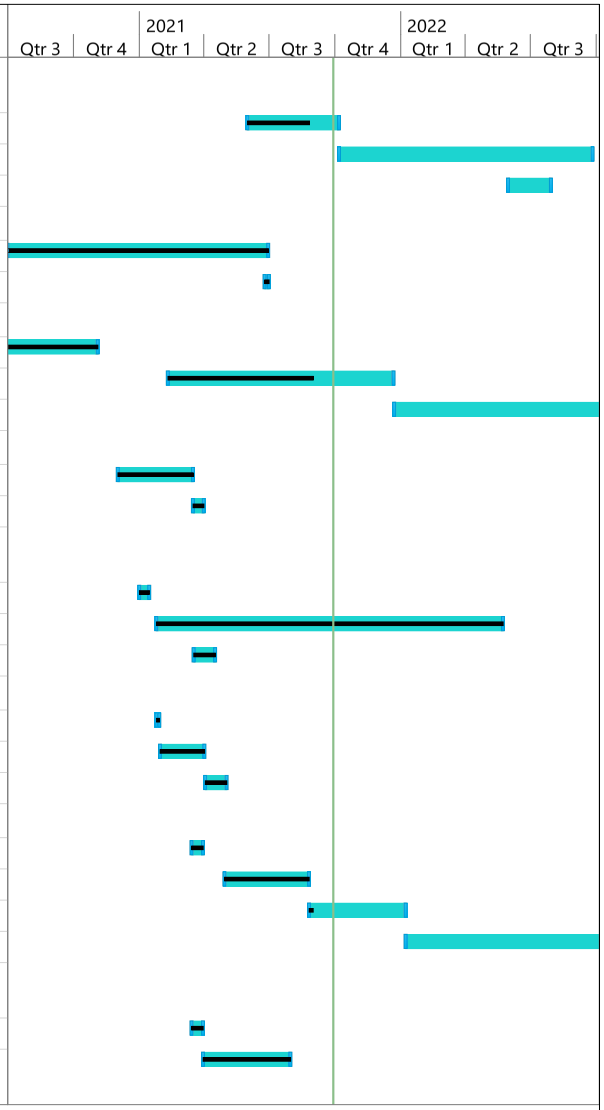
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 4

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
D21079	**Fairmount Road Pump Station Force Main Extension - Phase 2**	5%	Tue 6/1/21	Fri 8/9/24
D21079	INITIATION & PROCUREMENT	68%	Tue 6/1/21	Thu 10/7/21
D21079	DESIGN	0%	Thu 10/7/21	Mon 9/26/22
D21079	EASEMENTS/LAND ACQUISITION	0%	Tue 5/31/22	Sat 7/30/22
D21092	**FY21 WQTC Engineering Support**	100%	Wed 7/1/20	Wed 6/30/21
D21092	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Wed 6/30/21
D21092	CLOSEOUT	100%	Fri 6/25/21	Wed 6/30/21
D21129	**DRGWQTC Elevator Repairs**	34%	Thu 6/25/20	Tue 2/21/23
D21129	DESIGN	100%	Thu 6/25/20	Tue 11/3/20
D21129	CONSTRUCTION	64%	Wed 2/10/21	Wed 12/22/21
D21129	CLOSEOUT	0%	Thu 12/23/21	Tue 2/21/23
D21176	**MFWQTC Digester Building Ceiling Tiles**	100%	Wed 12/2/20	Wed 3/31/21
D21176	DESIGN	100%	Wed 12/2/20	Tue 3/16/21
D21176	CLOSEOUT	100%	Tue 3/16/21	Wed 3/31/21
D21181	**MFWQTC Sodium Hypochlorite Building Floor Repair**	100%	Fri 1/1/21	Mon 5/23/22
D21181	INITIATION & PROCUREMENT	100%	Fri 1/1/21	Thu 1/14/21
D21181	DESIGN	100%	Mon 1/25/21	Mon 5/23/22
D21181	CLOSEOUT	100%	Wed 3/17/21	Fri 4/16/21
D21191	**CCWQTC Dewatering Planning Evaluation**	100%	Mon 1/25/21	Sun 5/2/21
D21191	INITIATION & PROCUREMENT	100%	Mon 1/25/21	Fri 1/29/21
D21191	PLANNING EVALUATION	100%	Sat 1/30/21	Thu 4/1/21
D21191	CLOSEOUT	100%	Fri 4/2/21	Sun 5/2/21
D21208	**MFWQTC Administration Bldg Exterior Repairs**	17%	Mon 3/15/21	Sun 1/8/23
D21208	INITIATION & PROCUREMENT	100%	Mon 3/15/21	Wed 3/31/21
D21208	DESIGN	100%	Fri 4/30/21	Thu 8/26/21
D21208	CONSTRUCTION	4%	Thu 8/26/21	Sat 1/8/22
D21208	CLOSEOUT	0%	Sat 1/8/22	Sun 1/8/23
D21209	**DRG WWPS Vibration Analysis Testing of Pump 1A and 2B**	100%	Mon 3/15/21	Sat 7/31/21
D21209	INITIATION & PROCUREMENT	100%	Mon 3/15/21	Wed 3/31/21
D21209	ANALYSIS PERIOD	100%	Wed 3/31/21	Sat 7/31/21



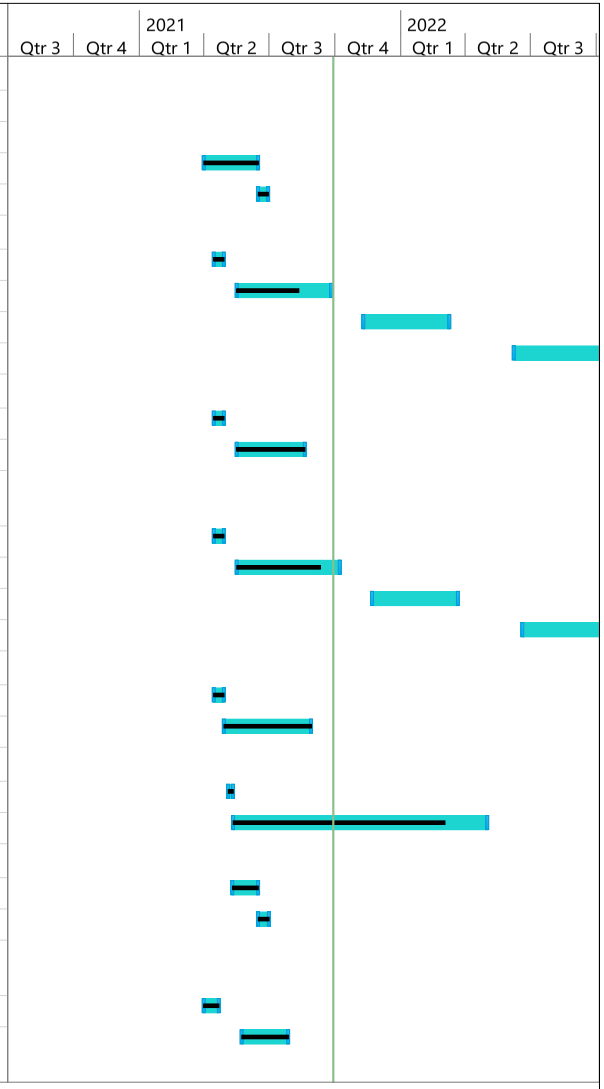
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 5

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
D21218	**MFWQTC MEB Floor Drains**	100%	Thu 4/1/21	Wed 6/30/21
D21218	INITIATION & PROCUREMENT	100%	Thu 4/22/21	Thu 4/22/21
D21218	DESIGN	100%	Thu 4/22/21	Thu 4/22/21
D21218	REPAIR PHASE	100%	Thu 4/1/21	Wed 6/16/21
D21218	CLOSEOUT	100%	Wed 6/16/21	Wed 6/30/21
D21222	**DRGWQTC Grit Building Roof Replacement**	23%	Thu 4/15/21	Thu 5/4/23
D21222	INITIATION & PROCUREMENT	100%	Thu 4/15/21	Thu 4/29/21
D21222	DESIGN	66%	Mon 5/17/21	Sun 9/26/21
D21222	CONSTRUCTION	0%	Wed 11/10/21	Thu 3/10/22
D21222	CLOSEOUT	0%	Wed 6/8/22	Thu 5/4/23
D21223	**HCWQTC Grit Building Roof Replacement**	100%	Thu 4/15/21	Fri 8/20/21
D21223	INITIATION & PROCUREMENT	100%	Thu 4/15/21	Thu 4/29/21
D21223	DESIGN	100%	Mon 5/17/21	Fri 8/20/21
D21224	**DRGWQTC Sodium Hypochlorite and Process Water Buildings Roof Replacement**	42%	Thu 4/15/21	Tue 5/16/23
D21224	INITIATION & PROCUREMENT	100%	Thu 4/15/21	Thu 4/29/21
D21224	DESIGN	81%	Mon 5/17/21	Fri 10/8/21
D21224	CONSTRUCTION	0%	Mon 11/22/21	Tue 3/22/22
D21224	CLOSEOUT	0%	Mon 6/20/22	Tue 5/16/23
D21226	**DRGWQTC WWPS Building Roof Replacement**	100%	Thu 4/15/21	Sat 8/28/21
D21226	INITIATION & PROCUREMENT	100%	Thu 4/15/21	Thu 4/29/21
D21226	DESIGN	100%	Thu 4/29/21	Sat 8/28/21
D21230	**DRG RAS Pumps 2 and 3 Replacement**	30%	Wed 5/5/21	Thu 4/27/23
D21230	INITIATION & PROCUREMENT	100%	Wed 5/5/21	Tue 5/11/21
D21230	DESIGN	84%	Tue 5/11/21	Mon 5/2/22
D21232	**FY21 MFWQTC Process Improvement**	100%	Tue 5/11/21	Wed 6/30/21
D21232	INITIATION & PROCUREMENT	100%	Tue 5/11/21	Tue 6/15/21
D21232	CLOSEOUT	100%	Tue 6/15/21	Wed 6/30/21
D21233	**MFWQTC MEB and Service Blower Building Roof Replacement**	100%	Thu 4/1/21	Wed 7/28/21
D21233	INITIATION & PROCUREMENT	100%	Thu 4/1/21	Thu 4/22/21
D21233	DESIGN	100%	Mon 5/24/21	Wed 7/28/21



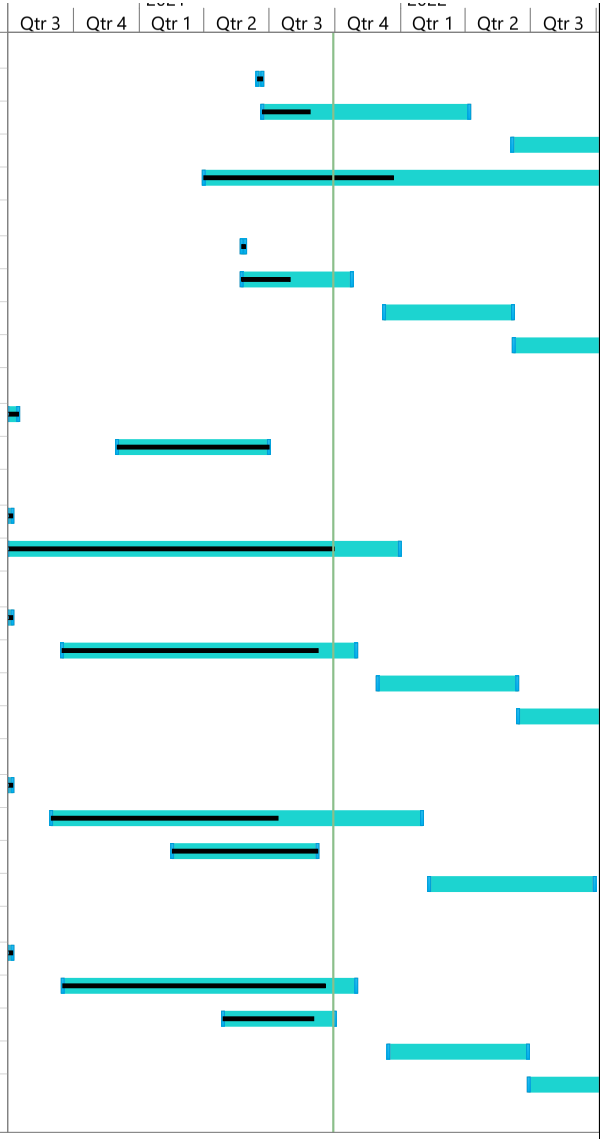
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 6

Figure 7.1. Asset Management Schedule

D21247	**MFWQTC HVAC Upgrades**	12%	Thu 4/1/21	Tue 11/26/24
D21247	INITIATION & PROCUREMENT	100%	Tue 6/15/21	Mon 6/21/21
D21247	DESIGN	23%	Mon 6/21/21	Wed 4/6/22
D21247	CONSTRUCTION	0%	Sun 6/5/22	Mon 11/27/23
D21247	CLOSEOUT	20%	Thu 4/1/21	Tue 11/26/24
D22042	**FFWQTC and CCWQTC Power Factor Correction**	20%	Mon 5/24/21	Sun 6/4/23
D22042	INITIATION & PROCUREMENT	100%	Mon 5/24/21	Fri 5/28/21
D22042	DESIGN	45%	Mon 5/24/21	Mon 10/25/21
D22042	CONSTRUCTION	0%	Thu 12/9/21	Tue 6/7/22
D22042	CLOSEOUT	0%	Wed 6/8/22	Sun 6/4/23
E18468	**FY21 CMOM Collection System PS RR**	100%	Wed 7/1/20	Wed 6/30/21
E18468	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Wed 7/15/20
E18468	CLOSEOUT	100%	Tue 12/1/20	Wed 6/30/21
E19212	**FY21 Operations Renewal and Replacement**	83%	Wed 7/1/20	Thu 12/30/21
E19212	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E19212	CLOSEOUT	83%	Wed 7/1/20	Thu 12/30/21
E21070	**Rosa Terrace PS Elimination**	36%	Wed 7/1/20	Sun 8/13/23
E21070	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21070	DESIGN	87%	Tue 9/15/20	Sun 10/31/21
E21070	CONSTRUCTION	0%	Tue 11/30/21	Mon 6/13/22
E21070	CLOSEOUT	0%	Tue 6/14/22	Sun 8/13/23
E21071	**Wathen Lane PS Rehabilitation**	35%	Wed 7/1/20	Wed 11/29/23
E21071	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21071	DESIGN	61%	Mon 8/31/20	Mon 1/31/22
E21071	EASEMENTS/LAND ACQUISITION	100%	Tue 2/16/21	Tue 9/7/21
E21071	CONSTRUCTION	0%	Thu 2/10/22	Thu 9/29/22
E21090	**Sonne Avenue PS Elimination**	35%	Wed 7/1/20	Mon 8/28/23
E21090	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21090	DESIGN	90%	Wed 9/16/20	Sun 10/31/21
E21090	EASEMENTS/LAND ACQUISITION	81%	Tue 4/27/21	Thu 9/30/21
E21090	CONSTRUCTION	0%	Wed 12/15/21	Tue 6/28/22
E21090	CLOSEOUT	0%	Wed 6/29/22	Mon 8/28/23



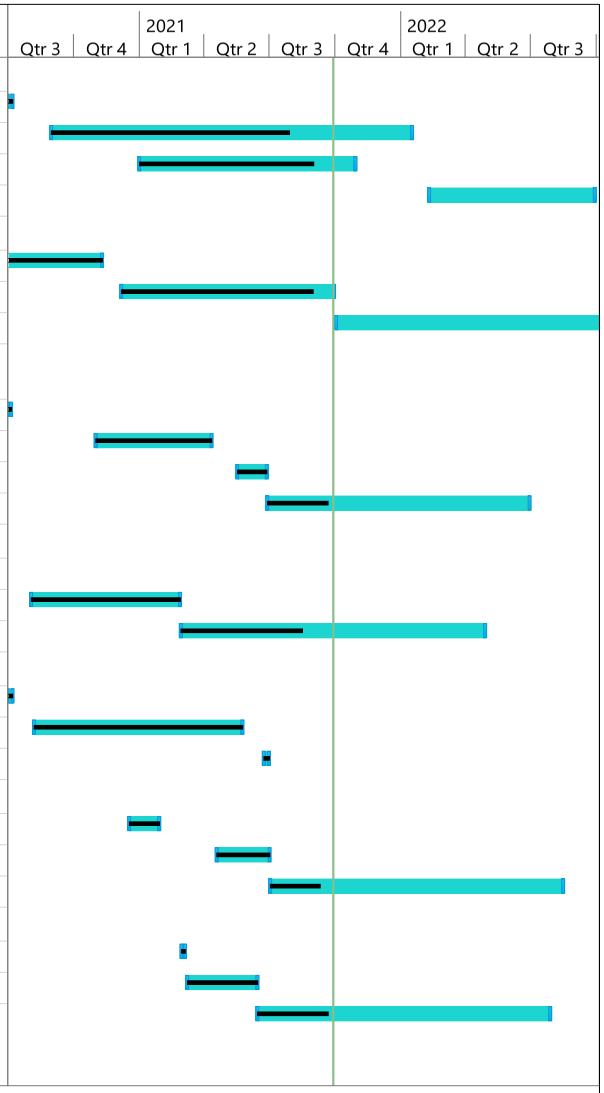
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 7

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
E21091	**Sanders Lane PS Rehabilitation**	37%	Wed 7/1/20	Wed 11/29/23
E21091	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
E21091	DESIGN	66%	Mon 8/31/20	Mon 1/17/22
E21091	EASEMENTS/LAND ACQUISITION	80%	Fri 1/1/21	Sat 10/30/21
E21091	CONSTRUCTION	0%	Thu 2/10/22	Thu 9/29/22
F20321	**Bluegrass Fields PS Renovation**	50%	Mon 3/16/20	Mon 10/31/22
F20321	DESIGN	100%	Mon 5/18/20	Tue 11/10/20
F20321	CONSTRUCTION	90%	Mon 12/7/20	Thu 9/30/21
F20321	CLOSEOUT	0%	Sun 10/3/21	Mon 10/31/22
F21061	**Clifton Heights Storage Basin Sump Pump Improvements**	49%	Wed 7/1/20	Thu 6/30/22
F21061	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Mon 7/6/20
F21061	DESIGN	100%	Sun 11/1/20	Mon 4/12/21
F21061	CONSTRUCTION	100%	Tue 5/18/21	Mon 6/28/21
F21061	CLOSEOUT	23%	Tue 6/29/21	Thu 6/30/22
F21123	**10th St MCC Replacement**	60%	Mon 8/3/20	Thu 4/28/22
F21123	DESIGN	100%	Tue 9/1/20	Tue 9/1/20
F21123	CONSTRUCTION	100%	Mon 8/3/20	Fri 2/26/21
F21123	CLOSEOUT	40%	Sat 2/27/21	Thu 4/28/22
F21124	**Starkey and Shawnee Flood PS Arc Flash Studies**	100%	Wed 7/1/20	Wed 6/30/21
F21124	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Tue 7/7/20
F21124	STUDY	100%	Thu 8/6/20	Mon 5/24/21
F21124	CLOSEOUT	100%	Thu 6/24/21	Wed 6/30/21
F21153	**SWPS Influent Gate Seal Replacement**	35%	Thu 12/17/20	Mon 8/15/22
F21153	DESIGN	100%	Thu 12/17/20	Thu 1/28/21
F21153	CONSTRUCTION	100%	Mon 4/19/21	Fri 7/2/21
F21153	CLOSEOUT	17%	Sat 7/3/21	Mon 8/15/22
F21202	**SGC Emergency**	38%	Mon 3/1/21	Fri 7/29/22
F21202	INITIATION & PROCUREMENT	100%	Mon 3/1/21	Fri 3/5/21
F21202	EMERGENCY WORK	100%	Tue 3/9/21	Tue 6/15/21
F21202	CLOSEOUT	24%	Tue 6/15/21	Fri 7/29/22



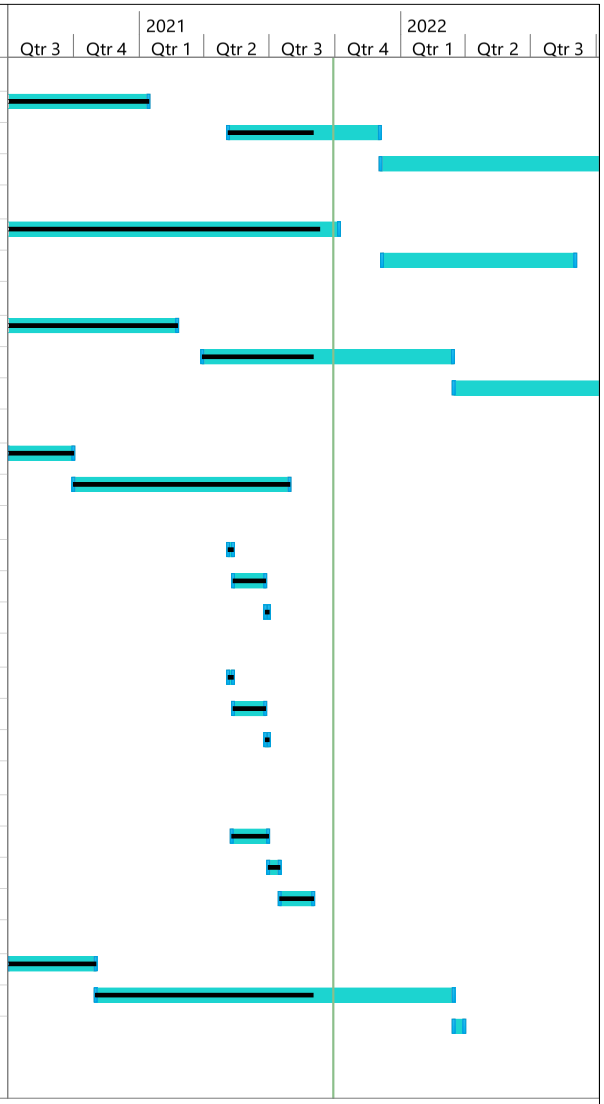
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 8

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
G18417	**MFWQTC Admin Building Roof Replacement**	39%	Mon 7/22/19	Thu 2/2/23
G18417	DESIGN	100%	Fri 5/8/20	Wed 1/13/21
G18417	CONSTRUCTION	56%	Wed 5/5/21	Fri 12/3/21
G18417	CLOSEOUT	0%	Sat 12/4/21	Thu 2/2/23
G20018	**SWPS Site Security**	44%	Tue 6/4/19	Thu 11/2/23
G20018	DESIGN	96%	Fri 11/1/19	Thu 10/7/21
G20018	CONSTRUCTION	0%	Mon 12/6/21	Fri 9/2/22
G20028	**MFWQTC Elevator Repair**	48%	Tue 6/4/19	Sun 5/14/23
G20028	DESIGN	100%	Tue 6/4/19	Tue 2/23/21
G20028	CONSTRUCTION	44%	Mon 3/29/21	Mon 3/14/22
G20028	CLOSEOUT	0%	Tue 3/15/22	Sun 5/14/23
G21001	**FY21 Renewal and Replacement**	100%	Wed 7/1/20	Fri 7/30/21
G21001	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Thu 10/1/20
G21001	CLOSEOUT	100%	Thu 10/1/20	Fri 7/30/21
G21220	**FY21 Acoustic Equipment**	100%	Wed 5/5/21	Wed 6/30/21
G21220	INITIATION & PROCUREMENT	100%	Wed 5/5/21	Tue 5/11/21
G21220	DESIGN	100%	Tue 5/11/21	Fri 6/25/21
G21220	CLOSEOUT	100%	Fri 6/25/21	Wed 6/30/21
G21221	**FY21 Mudmaster**	100%	Wed 5/5/21	Wed 6/30/21
G21221	INITIATION & PROCUREMENT	100%	Wed 5/5/21	Tue 5/11/21
G21221	DESIGN	100%	Tue 5/11/21	Fri 6/25/21
G21221	CLOSEOUT	100%	Fri 6/25/21	Wed 6/30/21
G21231	**FY21 WQTC and FPS Roof Assessments**	100%	Mon 5/10/21	Wed 9/1/21
G21231	INITIATION & PROCUREMENT	100%	Mon 5/10/21	Mon 5/10/21
G21231	ASSESSMENT PERIOD	100%	Mon 5/10/21	Wed 6/30/21
G21231	DELIVERABLES	100%	Wed 6/30/21	Fri 7/16/21
G21231	CLOSEOUT	100%	Fri 7/16/21	Wed 9/1/21
H20056	**FY21 CMOM I and C Implementation**	59%	Wed 7/1/20	Thu 3/31/22
H20056	INITIATION & PROCUREMENT	100%	Wed 7/1/20	Sun 11/1/20
H20056	SERVICE PERIOD	61%	Sun 11/1/20	Wed 3/16/22
H20056	CLOSEOUT	0%	Wed 3/16/22	Thu 3/31/22



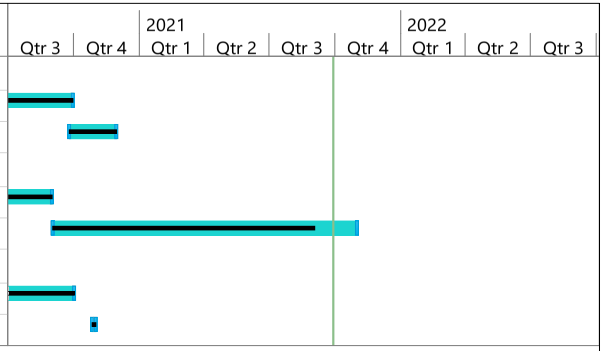
Data Date: 8/31/21 | NMC Project | Project Progress

Percent complete is calculated based on phase duration.

Page 9

Figure 7.1. Asset Management Schedule

Budget ID	Task Name	% Complete	Start	Finish
H20061	**FY20 CMOM Gravity Line Clng and Inspection**	100%	Mon 7/1/19	Mon 11/30/20
H20061	INITIATION & PROCUREMENT	100%	Mon 7/1/19	Wed 9/30/20
H20061	CLOSEOUT	100%	Fri 9/25/20	Mon 11/30/20
H20153	**SWPS Flood Repair**	92%	Tue 6/4/19	Mon 11/1/21
H20153	CONSTRUCTION	100%	Sun 3/1/20	Tue 9/1/20
H20153	CLOSEOUT	86%	Wed 9/2/20	Mon 11/1/21
H20297	**FY20 Asset Management Assistance**	100%	Wed 1/29/20	Sun 11/1/20
H20297	INITIATION & PROCUREMENT	100%	Wed 1/29/20	Fri 10/2/20
H20297	CLOSEOUT	100%	Tue 10/27/20	Sun 11/1/20



Data Date: 8/31/21

NMC Project

Project Progress

Percent complete is calculated based on phase duration.

Page 10

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Appendix A Authorized Discharges - Wet Weather CSOs

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CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
CSO015	7/1/2020 1:30	7/1/2020 8:00	390	0	143,200	0	1	Atlas		1,432	1
	7/1/2020 17:45	7/1/2020 23:15	330	0	13,856	0	1	Atlas		5,404	1
	7/5/2020 16:00	7/5/2020 22:30	390	0	11,410,143	0	1	Atlas		798,710	1
	7/8/2020 8:15	7/8/2020 9:00	45	0	27,167	0	3	Atlas		815	1
	7/12/2020 10:30	7/12/2020 22:00	690	1	30,601	1	1	Atlas		31,213	1
	7/23/2020 0:45	7/23/2020 3:45	180	0	379	0	6	Atlas		129	1
	7/23/2020 15:00	7/23/2020 20:30	330	0	17,800	0	6	Atlas		6,052	1
	7/30/2020 10:00	7/31/2020 11:45	1545	3	1,220,512	32	12	Atlas		3,161,127	1
	8/13/2020 14:00	8/13/2020 18:30	270	1	2,435	0	6	Atlas		2,605	1
	8/14/2020 6:15	8/14/2020 19:45	810	1	1,643,353	0	6	Atlas		1,758,388	1
	8/22/2020 14:15	8/22/2020 22:30	495	0	19,613,621	0	1	Atlas		7,453,176	1
	8/28/2020 22:45	8/28/2020 23:30	45	0	830	0	3	Atlas		415	1
	9/2/2020 5:45	9/2/2020 8:15	150	0	3,535	0	3	Atlas		1,202	1
	9/3/2020 3:30	9/3/2020 19:30	960	1	22,550,112	4	6	Cloudburst		29,089,645	1
	10/20/2020 0:15	10/20/2020 2:30	135	1	14,629,305	0	24	Atlas		17,847,752	1
	12/31/2020 0:15	12/31/2020 14:15	840	1	7,169,262	2	12	Cloudburst		10,682,200	1
	1/1/2021 7:30	1/4/2021 11:45	4575	0	49,178,694	0	12	Atlas		47,211,546	1
	1/25/2021 13:45	2/1/2021 8:00	9735	2	16,979,038	5	12	Cloudburst		26,826,880	1
	2/28/2021 5:15	3/3/2021 9:30	4575	3	98,321,119	35	24	Atlas		285,131,246	1
	3/31/2021 0:45	4/1/2021 4:45	1680	0	23,436,101	0	6	Atlas		18,748,881	1
	6/1/2021 17:00	6/1/2021 17:00	0	0	10,301	0	24	Atlas		8,447	1
	6/3/2021 9:45	6/3/2021 15:00	315	0	48,560,076	0	6	Atlas		41,761,665	1
CSO015 Total										490,528,930	22
CSO016	10/19/2020 9:30	10/20/2020 9:45	1455	1	12,318,695	5	24	Cloudburst		16,383,864	1
	10/23/2020 19:15	10/23/2020 22:15	180	0	16,186,325	0	3	Atlas		3,237,265	1
	10/29/2020 1:00	10/30/2020 3:15	1575	3	8,565,444	500	24	Cloudburst		28,437,273	1
	11/15/2020 7:45	11/15/2020 8:15	30	0	176,395	0	6	Atlas		72,322	1
	11/25/2020 7:15	11/25/2020 11:45	270	2	374,451	24	6	Cloudburst		595,377	1
	1/1/2021 7:45	1/1/2021 14:45	420	1	8,809,272	4	12	Cloudburst		8,809,272	1
	1/25/2021 10:30	1/25/2021 23:45	795	2	16,301,253	32	12	Atlas		25,429,955	1
	1/30/2021 22:45	1/31/2021 2:00	195	0	4,098,171	1	1	Atlas		3,278,537	1
	2/10/2021 18:30	2/10/2021 18:30	0	0	79,945	0	12	Atlas		17,588	1
	2/28/2021 2:45	3/1/2021 2:15	1410	3	8,033,129	331	24	Cloudburst		22,332,098	1
	3/11/2021 20:30	3/12/2021 12:00	930	1	21,369,598	8	12	Cloudburst		28,207,870	1
	3/15/2021 14:15	3/15/2021 16:30	135	0	8,724,324	0	3	Atlas		1,483,135	1
	3/18/2021 7:45	3/18/2021 11:00	195	1	2,527,706	3	24	Cloudburst		2,755,199	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	3/25/2021 11:00	3/25/2021 15:00	240	0	13,755,347	0	3	Atlas		4,951,925	1
	3/30/2021 23:45	3/31/2021 6:30	405	0	10,082,843	2	6	Cloudburst		7,562,132	1
	4/7/2021 18:00	4/8/2021 2:00	480	0	13,140,544	20	1	Atlas		11,695,084	1
	4/10/2021 13:30	4/10/2021 15:15	105	0	3,039,810	0	12	Atlas		881,545	1
	4/28/2021 15:15	4/29/2021 17:15	1560	2	8,626,127	19	1	Atlas		13,629,280	1
	5/3/2021 4:45	5/3/2021 6:15	90	0	872,446	0	12	Atlas		357,703	1
	5/4/2021 7:30	5/4/2021 11:45	255	0	4,993,799	1	24	Cloudburst		4,744,109	1
	5/5/2021 0:45	5/5/2021 4:30	225	0	4,324,825	1	24	Cloudburst		4,108,584	1
	5/9/2021 11:15	5/9/2021 14:00	165	0	8,123,832	0	1	Atlas		2,518,388	1
	5/26/2021 11:15	5/26/2021 16:15	300	0	7,633,143	2	3	Atlas		5,190,537	1
	6/3/2021 8:45	6/3/2021 17:30	525	1	9,174,532	6	12	Cloudburst		10,183,731	1
	6/6/2021 17:15	6/6/2021 18:30	75	0	858,143	0	1	Atlas		454,816	1
	6/7/2021 4:45	6/7/2021 6:00	75	0	582,370	0	1	Atlas		308,656	1
	6/29/2021 17:00	6/29/2021 20:30	210	0	41,543,417	0	1	Atlas		2,492,605	1
CSO016 Total										210,118,850	27
CSO019	7/5/2020 17:45	7/5/2020 19:30	105	0	1,048,063	0	3	Atlas		83,845	1
	7/8/2020 1:30	7/8/2020 4:15	165	0	683,594	0	1	Atlas		123,047	1
	7/11/2020 20:00	7/12/2020 5:45	585	0	339,313	0	12	Atlas		230,733	1
	7/17/2020 15:15	7/17/2020 15:15	0	0	8,643,200	0	1	Atlas		86,432	1
	7/22/2020 1:30	7/22/2020 1:30	0	0	21,440	0	1	Atlas		4,288	1
	7/23/2020 0:45	7/23/2020 11:15	630	0	120,539	0	12	Atlas		37,367	1
	7/23/2020 20:00	7/23/2020 22:15	135	0	6,230,000	0	1	Atlas		62,300	1
	7/27/2020 16:00	7/27/2020 17:15	75	0	192,576	0	1	Atlas		40,441	1
	7/30/2020 8:30	7/31/2020 13:45	1755	3	6,042,851	2	12	Cloudburst		15,348,842	1
	8/1/2020 12:15	8/2/2020 2:00	825	0	974,732	0	24	Atlas		331,409	1
	8/3/2020 1:30	8/3/2020 9:15	465	0	790,196	0	3	Atlas		213,353	1
	8/14/2020 4:00	8/14/2020 20:15	975	2	5,079,170	2	3	Atlas		10,463,091	1
	8/22/2020 14:30	8/22/2020 16:15	105	0	746,220	0	3	Atlas		37,311	1
	8/28/2020 11:00	8/29/2020 4:30	1050	0	445,965	0	24	Atlas		227,442	1
	8/31/2020 5:30	8/31/2020 6:30	60	0	134,953	0	12	Atlas		20,243	1
	9/2/2020 3:30	9/2/2020 11:15	465	0	566,077	0	3	Atlas		271,717	1
	9/2/2020 23:45	9/3/2020 19:15	1170	1	8,452,318	0	6	Atlas		9,889,212	1
	9/28/2020 12:00	9/28/2020 17:00	300	0	343,129	0	6	Atlas		82,351	1
	10/4/2020 12:15	10/4/2020 15:15	180	0	748,200	0	1	Atlas		7,482	1
	10/10/2020 14:45	10/10/2020 14:45	0	0	365,200	0	1	Atlas		3,652	1
	10/18/2020 23:00	10/20/2020 15:00	2400	1	5,448,337	0	24	Atlas		6,483,521	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	10/23/2020 18:15	10/24/2020 2:45	510	0	516,350	0	1	Atlas		196,213	1
	10/28/2020 21:15	10/30/2020 12:45	2370	3	4,885,408	2	24	Cloudburst		16,512,678	1
	11/11/2020 0:30	11/11/2020 4:00	210	0	390,621	0	12	Atlas		54,687	1
	11/15/2020 4:15	11/15/2020 11:30	435	0	352,839	0	6	Atlas		179,948	1
	11/21/2020 8:00	11/21/2020 9:45	105	0	2,228,400	0	1	Atlas		22,284	1
	11/21/2020 20:00	11/22/2020 0:00	240	0	679,686	0	3	Atlas		47,578	1
	11/22/2020 9:30	11/22/2020 16:30	420	0	516,265	0	3	Atlas		87,765	1
	11/25/2020 4:15	11/26/2020 2:00	1305	2	421,759	0	6	Atlas		662,162	1
	12/12/2020 7:30	12/12/2020 9:30	120	0	308,520	0	1	Atlas		30,852	1
	12/13/2020 23:00	12/14/2020 0:45	105	0	308,014	0	3	Atlas		21,561	1
	12/16/2020 6:15	12/16/2020 14:30	495	0	537,168	0	6	Atlas		102,062	1
	12/19/2020 21:15	12/20/2020 5:15	480	0	327,732	0	3	Atlas		72,101	1
	12/24/2020 1:00	12/24/2020 4:15	195	0	156,345	0	12	Atlas		31,269	1
	12/30/2020 13:45	1/6/2021 11:00	9915	1	562,914	0	24	Atlas		703,642	1
	1/25/2021 9:00	2/1/2021 7:00	9960	2	103,209	0	12	Atlas		169,263	1
	2/4/2021 16:30	2/5/2021 6:45	855	0	401,398	0	12	Atlas		160,559	1
	2/10/2021 17:30	3/22/2021 17:30	57600	0	25,301,100	0	12	Atlas		5,313,231	1
	3/25/2021 10:15	3/25/2021 17:30	435	0	117,267	0	3	Atlas		35,180	1
	3/30/2021 23:00	3/31/2021 9:45	645	0	68,083	0	6	Atlas		52,424	1
	4/7/2021 17:15	4/8/2021 1:15	480	0	90,939	0	1	Atlas		51,835	1
	4/10/2021 12:45	4/10/2021 15:00	135	0	32,232	0	6	Atlas		8,058	1
	4/21/2021 0:00	4/21/2021 1:00	60	0	4,944	0	6	Atlas		890	1
	4/24/2021 15:30	4/24/2021 16:00	30	0	881	0	6	Atlas		282	1
	4/28/2021 15:00	4/29/2021 22:15	1875	2	609,569	0	24	Atlas		1,036,267	1
	5/3/2021 4:15	5/3/2021 8:00	225	0	41,675	0	12	Atlas		16,670	1
	5/4/2021 7:00	5/5/2021 11:00	1680	0	243,115	0	24	Atlas		145,869	1
	5/9/2021 11:00	5/9/2021 12:45	105	0	24,236	0	3	Atlas		6,786	1
	5/26/2021 10:45	5/26/2021 20:00	555	0	124,892	0	3	Atlas		66,193	1
	6/2/2021 4:45	6/2/2021 12:30	465	0	10,215	0	24	Atlas		6,333	1
	6/2/2021 22:15	6/2/2021 22:45	30	0	1,898	0	24	Atlas		1,177	1
	6/3/2021 8:15	6/3/2021 20:30	735	0	210,345	0	1	Atlas		79,931	1
	6/6/2021 17:00	6/6/2021 18:00	60	0	13,264	0	1	Atlas		3,714	1
	6/7/2021 4:00	6/7/2021 15:15	675	0	69,823	0	1	Atlas		15,361	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	6/8/2021 15:00	6/8/2021 16:45	105	0	20,415	0	24	Atlas		6,737	1
	6/11/2021 17:45	6/11/2021 18:15	30	0	2,428	0	1	Atlas		437	1
	6/29/2021 16:15	6/30/2021 0:30	495	1	378,690	2	1	Atlas		545,314	1
CSO019 Total										70,495,392	57
CSO022	7/7/2020 23:15	7/7/2020 23:15	0	0	531,976	0	1	Atlas		196,831	1
	7/30/2020 10:15	7/30/2020 11:00	45	2	85,981	30	12	Atlas		211,514	1
	7/30/2020 20:15	7/30/2020 20:30	15	2	149,134	30	12	Atlas		366,869	1
	8/23/2020 17:45	8/23/2020 18:00	15	0	3,165,113	0	1	Atlas		759,627	1
	10/20/2020 2:15	10/20/2020 2:30	15	1	218,937	0	24	Atlas		249,588	1
	2/28/2021 5:15	2/28/2021 5:45	30	2	156,295	8	24	Cloudburst		339,160	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	42,427	8	24	Cloudburst		92,066	1
	3/18/2021 1:30	3/18/2021 1:30	0	0	148,515	0	24	Atlas		69,802	1
	3/25/2021 11:15	3/25/2021 11:15	0	0	74,096	0	1	Atlas		17,783	1
	6/3/2021 9:30	6/3/2021 9:30	0	0	48,586	0	6	Atlas		37,411	1
CSO022 Total										2,340,651	10
CSO023	7/30/2020 20:15	7/30/2020 20:15	0	2	354	30	12	Atlas		871	1
	2/28/2021 5:15	2/28/2021 5:15	0	2	41,201	8	24	Cloudburst		89,407	1
CSO023 Total										90,278	2
CSO027	6/3/2021 12:30	6/3/2021 12:30	0	0	2,855	503	6	Cloudburst		2,512	1
CSO027 Total										2,512	1
CSO028	7/30/2020 9:15	7/30/2020 9:15	0	3	8,728	515	24	Cloudburst		22,256	1
	7/30/2020 19:15	7/30/2020 19:30	15	3	6,199	515	24	Cloudburst		15,808	1
	10/20/2020 1:15	10/20/2020 1:15	0	1	10,886	503	24	Cloudburst		12,410	1
	2/28/2021 5:30	2/28/2021 5:30	0	2	4,223	513	24	Cloudburst		9,925	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	3,737	513	24	Cloudburst		8,782	1
	6/3/2021 12:15	6/3/2021 12:15	0	0	283,370	503	6	Cloudburst		249,366	1
CSO028 Total										318,547	6
CSO029	7/30/2020 9:00	7/30/2020 9:15	15	3	4,316	515	24	Cloudburst		11,005	1
	7/30/2020 19:00	7/30/2020 19:15	15	3	38,614	515	24	Cloudburst		98,465	1
	9/3/2020 4:45	9/3/2020 4:45	0	1	2,528	505	6	Cloudburst		2,705	1
	10/20/2020 1:00	10/20/2020 1:15	15	1	18,698	503	24	Cloudburst		21,316	1
	5/4/2021 17:15	5/9/2021 12:00	6885	0	8,424,817	501	24	Cloudburst		6,065,868	1
	6/10/2021 9:15	6/10/2021 14:15	300	0	486,000	0	1	Atlas		4,860	1
	6/11/2021 12:15	6/11/2021 12:15	0	0	1,850	0	1	Atlas		111	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
CSO029 Total										6,204,330	7
CSO031	7/23/2020 19:30	7/23/2020 19:30	0	0	213	501	24	Cloudburst		143	1
	7/30/2020 12:00	7/30/2020 19:30	450	3	1,591	515	24	Cloudburst		4,056	1
	10/20/2020 1:15	10/20/2020 1:30	15	1	792	503	24	Cloudburst		903	1
	2/28/2021 5:30	2/28/2021 5:45	15	2	940	513	24	Cloudburst		2,208	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	137	513	24	Cloudburst		321	1
CSO031 Total										7,631	5
CSO034	7/23/2020 19:00	7/23/2020 19:00	0	0	3,097	501	24	Cloudburst		2,075	1
	7/30/2020 9:15	7/30/2020 19:30	615	3	65,681	515	24	Cloudburst		167,487	1
	8/23/2020 17:15	8/23/2020 17:15	0	0	5,400	0	1	Atlas		270	1
	9/3/2020 4:45	9/3/2020 4:45	0	1	3,346	505	6	Cloudburst		3,580	1
	10/20/2020 1:15	10/20/2020 1:30	15	1	72,487	503	24	Cloudburst		82,635	1
	2/28/2021 5:15	2/28/2021 5:30	15	2	11,572	513	24	Cloudburst		27,194	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	4,946	513	24	Cloudburst		11,623	1
	6/3/2021 8:30	6/3/2021 12:15	225	0	205,368	503	6	Cloudburst		180,724	1
	6/29/2021 17:15	6/29/2021 17:15	0	0	8,382	371	1	Atlas		1,844	1
CSO034 Total										477,432	9
CSO035	10/20/2020 1:15	10/20/2020 1:15	0	0	25,463	1	24	Cloudburst		24,444	1
	2/28/2021 5:30	2/28/2021 5:45	15	2	24,040	68	24	Cloudburst		52,167	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	13,325	68	24	Cloudburst		28,916	1
	3/25/2021 10:15	3/25/2021 10:15	0	0	14,819	0	1	Atlas		5,483	1
	4/28/2021 15:15	4/28/2021 15:15	0	0	457	1	24	Cloudburst		443	1
	4/29/2021 2:00	4/29/2021 2:00	0	0	8,520	1	24	Cloudburst		8,264	1
	5/3/2021 2:30	5/3/2021 2:45	15	0	20,984	0	12	Atlas		5,246	1
	5/4/2021 7:00	5/4/2021 7:00	0	0	13,696	0	1	Atlas		3,561	1
	6/3/2021 12:15	6/3/2021 12:30	15	1	780,611	9	6	Cloudburst		811,835	1
CSO035 Total										940,359	9
CSO036	7/23/2020 19:15	7/23/2020 19:15	0	0	43,913	0	24	Atlas		23,713	1
	7/30/2020 10:15	7/30/2020 19:45	570	2	63,127	347	12	Cloudburst		154,031	1
	8/23/2020 16:45	8/23/2020 17:30	45	0	688,393	0	1	Atlas		103,259	1
	10/20/2020 1:15	10/20/2020 1:15	0	0	10,132	1	24	Cloudburst		9,727	1
	2/28/2021 5:30	2/28/2021 6:00	30	2	43,233	68	24	Cloudburst		93,815	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	25,691	68	24	Cloudburst		55,750	1
	3/25/2021 10:30	3/25/2021 10:30	0	0	130,865	0	1	Atlas		48,420	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	25,630	0	1	Atlas		8,458	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	4/10/2021 19:00	4/10/2021 19:00	0	0	4,100	0	12	Atlas		2,050	1
	4/29/2021 2:15	4/29/2021 2:15	0	0	37,918	1	24	Cloudburst		36,780	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	17,735	0	1	Atlas		4,611	1
	6/3/2021 8:45	6/3/2021 12:45	240	1	19,934	9	6	Cloudburst		20,731	1
	6/29/2021 17:45	6/29/2021 17:45	0	0	27,600	0	1	Atlas		3,588	1
CSO036 Total										564,933	13
CSO038	7/30/2020 9:30	7/30/2020 9:30	0	3	8,321	515	24	Cloudburst		21,218	1
	7/30/2020 19:30	7/30/2020 19:30	0	3	283	515	24	Cloudburst		722	1
	10/20/2020 1:30	10/20/2020 1:30	0	1	896	503	24	Cloudburst		1,022	1
	2/28/2021 5:45	2/28/2021 5:45	0	2	177	513	24	Cloudburst		417	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	142	513	24	Cloudburst		333	1
	6/3/2021 12:30	6/3/2021 12:30	0	0	35,560	503	6	Cloudburst		31,293	1
CSO038 Total										55,005	6
CSO050	7/5/2020 18:15	7/5/2020 18:30	15	0	834,229	0	1	Atlas		116,792	1
	7/7/2020 22:30	7/7/2020 22:45	15	0	637,519	0	1	Atlas		102,003	1
	7/11/2020 19:45	7/12/2020 4:00	495	0	164,552	2	12	Cloudburst		110,250	1
	7/23/2020 7:30	7/23/2020 19:30	720	0	471,810	0	24	Atlas		273,650	1
	7/30/2020 8:30	7/30/2020 21:30	780	2	1,294,233	501	12	Cloudburst		3,106,160	1
	8/1/2020 12:30	8/1/2020 22:15	585	0	164,211	0	12	Atlas		29,558	1
	8/3/2020 2:30	8/3/2020 2:30	0	0	16,231	0	3	Atlas		2,597	1
	8/14/2020 5:30	8/14/2020 8:45	195	1	743,273	34	6	Cloudburst		825,033	1
	8/22/2020 14:15	8/22/2020 14:30	15	0	480,063	0	1	Atlas		91,212	1
	8/23/2020 16:45	8/23/2020 18:00	75	0	250,888	0	3	Atlas		20,071	1
	8/28/2020 20:15	8/28/2020 23:00	165	0	290,493	0	3	Atlas		122,007	1
	8/31/2020 5:15	8/31/2020 5:30	15	0	88,682	0	1	Atlas		19,510	1
	9/2/2020 3:30	9/2/2020 5:00	90	0	278,176	7	3	Atlas		172,469	1
	9/3/2020 2:45	9/3/2020 8:15	330	1	1,053,679	405	3	Cloudburst		1,475,151	1
	9/28/2020 12:15	9/28/2020 14:30	135	0	153,205	0	6	Atlas		32,173	1
	10/19/2020 8:30	10/19/2020 11:15	165	1	228,850	14	24	Atlas		290,640	1
	10/19/2020 19:45	10/20/2020 7:00	675	1	815,173	14	24	Atlas		1,035,270	1
	10/23/2020 18:30	10/23/2020 19:15	45	0	582,771	0	1	Atlas		180,659	1
	10/28/2020 23:45	10/29/2020 19:15	1170	3	779,018	501	24	Cloudburst		2,251,362	1
	11/11/2020 1:45	11/11/2020 1:45	0	0	51,050	0	12	Atlas		9,189	1
	11/15/2020 4:15	11/15/2020 7:45	210	0	310,381	0	6	Atlas		133,464	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	11/25/2020 4:00	11/25/2020 10:00	360	1	87,975	98	6	Cloudburst		126,684	1
	11/25/2020 18:15	11/25/2020 18:30	15	1	46,089	98	6	Cloudburst		66,368	1
	12/20/2020 0:00	12/20/2020 0:30	30	0	13,065	0	1	Atlas		3,005	1
	12/24/2020 1:00	12/24/2020 1:30	30	0	244,543	0	12	Atlas		51,354	1
	12/30/2020 13:30	12/31/2020 4:15	885	1	82,733	14	24	Atlas		98,452	1
	1/1/2021 4:45	1/1/2021 11:30	405	0	369,025	5	12	Cloudburst		298,910	1
	1/25/2021 8:30	1/25/2021 20:30	720	1	827,006	48	12	Atlas		1,050,297	1
	1/30/2021 21:45	1/30/2021 23:00	75	0	130,202	0	1	Atlas		62,497	1
	2/4/2021 16:15	2/4/2021 16:30	15	0	3,473	0	12	Atlas		1,285	1
	2/10/2021 17:00	2/10/2021 17:15	15	0	29,900	0	12	Atlas		7,475	1
	2/28/2021 2:00	3/1/2021 0:30	1350	3	1,263,189	500	24	Cloudburst		3,233,764	1
	3/17/2021 17:00	3/18/2021 8:00	900	0	81,020	0	1	Atlas		44,561	1
	3/25/2021 10:15	3/25/2021 11:45	90	0	1,359,657	0	3	Atlas		285,528	1
	3/30/2021 22:45	3/31/2021 2:00	195	0	633,991	13	6	Cloudburst		519,873	1
	4/7/2021 17:45	4/7/2021 18:30	45	0	401,761	12	1	Atlas		204,898	1
	4/10/2021 12:15	4/10/2021 19:15	420	0	130,362	0	12	Atlas		48,234	1
	4/24/2021 15:15	4/24/2021 15:30	15	0	6,323	0	12	Atlas		1,897	1
	4/28/2021 15:30	4/28/2021 16:00	30	2	117,521	429	1	Atlas		208,012	1
	4/29/2021 1:15	4/29/2021 16:30	915	2	246,431	429	1	Atlas		436,182	1
	5/3/2021 2:45	5/3/2021 5:00	135	0	45,566	0	12	Atlas		14,581	1
	5/4/2021 7:15	5/4/2021 8:15	60	0	109,673	2	24	Cloudburst		84,448	1
	5/5/2021 0:00	5/5/2021 1:15	75	0	133,474	2	24	Cloudburst		102,775	1
	5/9/2021 10:15	5/9/2021 11:15	60	0	113,972	0	1	Atlas		33,052	1
	5/26/2021 10:30	5/26/2021 12:30	120	0	481,647	9	3	Atlas		337,153	1
	6/2/2021 3:00	6/2/2021 21:45	1125	0	54,743	0	24	Atlas		38,320	1
	6/3/2021 8:30	6/3/2021 13:45	315	0	686,262	12	6	Cloudburst		576,460	1
	6/6/2021 16:45	6/6/2021 17:00	15	0	268,658	0	12	Atlas		32,239	1
	6/7/2021 3:30	6/7/2021 4:15	45	0	392,258	0	1	Atlas		74,529	1
	6/7/2021 13:30	6/7/2021 13:30	0	0	67,020	0	1	Atlas		6,702	1
	6/8/2021 15:00	6/8/2021 15:15	15	0	49,959	0	24	Atlas		15,987	1
	6/11/2021 17:30	6/11/2021 17:30	0	0	9,675	0	1	Atlas		1,548	1
	6/29/2021 17:30	6/29/2021 18:00	30	0	641,504	0	1	Atlas		147,546	1
CSO050 Total										18,613,836	53
CSO051	7/5/2020 18:15	7/5/2020 18:15	0	0	13,464	0	1	Atlas		1,885	1
	7/7/2020 22:30	7/7/2020 22:30	0	0	23,081	0	1	Atlas		3,693	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	7/11/2020 19:45	7/11/2020 19:45	0	0	2,854	2	12	Cloudburst		1,912	1
	7/23/2020 19:00	7/23/2020 19:00	0	0	7,834	0	24	Atlas		4,544	1
	7/30/2020 8:30	7/30/2020 21:00	750	2	70,494	501	12	Cloudburst		169,186	1
	8/1/2020 12:15	8/1/2020 16:00	225	0	15,361	0	12	Atlas		2,765	1
	8/14/2020 5:30	8/14/2020 7:00	90	1	22,012	34	6	Cloudburst		24,433	1
	8/23/2020 16:45	8/23/2020 16:45	0	0	36,400	0	3	Atlas		2,912	1
	8/28/2020 22:30	8/28/2020 22:30	0	0	10,600	0	3	Atlas		4,452	1
	8/31/2020 5:15	8/31/2020 5:15	0	0	1,973	0	1	Atlas		434	1
	9/2/2020 3:30	9/2/2020 4:30	60	0	10,694	7	3	Atlas		6,630	1
	9/3/2020 2:45	9/3/2020 7:30	285	1	48,057	405	3	Cloudburst		67,280	1
	10/19/2020 9:00	10/19/2020 9:00	0	1	5,133	14	24	Atlas		6,519	1
	10/19/2020 19:45	10/20/2020 2:30	405	1	14,176	14	24	Atlas		18,004	1
	10/23/2020 18:30	10/23/2020 18:45	15	0	23,203	0	1	Atlas		7,193	1
	10/29/2020 1:30	10/29/2020 7:00	330	3	12,738	501	24	Cloudburst		36,812	1
	12/24/2020 1:00	12/24/2020 1:00	0	0	21,824	0	12	Atlas		4,583	1
	1/1/2021 7:30	1/1/2021 7:30	0	0	937	5	12	Cloudburst		759	1
	1/25/2021 10:30	1/25/2021 14:30	240	1	16,342	48	12	Atlas		20,754	1
	2/28/2021 4:45	2/28/2021 11:00	375	3	61,455	500	24	Cloudburst		157,325	1
	2/28/2021 20:15	2/28/2021 22:00	105	3	18,197	500	24	Cloudburst		46,585	1
	3/11/2021 19:45	3/12/2021 0:00	255	1	23,179	12	12	Atlas		25,033	1
	3/25/2021 10:15	3/25/2021 10:30	15	0	29,595	0	3	Atlas		6,215	1
	3/30/2021 23:30	3/31/2021 1:15	105	0	11,541	13	6	Cloudburst		9,464	1
	4/7/2021 17:30	4/7/2021 18:00	30	0	18,916	12	1	Atlas		9,647	1
	4/28/2021 15:15	4/28/2021 15:30	15	2	3,570	429	1	Atlas		6,319	1
	4/29/2021 1:00	4/29/2021 2:00	60	2	5,194	429	1	Atlas		9,193	1
	4/29/2021 13:15	4/29/2021 13:15	0	2	3,408	429	1	Atlas		6,033	1
	5/4/2021 7:00	5/4/2021 7:00	0	0	2,301	2	24	Cloudburst		1,772	1
	5/4/2021 23:45	5/4/2021 23:45	0	0	3,473	2	24	Cloudburst		2,674	1
	5/26/2021 10:30	5/26/2021 11:30	60	0	32,281	9	3	Atlas		22,597	1
	6/2/2021 11:15	6/2/2021 11:15	0	0	744	0	24	Atlas		521	1
	6/3/2021 8:30	6/3/2021 13:15	285	0	52,635	12	6	Cloudburst		44,213	1
	6/6/2021 16:30	6/6/2021 16:30	0	0	8,333	0	12	Atlas		1,000	1
	6/29/2021 17:15	6/29/2021 17:30	15	0	61,987	0	1	Atlas		14,257	1
CSO051 Total										747,598	35
CSO052	7/30/2020 9:15	7/30/2020 10:00	45	3	1,798	505	12	Cloudburst		4,800	1
	7/30/2020 19:15	7/30/2020 19:15	0	3	863	505	12	Cloudburst		2,305	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	8/22/2020 14:00	8/22/2020 14:00	0	0	83,071	0	1	Atlas		5,815	1
	10/20/2020 1:15	10/20/2020 1:15	0	1	403	170	24	Cloudburst		463	1
	2/28/2021 5:30	2/28/2021 8:00	150	2	1,546	504	24	Cloudburst		3,663	1
	3/11/2021 19:45	3/11/2021 20:00	15	1	2,794	330	12	Cloudburst		2,906	1
	3/25/2021 10:15	3/25/2021 11:00	45	0	16,914	1	3	Atlas		3,721	1
	6/3/2021 12:15	6/3/2021 12:15	0	0	572	357	6	Cloudburst		463	1
	6/29/2021 17:15	6/29/2021 17:15	0	0	14,585	7	1	Atlas		3,938	1
CSO052 Total										28,074	9
CSO053	5/26/2021 10:30	5/26/2021 12:15	105	0	68,115	342	3	Cloudburst		49,043	1
	6/2/2021 3:00	6/2/2021 3:00	0	0	5,706	7	24	Cloudburst		3,823	1
	6/2/2021 11:30	6/2/2021 11:30	0	0	9,630	7	24	Cloudburst		6,452	1
	6/3/2021 8:45	6/3/2021 12:45	240	0	147,452	357	6	Cloudburst		119,436	1
	6/6/2021 15:15	6/6/2021 16:45	90	0	51,217	0	12	Atlas		6,146	1
	6/7/2021 3:30	6/7/2021 4:00	30	0	54,700	0	1	Atlas		14,769	1
	6/7/2021 13:30	6/7/2021 13:30	0	0	14,352	0	1	Atlas		3,875	1
	6/29/2021 17:30	6/29/2021 17:30	0	0	281,070	7	1	Atlas		75,889	1
CSO053 Total										279,433	8
CSO054	7/30/2020 9:30	7/30/2020 21:00	690	3	196,654	505	12	Cloudburst		525,066	1
	8/23/2020 17:15	8/23/2020 17:30	15	0	17,093	0	3	Atlas		2,564	1
	9/3/2020 5:15	9/3/2020 7:30	135	1	222,603	501	6	Cloudburst		255,993	1
	10/20/2020 1:15	10/20/2020 2:15	60	1	123,130	170	24	Cloudburst		141,600	1
	10/29/2020 3:00	10/29/2020 4:15	75	3	41,809	504	24	Cloudburst		108,703	1
	1/25/2021 13:15	1/25/2021 14:15	60	1	60,031	500	12	Cloudburst		70,836	1
	2/28/2021 4:45	2/28/2021 11:15	390	2	257,479	504	24	Cloudburst		610,225	1
	2/28/2021 20:30	2/28/2021 22:00	90	2	78,024	504	24	Cloudburst		184,917	1
	3/11/2021 23:15	3/12/2021 0:00	45	1	42,874	330	12	Cloudburst		44,589	1
	6/3/2021 12:30	6/3/2021 13:15	45	0	87,244	357	6	Cloudburst		70,668	1
CSO054 Total										2,015,161	10
CSO055	7/5/2020 18:15	7/5/2020 18:30	15	0	71,820	0	1	Atlas		3,591	1
	7/7/2020 22:15	7/7/2020 22:30	15	0	118,123	4	1	Atlas		30,712	1
	7/11/2020 20:00	7/11/2020 20:00	0	0	142	14	12	Atlas		81	1
	7/23/2020 17:30	7/23/2020 19:15	105	0	60,656	89	3	Cloudburst		51,558	1
	7/30/2020 9:15	7/30/2020 21:30	735	3	508,700	505	12	Cloudburst		1,358,228	1
	8/3/2020 1:15	8/3/2020 1:15	0	0	8,492	0	3	Atlas		1,019	1
	8/14/2020 5:45	8/14/2020 7:30	105	0	182,860	65	6	Cloudburst		133,488	1
	8/22/2020 14:15	8/22/2020 14:15	0	0	328,043	0	1	Atlas		22,963	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	8/23/2020 17:00	8/23/2020 18:15	75	0	1,692,527	0	3	Atlas		253,879	1
	8/28/2020 22:30	8/28/2020 22:45	15	0	7,523	1	3	Atlas		3,009	1
	9/2/2020 3:45	9/2/2020 4:45	60	0	41,762	7	3	Atlas		15,452	1
	9/3/2020 3:00	9/3/2020 8:00	300	1	473,201	501	6	Cloudburst		544,181	1
	10/19/2020 9:15	10/19/2020 9:15	0	1	211	170	24	Cloudburst		243	1
	10/20/2020 1:00	10/20/2020 1:30	30	1	126,324	170	24	Cloudburst		145,273	1
	10/23/2020 18:45	10/23/2020 18:45	0	0	215	6	1	Atlas		58	1
	10/29/2020 0:30	10/29/2020 9:45	555	3	33,283	504	24	Cloudburst		86,537	1
	11/25/2020 6:15	11/25/2020 6:15	0	1	178	501	6	Cloudburst		248	1
	1/1/2021 7:30	1/1/2021 7:30	0	0	2,203	55	12	Atlas		1,608	1
	1/25/2021 10:30	1/25/2021 15:30	300	1	13,175	500	12	Cloudburst		15,547	1
	2/28/2021 4:30	2/28/2021 12:15	465	2	106,751	504	24	Cloudburst		253,001	1
	2/28/2021 20:30	2/28/2021 23:45	195	2	171,335	504	24	Cloudburst		406,065	1
	3/11/2021 20:00	3/12/2021 5:00	540	1	200,323	330	12	Cloudburst		208,336	1
	3/15/2021 13:45	3/15/2021 13:45	0	0	464	0	3	Atlas		65	1
	3/18/2021 0:45	3/18/2021 0:45	0	0	75,066	5	3	Atlas		37,533	1
	3/25/2021 10:15	3/25/2021 11:00	45	0	1,309	1	3	Atlas		288	1
	3/30/2021 23:45	3/31/2021 1:45	120	0	134,010	422	6	Cloudburst		111,228	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	40,075	488	1	Atlas		20,438	1
	4/10/2021 19:00	4/10/2021 19:00	0	0	2,084	2	12	Cloudburst		792	1
	4/28/2021 15:15	4/28/2021 15:30	15	2	11,206	501	24	Cloudburst		17,145	1
	4/29/2021 1:15	4/29/2021 2:45	90	2	14,030	501	24	Cloudburst		21,466	1
	4/29/2021 13:30	4/29/2021 13:30	0	2	4,963	501	24	Cloudburst		7,594	1
	5/5/2021 0:00	5/5/2021 0:00	0	0	6	12	24	Atlas		4	1
	5/26/2021 10:30	5/26/2021 11:15	45	0	6,118	342	3	Cloudburst		4,405	1
	6/2/2021 21:45	6/2/2021 21:45	0	0	181	7	24	Cloudburst		121	1
	6/3/2021 8:30	6/3/2021 13:45	315	0	242,263	357	6	Cloudburst		196,233	1
	6/7/2021 3:30	6/7/2021 3:45	15	0	6,548	0	1	Atlas		1,768	1
	6/29/2021 17:30	6/29/2021 17:30	0	0	270,781	7	1	Atlas		73,111	1
CSO055 Total										4,027,268	37
CSO056	7/7/2020 22:30	7/7/2020 22:30	0	0	157,588	4	1	Atlas		40,973	1
	7/30/2020 9:30	7/30/2020 20:45	675	3	115,829	505	12	Cloudburst		309,264	1
	8/14/2020 5:30	8/14/2020 7:00	90	0	73,473	65	6	Cloudburst		53,635	1
	8/22/2020 14:15	8/22/2020 14:15	0	0	56,329	0	1	Atlas		3,943	1
	8/23/2020 17:00	8/23/2020 17:45	45	0	1,240,853	0	3	Atlas		186,128	1
	9/3/2020 5:00	9/3/2020 7:15	135	1	121,977	501	6	Cloudburst		140,274	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	10/20/2020 1:30	10/20/2020 2:15	45	1	92,301	170	24	Cloudburst		106,146	1
	10/29/2020 3:00	10/29/2020 4:15	75	3	26,287	504	24	Cloudburst		68,345	1
	1/25/2021 13:30	1/25/2021 13:45	15	1	8,797	500	12	Cloudburst		10,381	1
	2/28/2021 5:00	2/28/2021 9:30	270	2	172,483	504	24	Cloudburst		408,785	1
	2/28/2021 20:45	2/28/2021 21:30	45	2	45,549	504	24	Cloudburst		107,951	1
	3/11/2021 23:30	3/11/2021 23:45	15	1	13,248	330	12	Cloudburst		13,778	1
	3/18/2021 0:45	3/18/2021 0:45	0	0	100,262	5	3	Atlas		50,131	1
	3/25/2021 10:30	3/25/2021 10:30	0	0	232,114	1	3	Atlas		51,065	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	11,198	488	1	Atlas		5,711	1
	6/3/2021 8:45	6/3/2021 13:00	255	0	232,696	357	6	Cloudburst		188,484	1
	6/29/2021 17:30	6/29/2021 17:45	15	0	341,922	7	1	Atlas		92,319	1
CSO056 Total										1,837,313	17
CSO057	7/23/2020 17:30	7/23/2020 17:30	0	0	939	0	24	Atlas		554	1
	7/30/2020 8:30	7/30/2020 19:30	660	3	799	501	12	Cloudburst		2,126	1
	8/1/2020 12:15	8/1/2020 12:15	0	0	2,669	0	1	Atlas		347	1
CSO057 Total										3,027	3
CSO062	7/1/2020 0:15	7/1/2020 1:30	75	0	55,953,357	0	3	Atlas		3,916,735	1
	7/23/2020 19:30	7/23/2020 22:00	150	0	10,249,743	4	3	Atlas		9,429,764	1
	7/30/2020 9:30	7/31/2020 9:15	1425	2	39,462,101	107	12	Cloudburst		80,897,307	1
	8/1/2020 23:00	8/2/2020 0:45	105	0	25,105,019	0	48	Atlas		6,778,355	1
	8/14/2020 5:30	8/14/2020 11:15	345	0	27,006,673	2	6	Cloudburst		20,255,005	1
	8/21/2020 19:45	8/21/2020 19:45	0	0	4,059,295	0	3	Atlas		771,266	1
	8/23/2020 17:30	8/23/2020 19:30	120	0	26,660,504	0	1	Atlas		6,665,126	1
	8/28/2020 22:30	8/29/2020 2:30	240	0	18,751,168	0	48	Atlas		7,500,467	1
	9/2/2020 5:15	9/2/2020 5:30	15	0	4,260,760	0	3	Atlas		1,278,228	1
	9/3/2020 4:15	9/3/2020 22:30	1095	0	61,391,894	5	6	Cloudburst		57,094,461	1
	10/19/2020 9:15	10/20/2020 22:15	2220	1	79,464,851	2	24	Cloudburst		91,384,579	1
	10/23/2020 19:15	10/23/2020 21:45	150	0	62,635,708	0	1	Atlas		7,516,285	1
	10/29/2020 0:15	10/30/2020 18:15	2520	2	67,201,924	43	24	Atlas		144,484,137	1
	11/15/2020 8:15	11/15/2020 8:45	30	0	5,352,588	0	6	Atlas		1,712,828	1
	11/25/2020 7:15	11/26/2020 16:30	1995	1	69,497,283	5	6	Cloudburst		79,921,875	1
	12/16/2020 12:00	12/16/2020 13:15	75	0	19,097,222	0	6	Atlas		5,156,250	1
	12/20/2020 0:45	12/20/2020 3:15	150	0	37,812,500	0	3	Atlas		9,453,125	1
	12/24/2020 1:30	12/24/2020 6:15	285	0	42,968,750	0	12	Atlas		8,593,750	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	12/30/2020 15:30	1/2/2021 0:30	3420	1	173,261,575	2	12	Cloudburst		174,994,191	1
	1/25/2021 10:30	1/25/2021 18:45	495	1	17,590,290	5	12	Cloudburst		18,469,804	1
	2/28/2021 4:30	3/2/2021 3:30	2820	2	82,177,161	36	24	Atlas		160,245,463	1
	3/11/2021 23:30	3/11/2021 23:45	15	0	1,416,470	1	12	Cloudburst		1,218,164	1
	6/3/2021 12:30	6/3/2021 13:00	30	0	3,182,263	2	6	Cloudburst		2,386,697	1
CSO062 Total										900,123,862	23
CSO082	7/1/2020 0:00	7/1/2020 1:30	90	0	1,053,117	0	3	Atlas		63,187	1
	7/23/2020 19:15	7/23/2020 21:45	150	0	520,520	2	24	Cloudburst		307,107	1
	7/30/2020 9:15	7/31/2020 9:00	1425	2	1,730,894	501	12	Cloudburst		3,392,553	1
	8/1/2020 22:45	8/2/2020 0:45	120	0	1,427,933	0	12	Atlas		171,352	1
	8/14/2020 5:15	8/14/2020 10:45	330	0	778,075	23	6	Cloudburst		645,802	1
	8/21/2020 19:15	8/21/2020 20:00	45	0	106,350	0	3	Atlas		27,651	1
	8/28/2020 22:30	8/29/2020 0:30	120	0	271,285	0	48	Atlas		105,801	1
	9/2/2020 5:00	9/2/2020 5:45	45	0	150,786	0	3	Atlas		42,220	1
	9/3/2020 4:00	9/3/2020 14:30	630	0	1,537,470	51	6	Cloudburst		1,352,974	1
	10/19/2020 9:45	10/20/2020 11:30	1545	1	2,333,359	14	24	Atlas		2,426,693	1
	10/23/2020 20:00	10/23/2020 20:30	30	0	239,557	0	1	Atlas		33,538	1
	10/29/2020 0:45	10/30/2020 18:15	2490	2	2,786,068	500	24	Cloudburst		5,572,136	1
	11/15/2020 8:00	11/15/2020 8:45	45	0	149,732	0	6	Atlas		41,925	1
	11/25/2020 6:45	11/25/2020 21:45	900	1	979,220	80	6	Cloudburst		1,155,480	1
	12/24/2020 2:15	12/24/2020 4:15	120	0	844,900	0	6	Atlas		168,980	1
	12/30/2020 15:15	1/2/2021 0:30	3435	1	6,352,719	22	12	Atlas		6,416,246	1
	1/25/2021 10:00	1/25/2021 19:15	555	1	753,960	69	12	Atlas		806,737	1
	2/28/2021 5:00	3/2/2021 3:30	2790	2	3,234,096	500	24	Cloudburst		6,435,851	1
	3/11/2021 22:45	3/12/2021 9:15	630	0	187,456	14	12	Atlas		163,087	1
	3/31/2021 0:30	3/31/2021 1:30	60	0	18,971	13	6	Cloudburst		12,521	1
	6/3/2021 12:15	6/3/2021 13:30	75	1	97,531	253	1	Atlas		98,506	1
CSO082 Total										29,440,347	21
CSO083	7/23/2020 17:45	7/23/2020 17:45	0	0	13,514	1	24	Cloudburst		7,568	1
	8/14/2020 5:45	8/14/2020 5:45	0	0	839	9	6	Cloudburst		604	1
	8/23/2020 16:45	8/23/2020 17:30	45	0	114,405	6	1	Atlas		48,050	1
	9/3/2020 4:30	9/3/2020 5:00	30	0	17,246	90	6	Cloudburst		16,384	1
	10/20/2020 1:45	10/20/2020 1:45	0	0	11,639	8	24	Cloudburst		10,708	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	10/29/2020 3:15	10/29/2020 3:15	0	2	1,128	500	24	Cloudburst		2,335	1
	2/28/2021 5:30	2/28/2021 6:00	30	2	14,475	501	24	Cloudburst		30,688	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	19,178	501	24	Cloudburst		40,658	1
	4/29/2021 2:15	4/29/2021 2:15	0	0	29,327	5	24	Cloudburst		22,875	1
CSO083 Total										179,870	9
CSO088	7/23/2020 19:30	7/23/2020 19:30	0	1	6,024	500	3	Cloudburst		6,747	1
	6/3/2021 12:45	6/3/2021 12:45	0	0	8,176	243	6	Cloudburst		7,195	1
CSO088 Total										13,942	2
CSO092	7/6/2020 17:15	7/6/2020 17:15	0	0	1,158	0	1	Atlas		220	1
	7/30/2020 9:15	7/30/2020 20:00	645	2	11,775	502	12	Cloudburst		27,317	1
	8/14/2020 5:15	8/14/2020 5:15	0	0	823	8	6	Cloudburst		601	1
	8/21/2020 14:30	8/21/2020 18:30	240	0	1,400	0	24	Atlas		630	1
	8/23/2020 16:45	8/23/2020 16:45	0	0	2,557	0	1	Atlas		537	1
	8/28/2020 22:30	8/28/2020 22:30	0	0	151	0	6	Atlas		53	1
	9/2/2020 3:30	9/2/2020 4:30	60	0	5,670	3	3	Atlas		2,438	1
	9/3/2020 2:45	9/3/2020 6:45	240	1	3,781	271	6	Cloudburst		4,084	1
	10/19/2020 8:45	10/19/2020 9:30	45	1	581	14	24	Atlas		587	1
	10/20/2020 0:45	10/20/2020 5:45	300	1	8,347	14	24	Atlas		8,430	1
	10/23/2020 18:45	10/23/2020 18:45	0	0	1,229	0	1	Atlas		209	1
	10/29/2020 0:15	10/29/2020 8:30	495	2	771	500	24	Cloudburst		1,558	1
	11/15/2020 4:15	11/15/2020 4:15	0	0	120	0	6	Atlas		30	1
	11/25/2020 6:15	11/25/2020 7:30	75	1	532	75	6	Cloudburst		623	1
	12/24/2020 1:00	12/24/2020 1:00	0	0	800	0	12	Atlas		184	1
	2/28/2021 4:15	2/28/2021 8:00	225	2	12,063	501	24	Cloudburst		26,417	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	1,338	501	24	Cloudburst		2,931	1
	3/11/2021 20:00	3/11/2021 23:15	195	0	2,267	27	12	Atlas		2,222	1
	3/25/2021 10:00	3/25/2021 10:15	15	0	1,487	3	3	Atlas		565	1
	3/31/2021 0:00	3/31/2021 21:45	1305	0	52,674	17	6	Cloudburst		36,345	1
	4/24/2021 19:30	4/25/2021 14:45	1155	0	75,855	0	12	Atlas		16,688	1
	4/28/2021 15:15	4/28/2021 16:30	75	0	591	10	24	Cloudburst		538	1
	4/29/2021 1:15	4/29/2021 14:30	795	0	92	10	24	Cloudburst		84	1
	5/3/2021 2:45	5/3/2021 6:45	240	0	106	0	12	Atlas		37	1
	5/4/2021 7:15	5/4/2021 8:00	45	0	23	6	24	Cloudburst		18	1
	5/5/2021 0:00	5/5/2021 0:30	30	0	8	6	24	Cloudburst		6	1
	5/9/2021 10:15	5/9/2021 14:30	255	0	184	0	1	Atlas		46	1
	6/3/2021 12:15	6/3/2021 12:30	15	0	4,189	15	6	Cloudburst		2,974	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	6/6/2021 16:30	6/6/2021 16:30	0	0	86	2	1	Atlas		32	1
CSO092 Total										136,404	29
CSO093	10/20/2020 1:00	10/20/2020 1:15	15	1	1,507	8	24	Cloudburst		1,703	1
	6/3/2021 12:15	6/3/2021 12:15	0	0	53	38	1	Atlas		47	1
CSO093 Total										1,750	2
CSO097	7/5/2020 17:45	7/5/2020 18:30	45	0	86,169	3	1	Atlas		33,606	1
	7/6/2020 17:15	7/6/2020 17:45	30	0	279,062	0	1	Atlas		72,556	1
	7/12/2020 3:45	7/12/2020 3:45	0	0	687	0	12	Atlas		268	1
	7/20/2020 14:30	7/20/2020 14:45	15	0	19,314	21	1	Atlas		11,202	1
	10/19/2020 9:00	10/19/2020 11:15	135	1	77,999	8	24	Cloudburst		85,799	1
	10/19/2020 20:00	10/20/2020 3:00	420	1	363,929	8	24	Cloudburst		400,322	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	4,493	0	1	Atlas		674	1
	10/29/2020 0:15	10/29/2020 22:00	1305	2	375,141	435	12	Cloudburst		862,825	1
	11/15/2020 7:30	11/15/2020 8:00	30	0	24,862	0	6	Atlas		7,210	1
	11/25/2020 7:30	11/25/2020 10:00	150	1	12,388	34	6	Cloudburst		14,866	1
	12/30/2020 20:15	12/31/2020 4:30	495	1	93,441	11	12	Atlas		103,719	1
	1/1/2021 5:00	1/1/2021 13:00	480	0	484,704	9	12	Cloudburst		441,081	1
	1/25/2021 9:15	1/25/2021 19:15	600	1	411,418	40	12	Atlas		497,816	1
	1/30/2021 22:30	1/30/2021 23:30	60	0	33,359	0	12	Atlas		13,010	1
	2/28/2021 4:00	3/1/2021 13:30	2010	3	1,782,673	500	24	Cloudburst		4,456,682	1
	3/11/2021 20:00	3/12/2021 9:15	795	1	355,246	16	12	Atlas		387,218	1
	3/15/2021 13:30	3/15/2021 14:30	60	0	96,633	0	3	Atlas		11,596	1
	3/18/2021 1:00	3/18/2021 8:15	435	0	66,200	0	24	Atlas		27,804	1
	3/25/2021 10:15	3/25/2021 11:15	60	0	67,471	2	1	Atlas		27,663	1
	3/30/2021 23:30	3/31/2021 2:15	165	0	204,996	10	6	Cloudburst		161,947	1
	4/10/2021 12:00	4/10/2021 14:00	120	0	49,794	4	6	Cloudburst		34,358	1
	4/28/2021 15:15	4/28/2021 16:15	60	0	98,358	5	24	Cloudburst		93,440	1
	4/29/2021 2:00	4/29/2021 14:15	735	0	99,487	5	24	Cloudburst		94,513	1
	5/3/2021 2:45	5/3/2021 3:15	30	0	40,145	0	12	Atlas		19,671	1
	5/4/2021 7:15	5/4/2021 8:15	60	0	56,554	0	1	Atlas		19,794	1
	5/4/2021 23:45	5/5/2021 1:45	120	0	184,398	1	6	Cloudburst		88,511	1
	5/9/2021 10:30	5/9/2021 11:00	30	0	14,400	0	3	Atlas		4,464	1
	5/26/2021 10:45	5/26/2021 12:30	105	0	91,306	3	3	Atlas		48,392	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	6/3/2021 12:00	6/3/2021 14:00	120	1	343,838	476	1	Atlas		374,783	1
	6/7/2021 3:30	6/7/2021 4:30	60	0	145,197	1	1	Atlas		52,271	1
CSO097 Total										8,448,061	30
CSO105	10/29/2020 2:45	10/29/2020 2:45	0	3	44,752	500	24	Cloudburst		152,156	1
	1/1/2021 7:00	1/1/2021 7:15	15	1	29,523	8	12	Cloudburst		35,132	1
CSO105 Total										187,288	2
CSO108	7/25/2020 20:45	7/25/2020 21:00	15	0	2,043,205	0	1	Atlas		755,986	1
	7/30/2020 19:15	7/30/2020 19:30	15	3	343,062	4	12	Cloudburst		1,087,508	1
	2/28/2021 5:15	2/28/2021 5:30	15	3	391,078	2	24	Cloudburst		1,271,002	1
	2/28/2021 20:30	2/28/2021 21:00	30	3	331,817	2	24	Cloudburst		1,078,406	1
	4/28/2021 15:00	4/28/2021 15:15	15	1	990,749	0	24	Atlas		1,218,621	1
	6/3/2021 12:15	6/3/2021 12:15	0	1	246,678	1	1	Atlas		355,217	1
CSO108 Total										5,766,740	6
CSO109	7/6/2020 17:30	7/6/2020 17:45	15	0	1,502,418	0	1	Atlas		165,266	1
	7/20/2020 14:30	7/20/2020 14:30	0	0	68,729	0	1	Atlas		32,990	1
	7/25/2020 20:45	7/25/2020 21:00	15	0	1,557,544	0	1	Atlas		140,179	1
	7/30/2020 10:15	7/30/2020 20:30	615	3	244,938	62	12	Atlas		693,175	1
	8/1/2020 22:15	8/1/2020 22:15	0	0	245,648	0	6	Atlas		51,586	1
	8/21/2020 14:30	8/21/2020 18:30	240	0	407,789	0	24	Atlas		289,530	1
	8/22/2020 14:15	8/22/2020 14:15	0	0	24,324	0	24	Atlas		17,270	1
	9/3/2020 3:00	9/3/2020 12:15	555	1	125,521	6	6	Cloudburst		183,260	1
	10/20/2020 1:30	10/20/2020 1:45	15	1	67,734	0	24	Atlas		75,862	1
	10/29/2020 3:15	10/29/2020 3:15	0	3	13,323	17	12	Atlas		34,373	1
	1/1/2021 7:45	1/1/2021 7:45	0	0	51,425	0	12	Atlas		47,825	1
	1/25/2021 13:30	1/25/2021 13:30	0	1	537	3	12	Cloudburst		773	1
	2/28/2021 4:45	3/1/2021 1:45	1260	3	404,521	61	24	Cloudburst		1,302,558	1
	3/11/2021 20:15	3/11/2021 23:45	210	1	75,137	2	12	Cloudburst		97,678	1
	4/28/2021 15:15	4/28/2021 15:30	15	1	221,500	0	24	Atlas		230,360	1
	6/3/2021 12:15	6/3/2021 12:30	15	1	161,482	38	1	Atlas		235,764	1
CSO109 Total										3,598,449	16
CSO111	7/5/2020 17:45	7/5/2020 18:15	30	0	357,573	1	1	Atlas		214,544	1
	7/20/2020 14:45	7/20/2020 15:00	15	0	16,789	2	1	Atlas		12,256	1
	7/23/2020 20:00	7/23/2020 20:00	0	0	3,336	0	24	Atlas		2,235	1
	7/30/2020 10:15	7/30/2020 21:00	645	2	556,326	24	12	Atlas		1,329,620	1
	8/1/2020 22:15	8/1/2020 22:15	0	0	17,677	0	6	Atlas		2,298	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	8/21/2020 18:30	8/21/2020 18:45	15	0	32,216	0	48	Atlas		19,974	1
	8/22/2020 14:45	8/22/2020 14:45	0	0	3,152	0	48	Atlas		1,954	1
	9/2/2020 4:45	9/2/2020 5:00	15	0	22,664	0	3	Atlas		8,839	1
	9/3/2020 3:00	9/3/2020 7:00	240	1	70,823	2	6	Cloudburst		81,446	1
	10/20/2020 1:00	10/20/2020 1:00	0	0	16,341	0	24	Atlas		16,014	1
	1/1/2021 11:00	1/1/2021 11:30	30	0	22,751	0	12	Atlas		19,338	1
	2/28/2021 5:45	2/28/2021 22:15	990	2	306,128	7	24	Cloudburst		642,869	1
	3/11/2021 20:00	3/12/2021 0:00	240	1	13,887	0	12	Atlas		14,859	1
	3/18/2021 1:00	3/18/2021 8:00	420	0	42,347	0	24	Atlas		21,597	1
	3/25/2021 10:15	3/25/2021 10:45	30	0	42,007	0	3	Atlas		17,223	1
	3/30/2021 23:30	3/31/2021 1:15	105	0	122,855	0	6	Atlas		93,370	1
	5/3/2021 3:00	5/3/2021 3:15	15	0	42,795	0	12	Atlas		16,262	1
	5/26/2021 11:00	5/26/2021 11:30	30	0	16,836	0	3	Atlas		8,418	1
	6/3/2021 12:15	6/3/2021 13:15	60	0	249,642	0	1	Atlas		182,239	1
	6/6/2021 16:45	6/6/2021 16:45	0	0	14,007	0	1	Atlas		5,883	1
	6/7/2021 4:00	6/7/2021 4:15	15	0	57,359	0	1	Atlas		19,502	1
CSO111 Total										2,730,740	21
CSO113	7/6/2020 17:30	7/6/2020 17:30	0	0	184,621	0	1	Atlas		35,078	1
	7/30/2020 9:30	7/30/2020 20:30	660	2	431,649	502	12	Cloudburst		1,001,425	1
	8/23/2020 17:00	8/23/2020 17:00	0	0	122,733	0	1	Atlas		25,774	1
	9/3/2020 3:00	9/3/2020 6:00	180	1	119,408	271	6	Cloudburst		128,961	1
	10/19/2020 9:30	10/19/2020 9:30	0	1	3,007	14	24	Atlas		3,037	1
	10/20/2020 1:30	10/20/2020 7:15	345	1	458,333	14	24	Atlas		462,916	1
	10/29/2020 3:00	10/29/2020 4:00	60	2	24,342	500	24	Cloudburst		49,170	1
	11/25/2020 7:45	11/25/2020 7:45	0	1	5,161	75	6	Cloudburst		6,038	1
	11/25/2020 18:30	11/25/2020 18:30	0	1	9,104	75	6	Cloudburst		10,652	1
	1/1/2021 7:45	1/1/2021 8:00	15	0	51,874	14	12	Atlas		40,462	1
	1/25/2021 13:30	1/25/2021 13:45	15	1	2,728	69	12	Atlas		2,919	1
	2/28/2021 4:45	2/28/2021 8:30	225	2	253,870	501	24	Cloudburst		555,976	1
	2/28/2021 20:45	2/28/2021 21:15	30	2	98,058	501	24	Cloudburst		214,748	1
	3/11/2021 20:15	3/11/2021 23:45	210	0	78,047	27	12	Atlas		76,486	1
	6/3/2021 12:15	6/3/2021 12:45	30	0	2,475,562	15	6	Cloudburst		1,757,649	1
CSO113 Total										4,371,291	15
CSO117	7/30/2020 13:45	7/30/2020 21:30	465	2	4,337,859	1	12	Cloudburst		10,324,104	1
	8/23/2020 16:30	8/23/2020 16:45	15	0	164,686	0	1	Atlas		36,231	1
	9/3/2020 6:15	9/3/2020 8:30	135	0	1,109,934	0	6	Atlas		1,043,338	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	10/20/2020 1:15	10/20/2020 3:00	105	0	2,970,378	0	24	Atlas		2,821,859	1
	10/29/2020 3:15	10/29/2020 21:15	1080	2	3,061,927	0	24	Atlas		6,613,763	1
	1/1/2021 6:15	1/1/2021 12:00	345	0	5,636,128	0	12	Atlas		3,607,122	1
	1/25/2021 14:00	1/25/2021 19:15	315	1	1,345,445	0	12	Atlas		1,372,354	1
	2/28/2021 5:15	3/1/2021 0:45	1170	2	6,508,268	0	24	Atlas		13,862,610	1
	3/11/2021 23:30	3/12/2021 8:45	555	0	1,071,465	0	12	Atlas		942,889	1
	6/3/2021 12:15	6/3/2021 12:30	15	1	711,745	0	6	Atlas		733,097	1
CSO117 Total										41,357,367	10
CSO118	7/5/2020 18:30	7/5/2020 18:30	0	0	271,086	0	1	Atlas		56,928	1
	7/6/2020 17:30	7/6/2020 17:30	0	0	71,174	1	1	Atlas		16,370	1
	7/7/2020 22:30	7/7/2020 23:00	30	0	4,322,075	0	1	Atlas		345,766	1
	7/11/2020 20:15	7/12/2020 4:30	495	0	492,196	1	12	Cloudburst		231,332	1
	7/23/2020 17:45	7/23/2020 20:15	150	0	1,455,130	1	24	Cloudburst		814,873	1
	7/30/2020 8:45	7/30/2020 23:45	900	2	6,123,022	501	12	Cloudburst		13,042,036	1
	8/1/2020 22:45	8/1/2020 23:00	15	0	64,700	0	12	Atlas		5,823	1
	8/14/2020 5:30	8/14/2020 9:30	240	0	4,011,325	9	6	Cloudburst		2,888,154	1
	8/21/2020 19:00	8/21/2020 19:00	0	0	114,274	0	6	Atlas		35,425	1
	8/23/2020 16:45	8/23/2020 18:00	75	0	12,428,819	6	1	Atlas		5,220,104	1
	8/28/2020 21:30	8/28/2020 23:30	120	0	2,099,385	0	6	Atlas		818,760	1
	9/2/2020 4:00	9/2/2020 5:15	75	0	2,210,181	0	3	Atlas		685,156	1
	9/3/2020 3:15	9/3/2020 9:45	390	0	5,684,320	90	6	Cloudburst		5,400,104	1
	10/19/2020 9:00	10/20/2020 7:15	1335	0	7,322,679	8	24	Cloudburst		6,736,865	1
	10/23/2020 19:00	10/23/2020 19:30	30	0	2,843,585	0	1	Atlas		369,666	1
	10/29/2020 0:15	10/29/2020 22:45	1350	2	5,476,268	500	24	Cloudburst		11,335,874	1
	11/15/2020 5:00	11/15/2020 8:15	195	0	1,033,308	0	6	Atlas		247,994	1
	11/25/2020 6:15	11/25/2020 11:30	315	1	1,514,213	51	6	Cloudburst		1,635,350	1
	12/24/2020 1:30	12/24/2020 3:00	90	0	669,691	0	12	Atlas		147,332	1
	12/30/2020 15:15	12/31/2020 5:45	870	1	2,563,350	24	12	Atlas		2,640,251	1
	1/1/2021 5:15	1/1/2021 15:00	585	0	6,812,160	8	12	Cloudburst		4,768,512	1
	1/25/2021 9:00	1/25/2021 19:15	615	1	4,779,039	62	12	Atlas		5,017,991	1
	1/30/2021 22:30	1/30/2021 23:30	60	0	676,243	0	12	Atlas		250,210	1
	2/28/2021 2:15	3/1/2021 6:15	1680	2	9,300,138	501	24	Cloudburst		19,716,293	1
	3/11/2021 20:15	3/12/2021 9:00	765	0	3,769,015	17	12	Atlas		3,354,423	1
	3/15/2021 14:00	3/15/2021 14:30	30	0	2,463,300	0	3	Atlas		270,963	1
	3/18/2021 1:00	3/18/2021 8:45	465	0	2,214,128	0	24	Atlas		863,510	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	3/25/2021 10:15	3/25/2021 12:00	105	0	4,254,895	5	1	Atlas		1,829,605	1
	3/30/2021 22:45	3/31/2021 2:30	225	0	3,868,558	21	6	Cloudburst		2,785,362	1
	4/7/2021 18:00	4/7/2021 19:30	90	0	4,525,594	3	1	Atlas		1,402,934	1
	4/10/2021 12:00	4/10/2021 20:30	510	0	3,936,476	3	12	Cloudburst		2,125,697	1
	4/11/2021 16:15	4/11/2021 17:45	90	0	300,400	0	6	Atlas		30,040	1
	4/20/2021 23:15	4/21/2021 3:00	225	0	2,997,006	0	6	Atlas		509,491	1
	4/24/2021 15:00	4/24/2021 19:30	270	0	1,685,327	0	12	Atlas		370,772	1
	4/28/2021 15:30	4/29/2021 19:15	1665	0	7,384,222	5	24	Cloudburst		5,759,693	1
	5/3/2021 3:00	5/3/2021 7:15	255	0	6,481,027	0	12	Atlas		1,944,308	1
	5/4/2021 7:15	5/4/2021 10:15	180	0	6,413,128	0	1	Atlas		1,603,282	1
	5/4/2021 21:30	5/5/2021 4:15	405	0	5,123,509	3	1	Atlas		2,254,344	1
	5/7/2021 23:15	5/8/2021 0:15	60	0	9,861,100	0	3	Atlas		394,444	1
	5/9/2021 10:15	5/9/2021 15:45	330	0	4,489,783	0	3	Atlas		1,077,548	1
	5/26/2021 11:00	5/26/2021 12:45	105	0	2,119,540	12	3	Atlas		1,271,724	1
	6/3/2021 8:45	6/3/2021 13:45	300	0	3,506,508	71	6	Cloudburst		3,190,922	1
	6/6/2021 16:45	6/6/2021 17:15	30	0	1,980,029	1	1	Atlas		613,809	1
	6/7/2021 3:45	6/7/2021 4:45	60	0	2,273,255	1	1	Atlas		659,244	1
	6/29/2021 17:45	6/29/2021 18:00	15	0	4,786,700	0	1	Atlas		143,601	1
CSO118 Total										114,882,885	45
CSO119	7/6/2020 17:15	7/6/2020 17:45	30	0	631,104	1	1	Atlas		145,154	1
	7/22/2020 1:15	7/22/2020 1:15	0	0	62,120	0	1	Atlas		12,424	1
	7/23/2020 17:30	7/23/2020 19:45	135	0	407,713	1	24	Cloudburst		228,319	1
	7/30/2020 8:30	7/30/2020 21:15	765	2	702,443	501	12	Cloudburst		1,496,204	1
	8/14/2020 5:15	8/14/2020 9:00	225	0	1,001,732	9	6	Cloudburst		721,247	1
	8/21/2020 18:30	8/21/2020 19:00	30	0	332,032	0	6	Atlas		102,930	1
	8/23/2020 16:30	8/23/2020 18:00	90	0	1,088,190	6	1	Atlas		457,040	1
	8/27/2020 19:15	8/27/2020 19:30	15	0	121,964	0	6	Atlas		47,566	1
	8/28/2020 21:30	8/28/2020 23:00	90	0	481,672	0	6	Atlas		187,852	1
	9/2/2020 3:45	9/2/2020 5:00	75	0	652,774	0	3	Atlas		202,360	1
	9/3/2020 2:45	9/3/2020 7:45	300	0	903,752	90	6	Cloudburst		858,564	1
	10/19/2020 9:00	10/19/2020 11:15	135	0	393,936	8	24	Cloudburst		362,421	1
	10/19/2020 19:45	10/20/2020 2:45	420	0	885,118	8	24	Cloudburst		814,309	1
	10/23/2020 18:45	10/23/2020 19:15	30	0	832,331	0	1	Atlas		108,203	1
	10/29/2020 0:15	10/29/2020 21:15	1260	2	1,041,656	500	24	Cloudburst		2,156,228	1
	11/15/2020 4:45	11/15/2020 7:45	180	0	328,738	0	6	Atlas		78,897	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	11/25/2020 6:15	11/25/2020 10:15	240	1	411,448	51	6	Cloudburst		444,364	1
	11/25/2020 18:30	11/25/2020 18:30	0	1	13,906	51	6	Cloudburst		15,018	1
	12/24/2020 1:15	12/24/2020 1:30	15	0	296,191	0	12	Atlas		65,162	1
	12/30/2020 18:00	12/31/2020 4:30	630	1	769,932	24	12	Atlas		793,030	1
	1/1/2021 5:00	1/1/2021 12:15	435	0	1,393,654	8	12	Cloudburst		975,558	1
	1/25/2021 10:15	1/25/2021 19:00	525	1	723,600	62	12	Atlas		759,780	1
	1/30/2021 22:45	1/30/2021 23:00	15	0	66,949	0	12	Atlas		24,771	1
	2/28/2021 4:30	2/28/2021 23:30	1140	2	562,845	501	24	Cloudburst		1,193,231	1
	3/11/2021 20:00	3/12/2021 4:45	525	0	324,407	17	12	Atlas		288,722	1
	3/15/2021 13:45	3/15/2021 14:00	15	0	176,091	0	3	Atlas		19,370	1
	3/18/2021 7:45	3/18/2021 8:00	15	0	70,203	0	24	Atlas		27,379	1
	4/7/2021 17:45	4/7/2021 18:15	30	0	145,274	3	1	Atlas		45,035	1
	4/10/2021 12:15	4/10/2021 19:00	405	0	102,839	3	12	Cloudburst		55,533	1
	4/28/2021 15:15	4/28/2021 15:45	30	0	161,077	5	24	Cloudburst		125,640	1
	4/29/2021 1:00	4/29/2021 2:30	90	0	207,622	5	24	Cloudburst		161,945	1
	4/29/2021 13:30	4/29/2021 13:45	15	0	59,646	5	24	Cloudburst		46,524	1
	5/3/2021 2:45	5/3/2021 3:00	15	0	190,117	0	12	Atlas		57,035	1
	5/4/2021 7:00	5/4/2021 8:00	60	0	396,516	0	1	Atlas		99,129	1
	5/4/2021 23:45	5/5/2021 0:45	60	0	268,277	3	1	Atlas		118,042	1
	5/9/2021 10:30	5/9/2021 10:45	15	0	146,596	0	3	Atlas		35,183	1
	5/26/2021 10:45	5/26/2021 12:15	90	0	354,297	12	3	Atlas		212,578	1
	6/3/2021 8:30	6/3/2021 13:15	285	0	419,824	71	6	Cloudburst		382,040	1
	6/6/2021 16:30	6/6/2021 16:45	15	0	266,700	1	1	Atlas		82,677	1
	6/7/2021 3:30	6/7/2021 4:15	45	0	529,666	1	1	Atlas		153,603	1
CSO119 Total										14,161,067	40
CSO120	10/19/2020 8:45	10/19/2020 8:45	0	1	11,922	14	24	Atlas		12,399	1
	10/19/2020 19:45	10/19/2020 23:15	210	1	163,165	14	24	Atlas		169,692	1
	10/29/2020 0:00	10/29/2020 0:15	15	2	2,508	500	24	Cloudburst		5,015	1
	10/29/2020 9:00	10/29/2020 22:15	795	2	71,750	500	24	Cloudburst		143,499	1
	11/15/2020 4:30	11/15/2020 13:00	510	0	587,432	0	6	Atlas		164,481	1
	11/25/2020 4:15	11/25/2020 19:30	915	1	289,303	80	6	Cloudburst		341,377	1
	12/25/2020 0:30	12/26/2020 0:45	1455	0	4,350	0	6	Atlas		87	1
	12/30/2020 18:30	12/31/2020 2:30	480	1	30,565	22	12	Atlas		30,871	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	1/1/2021 5:00	1/1/2021 11:00	360	0	203,147	6	12	Cloudburst		134,077	1
	1/25/2021 8:45	1/25/2021 21:00	735	1	118,909	69	12	Atlas		127,233	1
	1/30/2021 21:45	1/30/2021 21:45	0	0	3,253	0	12	Atlas		1,236	1
	2/22/2021 4:45	2/26/2021 5:15	5790	0	12,261,440	0	6	Atlas		613,072	1
	2/28/2021 1:45	3/1/2021 4:30	1605	2	179,705	500	24	Cloudburst		357,613	1
	3/11/2021 23:15	3/12/2021 3:00	225	0	42,475	14	12	Atlas		36,953	1
	3/15/2021 14:15	3/15/2021 16:30	135	0	2,387,008	0	3	Atlas		286,441	1
	4/10/2021 11:45	4/10/2021 12:45	60	0	15,478	3	12	Cloudburst		8,513	1
	4/10/2021 21:30	4/11/2021 2:45	315	0	3,195	3	12	Cloudburst		1,757	1
CSO120 Total										2,434,316	17
CSO121	7/6/2020 17:30	7/6/2020 17:45	15	0	615,222	0	1	Atlas		110,740	1
	7/7/2020 22:30	7/7/2020 22:45	15	0	248,959	0	1	Atlas		54,771	1
	7/11/2020 20:00	7/11/2020 20:15	15	0	87,635	2	12	Cloudburst		45,570	1
	7/23/2020 17:45	7/23/2020 19:45	120	0	428,085	2	24	Cloudburst		252,570	1
	7/30/2020 9:00	7/30/2020 21:45	765	2	400,471	501	12	Cloudburst		784,924	1
	8/1/2020 22:30	8/1/2020 22:30	0	0	112,875	0	12	Atlas		13,545	1
	8/14/2020 5:00	8/14/2020 9:00	240	0	567,035	23	6	Cloudburst		470,639	1
	8/21/2020 18:45	8/21/2020 18:45	0	0	163,138	0	3	Atlas		42,416	1
	8/23/2020 17:00	8/24/2020 8:30	930	0	1,857,246	7	1	Atlas		761,471	1
	8/27/2020 19:30	8/27/2020 19:30	0	0	121,221	0	48	Atlas		47,276	1
	8/28/2020 20:15	8/28/2020 23:00	165	0	392,215	0	48	Atlas		152,964	1
	9/2/2020 3:45	9/2/2020 5:00	75	0	523,568	0	3	Atlas		146,599	1
	9/3/2020 3:00	9/3/2020 11:45	525	0	794,773	51	6	Cloudburst		699,400	1
	9/28/2020 12:45	9/28/2020 12:45	0	0	39,324	0	6	Atlas		6,685	1
	5/26/2021 11:00	5/26/2021 12:00	60	0	50,886	10	3	Atlas		29,005	1
	6/6/2021 16:45	6/6/2021 17:15	30	0	116,178	0	1	Atlas		31,368	1
	6/7/2021 3:30	6/7/2021 4:45	75	0	136,596	0	3	Atlas		35,515	1
CSO121 Total										3,685,458	17
CSO125	7/6/2020 18:00	7/6/2020 19:15	75	0	7,929	0	1	Atlas		1,903	1
	7/11/2020 20:00	7/12/2020 1:45	345	0	9,984	0	12	Atlas		3,794	1
	7/22/2020 1:45	7/22/2020 9:00	435	0	12,437	0	1	Atlas		4,726	1
	7/25/2020 21:30	7/25/2020 21:30	0	0	32,000	0	1	Atlas		320	1
	7/30/2020 10:00	7/30/2020 22:30	750	2	256,398	21	12	Atlas		589,715	1
	8/1/2020 18:00	8/1/2020 22:45	285	0	32,991	0	12	Atlas		3,629	1
	8/14/2020 5:00	8/14/2020 9:45	285	1	25,721	3	6	Cloudburst		32,666	1
	8/21/2020 19:00	8/21/2020 21:15	135	0	26,181	2	1	Atlas		23,563	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	8/22/2020 6:15	8/22/2020 15:30	555	0	6,449	2	1	Atlas		5,804	1
	8/28/2020 22:30	8/30/2020 3:45	1755	0	128,969	0	48	Atlas		79,961	1
	9/2/2020 4:00	9/2/2020 5:15	75	0	2,529	0	3	Atlas		1,062	1
	9/3/2020 3:00	9/3/2020 14:00	660	1	112,459	4	6	Cloudburst		148,446	1
	10/19/2020 20:15	10/20/2020 3:15	420	1	76,616	1	24	Cloudburst		103,432	1
	10/23/2020 19:15	10/23/2020 19:15	0	0	250,385	0	1	Atlas		50,077	1
	10/29/2020 0:30	10/29/2020 21:45	1275	2	1,089,516	8	24	Cloudburst		2,451,411	1
	11/15/2020 4:45	11/15/2020 11:45	420	0	304,158	0	6	Atlas		72,998	1
	11/25/2020 6:30	11/25/2020 9:00	150	1	53,102	2	6	Cloudburst		69,564	1
	11/25/2020 18:45	11/25/2020 18:45	0	1	21	2	6	Cloudburst		28	1
	12/24/2020 1:45	12/24/2020 6:45	300	0	58,670	0	12	Atlas		13,494	1
	12/25/2020 1:45	12/25/2020 1:45	0	0	112,150	0	6	Atlas		2,243	1
	12/25/2020 10:15	12/25/2020 11:15	60	0	86,250	0	6	Atlas		1,725	1
	1/25/2021 11:00	1/25/2021 19:15	495	1	113,396	1	12	Cloudburst		134,941	1
	1/30/2021 23:00	1/30/2021 23:15	15	0	24,683	0	6	Atlas		10,367	1
	2/28/2021 2:15	3/1/2021 6:30	1695	2	4,138,625	7	24	Cloudburst		8,691,112	1
	3/11/2021 20:15	3/12/2021 8:45	750	0	203,824	0	12	Atlas		201,786	1
	3/18/2021 1:15	3/18/2021 1:30	15	0	610	0	12	Atlas		238	1
	4/10/2021 12:15	4/10/2021 14:15	120	0	13,587	0	6	Atlas		11,277	1
	4/28/2021 16:15	4/28/2021 16:30	15	1	4,108	0	24	Atlas		4,847	1
	4/29/2021 1:30	4/29/2021 2:45	75	1	17,358	0	24	Atlas		20,483	1
	4/29/2021 13:45	4/29/2021 14:00	15	1	10,148	0	24	Atlas		11,975	1
	5/5/2021 0:30	5/5/2021 1:00	30	0	27,611	0	24	Atlas		20,984	1
	5/9/2021 10:30	5/9/2021 11:00	30	0	207,958	0	3	Atlas		49,910	1
	5/26/2021 11:00	5/26/2021 12:00	60	0	299,544	0	3	Atlas		149,772	1
	6/7/2021 4:00	6/7/2021 4:00	0	0	93	0	1	Atlas		38	1
CSO125 Total										12,968,291	34
CSO126	7/22/2020 1:30	7/22/2020 1:30	0	0	5,755	0	1	Atlas		2,187	1
	7/23/2020 17:45	7/23/2020 20:15	150	1	7,882	3	3	Atlas		10,404	1
	7/30/2020 11:00	7/30/2020 13:30	150	2	5,300	21	12	Atlas		12,189	1
	7/31/2020 4:30	7/31/2020 4:45	15	2	3,157	21	12	Atlas		7,261	1
	12/30/2020 21:15	12/31/2020 5:45	510	1	49,531	0	12	Atlas		55,475	1
	1/1/2021 5:45	1/1/2021 8:30	165	0	83,454	0	12	Atlas		77,612	1
	1/1/2021 17:15	1/1/2021 17:30	15	0	2,191	0	12	Atlas		2,038	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	1/25/2021 11:00	1/25/2021 21:00	600	1	48,731	1	12	Cloudburst		57,990	1
	2/28/2021 4:45	2/28/2021 5:15	30	2	7,685	7	24	Cloudburst		16,139	1
	3/11/2021 20:15	3/12/2021 9:30	795	0	51,418	0	12	Atlas		50,904	1
	3/31/2021 0:00	3/31/2021 1:30	90	0	13,100	0	6	Atlas		9,301	1
	4/10/2021 13:45	4/10/2021 14:15	30	0	10,941	0	6	Atlas		9,081	1
	5/5/2021 0:45	5/5/2021 2:00	75	0	13,757	0	24	Atlas		10,455	1
	5/26/2021 11:00	5/26/2021 11:00	0	0	186	0	3	Atlas		93	1
	6/3/2021 12:45	6/3/2021 13:45	60	0	49,889	1	1	Atlas		43,902	1
	6/7/2021 4:00	6/7/2021 4:00	0	0	27	0	1	Atlas		11	1
CSO126 Total										365,042	16
CSO127	7/6/2020 17:30	7/6/2020 18:15	45	0	1,591,305	3	1	Atlas		588,783	1
	7/11/2020 20:00	7/12/2020 4:15	495	0	10,135	0	12	Atlas		4,358	1
	7/13/2020 20:30	7/14/2020 10:45	855	Discharge	0					80,120	1
	7/20/2020 14:45	7/20/2020 16:30	105	0	687,706	0	1	Atlas		116,910	1
	7/22/2020 1:15	7/22/2020 3:30	135	0	41,359	1	1	Atlas		13,235	1
	7/22/2020 17:15	7/22/2020 21:45	270	1	7,974	40	3	Cloudburst		10,366	1
	7/23/2020 6:45	7/23/2020 9:45	180	1	23,782	40	3	Cloudburst		30,917	1
	7/23/2020 18:00	7/23/2020 20:00	120	1	673,354	40	3	Cloudburst		875,360	1
	7/30/2020 8:45	7/30/2020 22:15	810	3	1,856,725	502	12	Cloudburst		5,291,667	1
	8/1/2020 17:45	8/1/2020 22:45	300	0	142,261	0	1	Atlas		25,607	1
	8/14/2020 4:45	8/14/2020 9:15	270	1	58,616	63	6	Cloudburst		69,167	1
	8/21/2020 14:45	8/21/2020 19:15	270	1	1,273,272	500	1	Atlas		1,617,056	1
	8/22/2020 14:30	8/22/2020 15:00	30	0	9,085	0	3	Atlas		1,817	1
	8/23/2020 16:45	8/23/2020 17:45	60	0	77,063	9	1	Atlas		48,550	1
	8/28/2020 20:45	8/28/2020 22:45	120	0	16,252	0	48	Atlas		8,776	1
	9/2/2020 4:00	9/2/2020 5:15	75	0	221,490	2	3	Atlas		108,530	1
	9/3/2020 3:00	9/3/2020 14:30	690	1	344,449	292	6	Cloudburst		475,340	1
	10/19/2020 9:00	10/19/2020 11:15	135	1	22,465	28	24	Atlas		32,125	1
	10/19/2020 20:15	10/20/2020 3:15	420	1	54,659	28	24	Atlas		78,163	1
	10/23/2020 19:00	10/23/2020 19:30	30	0	27,583	0	3	Atlas		7,999	1
	10/29/2020 0:00	10/29/2020 21:30	1290	2	74,154	500	24	Cloudburst		182,420	1
	11/15/2020 4:30	11/15/2020 8:00	210	0	68,541	0	6	Atlas		18,506	1
	11/25/2020 6:30	11/25/2020 10:15	225	2	14,011	90	6	Cloudburst		21,997	1
	11/25/2020 19:00	11/25/2020 19:00	0	2	85	90	6	Cloudburst		134	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	12/24/2020 1:30	12/24/2020 2:00	30	0	21,385	0	12	Atlas		5,560	1
	12/30/2020 14:00	12/31/2020 4:45	885	1	56,743	17	12	Atlas		68,091	1
	1/1/2021 5:00	1/1/2021 17:45	765	0	52,817	14	12	Atlas		51,761	1
	1/25/2021 8:30	1/25/2021 20:45	735	1	28,006	74	12	Atlas		38,368	1
	1/30/2021 22:00	1/30/2021 23:15	75	0	37,017	0	6	Atlas		17,768	1
	2/10/2021 17:30	2/10/2021 17:30	0	0	2,718	0	12	Atlas		462	1
	2/28/2021 1:45	3/1/2021 4:30	1605	2	1,896,488	500	24	Cloudburst		4,494,676	1
	3/11/2021 20:00	3/12/2021 5:30	570	1	243,870	13	12	Atlas		260,941	1
	3/15/2021 13:45	3/15/2021 14:30	45	0	122,564	0	3	Atlas		17,159	1
	3/18/2021 1:00	3/18/2021 8:30	450	0	25,086	0	24	Atlas		9,282	1
	3/25/2021 9:30	3/25/2021 11:45	135	0	214,326	2	3	Atlas		90,017	1
	3/30/2021 22:45	3/31/2021 2:00	195	0	62,996	8	6	Cloudburst		46,617	1
	4/7/2021 18:00	4/7/2021 18:45	45	0	63,865	4	1	Atlas		27,462	1
	4/10/2021 11:45	4/10/2021 15:45	240	0	36,049	6	6	Cloudburst		26,316	1
	4/24/2021 15:15	4/24/2021 15:30	15	0	16,941	0	12	Atlas		4,574	1
	4/28/2021 15:15	4/28/2021 16:15	60	1	904,583	18	24	Atlas		1,148,820	1
	4/29/2021 1:15	4/29/2021 14:15	780	1	561,318	18	24	Atlas		712,874	1
	5/3/2021 2:45	5/3/2021 5:00	135	0	247,461	0	12	Atlas		121,256	1
	5/4/2021 7:15	5/4/2021 8:30	75	0	446,405	1	1	Atlas		178,562	1
	5/5/2021 0:00	5/5/2021 2:00	120	0	543,510	1	3	Atlas		271,755	1
	5/9/2021 10:15	5/9/2021 11:15	60	0	111,086	0	3	Atlas		32,215	1
	5/26/2021 10:45	5/26/2021 16:00	315	0	287,161	4	3	Atlas		163,682	1
	6/2/2021 3:15	6/2/2021 3:15	0	0	501	1	24	Cloudburst		346	1
	6/2/2021 11:30	6/2/2021 11:45	15	0	14,233	1	24	Cloudburst		9,821	1
	6/3/2021 8:45	6/3/2021 13:30	285	1	801,391	312	1	Atlas		817,419	1
	6/6/2021 17:00	6/6/2021 17:00	0	0	11,388	0	1	Atlas		1,822	1
	6/7/2021 3:30	6/7/2021 4:45	75	0	130,359	2	1	Atlas		57,358	1
CSO127 Total										18,382,887	51
CSO130	10/20/2020 1:30	10/20/2020 1:30	0	1	19,924	62	24	Cloudburst		22,713	1
	2/28/2021 5:45	2/28/2021 5:45	0	2	6,319	501	24	Cloudburst		11,311	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	973	501	24	Cloudburst		1,741	1
	6/3/2021 12:45	6/3/2021 12:45	0	0	16,984	243	6	Cloudburst		14,946	1
CSO130 Total										50,711	4
CSO131	7/22/2020 1:30	7/22/2020 1:30	0	0	8,544	0	6	Atlas		2,136	1
	7/30/2020 14:00	7/30/2020 20:00	360	2	51,583	502	12	Cloudburst		99,040	1
	8/14/2020 5:45	8/14/2020 6:45	60	0	13,313	261	6	Cloudburst		12,381	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	8/21/2020 18:45	8/21/2020 19:00	15	0	215,230	0	3	Atlas		58,112	1
	9/3/2020 5:15	9/3/2020 5:45	30	1	101,097	447	6	Cloudburst		101,097	1
	10/20/2020 1:45	10/20/2020 1:45	0	1	68,308	62	24	Cloudburst		77,871	1
	10/23/2020 19:15	10/23/2020 19:15	0	0	82,744	0	1	Atlas		14,894	1
	10/29/2020 3:30	10/29/2020 4:15	45	2	26,290	501	24	Cloudburst		53,895	1
	1/1/2021 8:00	1/1/2021 8:00	0	0	44,452	12	6	Cloudburst		28,005	1
	2/28/2021 5:30	2/28/2021 7:30	120	2	74,577	501	24	Cloudburst		133,492	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	19,003	501	24	Cloudburst		34,016	1
	3/11/2021 20:15	3/11/2021 20:15	0	0	24,848	42	12	Atlas		22,363	1
CSO131 Total										637,302	12
CSO132	7/22/2020 1:00	7/22/2020 23:00	1320	0	1,219,175	0	1	Atlas		438,903	1
	7/23/2020 17:15	7/23/2020 23:00	345	1	488,651	6	3	Atlas		522,857	1
	7/30/2020 9:15	7/31/2020 23:00	2265	2	3,286,179	91	12	Atlas		6,572,358	1
	8/14/2020 5:00	8/14/2020 23:00	1080	1	216,548	7	6	Cloudburst		223,044	1
	8/21/2020 18:15	8/21/2020 23:00	285	0	676,430	0	3	Atlas		270,572	1
	9/2/2020 4:30	9/3/2020 23:00	2550	0	4,190,707	0	3	Atlas		1,215,305	1
	10/19/2020 19:45	10/20/2020 23:00	1635	1	908,374	3	24	Cloudburst		1,071,881	1
	10/23/2020 18:45	10/23/2020 23:00	255	0	15,547	0	1	Atlas		2,954	1
	10/29/2020 1:30	10/31/2020 23:00	4170	2	9,554,554	34	24	Atlas		19,300,200	1
	11/25/2020 7:30	11/25/2020 23:00	930	1	4,140	5	6	Cloudburst		4,430	1
	1/1/2021 7:15	1/3/2021 23:00	3825	0	31,668,044	0	6	Atlas		19,950,868	1
	1/25/2021 10:30	1/26/2021 23:00	2190	1	1,923,275	5	12	Cloudburst		2,057,904	1
	2/28/2021 4:15	3/9/2021 23:00	14085	2	131,513,563	21	24	Atlas		232,779,006	1
	3/11/2021 19:45	3/12/2021 23:00	1635	0	80,913	2	12	Cloudburst		73,631	1
	3/18/2021 7:45	3/18/2021 23:00	915	0	11	0	12	Atlas		4	1
	3/25/2021 10:15	3/25/2021 23:00	765	0	20	0	3	Atlas		9	1
	3/30/2021 23:30	3/31/2021 23:00	1410	0	44,915	1	6	Cloudburst		29,644	1
	4/10/2021 13:15	4/10/2021 23:00	585	0	107,695	2	12	Cloudburst		91,541	1
	4/28/2021 15:00	4/29/2021 23:00	1920	1	867,069	3	24	Cloudburst		971,117	1
	5/3/2021 2:45	5/5/2021 23:00	4095	0	8,877	0	12	Atlas		3,107	1
	5/26/2021 10:45	5/26/2021 23:00	735	0	315	0	3	Atlas		151	1
	6/3/2021 12:00	6/3/2021 23:00	660	0	944,386	8	1	Atlas		868,835	1
	6/7/2021 3:45	6/7/2021 23:00	1155	0	20,744	0	1	Atlas		5,601	1
CSO132 Total										286,453,922	23

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
CSO140	7/23/2020 19:30	7/23/2020 19:30	0	0	32,593	1	24	Cloudburst		22,815	1
	7/30/2020 10:15	7/30/2020 21:00	645	2	581,265	500	12	Cloudburst		1,185,780	1
	9/3/2020 5:00	9/3/2020 7:30	150	0	407,959	30	6	Cloudburst		399,800	1
	10/20/2020 1:00	10/20/2020 2:45	105	1	455,134	8	24	Cloudburst		514,301	1
	10/29/2020 2:15	10/29/2020 17:45	930	2	603,126	208	24	Cloudburst		1,218,314	1
	12/31/2020 1:15	12/31/2020 4:45	210	1	25,768	9	12	Cloudburst		27,056	1
	1/1/2021 5:30	1/1/2021 11:45	375	0	1,039,981	3	12	Cloudburst		727,987	1
	1/25/2021 13:15	1/25/2021 14:15	60	1	164,441	21	12	Atlas		177,596	1
	2/28/2021 5:30	2/28/2021 20:45	915	2	552,502	231	24	Cloudburst		1,071,854	1
	6/3/2021 12:30	6/3/2021 12:30	0	0	29,956	38	1	Atlas		26,661	1
CSO140 Total										5,372,164	10
CSO141	7/30/2020 10:15	7/30/2020 10:15	0	2	49	501	12	Cloudburst		97	1
	7/30/2020 19:15	7/30/2020 19:15	0	2	54	501	12	Cloudburst		105	1
	8/14/2020 5:15	8/14/2020 5:30	15	0	29,127	23	6	Cloudburst		24,175	1
	8/23/2020 17:00	8/23/2020 17:30	30	0	2,602	7	1	Atlas		1,067	1
	9/3/2020 5:15	9/3/2020 7:00	105	0	1,645	51	6	Cloudburst		1,448	1
	10/20/2020 1:30	10/20/2020 2:15	45	1	1,622	14	24	Atlas		1,687	1
	10/29/2020 0:30	10/29/2020 3:30	180	2	176	500	24	Cloudburst		352	1
	11/25/2020 9:15	11/25/2020 9:15	0	1	229	80	6	Cloudburst		270	1
	12/20/2020 0:00	12/20/2020 0:30	30	0	633	0	3	Atlas		152	1
	12/30/2020 18:15	12/30/2020 18:30	15	1	25	22	12	Atlas		25	1
	2/28/2021 5:15	2/28/2021 11:45	390	2	4,913	500	24	Cloudburst		9,777	1
	2/28/2021 20:30	2/28/2021 21:15	45	2	5,062	500	24	Cloudburst		10,073	1
	3/11/2021 20:15	3/12/2021 8:15	720	0	3,225	14	12	Atlas		2,806	1
	3/25/2021 10:45	3/25/2021 11:15	30	0	440	2	3	Atlas		154	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	230	1	1	Atlas		62	1
	4/10/2021 18:45	4/10/2021 18:45	0	0	736	3	12	Cloudburst		405	1
	6/3/2021 8:30	6/3/2021 12:15	225	1	89,795	253	1	Atlas		90,693	1
CSO141 Total										143,348	17
CSO142	7/5/2020 18:15	7/5/2020 18:15	0	0	10,783	16	1	Atlas		2,480	1
	7/6/2020 17:30	7/6/2020 17:30	0	0	75,050	0	1	Atlas		4,503	1
	7/30/2020 9:30	7/30/2020 20:15	645	2	80,039	507	24	Cloudburst		180,889	1
	8/14/2020 5:30	8/14/2020 5:30	0	0	1,585	100	6	Cloudburst		967	1
	8/21/2020 18:45	8/21/2020 18:45	0	0	1,524	2	24	Cloudburst		518	1
	8/23/2020 16:45	8/23/2020 17:00	15	0	381,033	0	1	Atlas		34,293	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	9/2/2020 3:45	9/2/2020 4:45	60	0	45,265	46	3	Cloudburst		16,748	1
	9/3/2020 3:00	9/3/2020 5:45	165	0	46,637	502	6	Cloudburst		43,839	1
	10/19/2020 9:15	10/19/2020 9:15	0	0	239	496	24	Cloudburst		229	1
	10/20/2020 1:30	10/20/2020 1:45	15	0	22,678	496	24	Cloudburst		21,771	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	18,007	1	1	Atlas		2,701	1
	10/29/2020 3:15	10/29/2020 3:15	0	2	1,301	505	48	Atlas		2,745	1
	11/25/2020 7:45	11/25/2020 7:45	0	1	2,248	501	6	Cloudburst		2,495	1
	1/1/2021 7:45	1/1/2021 7:45	0	0	4,556	439	12	Cloudburst		3,235	1
	2/28/2021 5:30	2/28/2021 8:15	165	2	17,184	506	24	Cloudburst		35,915	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	4,793	506	24	Cloudburst		10,017	1
	3/11/2021 20:15	3/11/2021 23:30	195	0	12,211	501	12	Cloudburst		11,967	1
	3/25/2021 10:15	3/25/2021 10:30	15	0	14,458	93	1	Atlas		5,205	1
	3/31/2021 0:30	3/31/2021 0:30	0	0	274	500	6	Cloudburst		181	1
	4/28/2021 15:15	4/28/2021 15:30	15	0	31,045	401	24	Cloudburst		27,009	1
	6/3/2021 12:15	6/3/2021 12:30	15	0	36,297	501	6	Cloudburst		27,586	1
CSO142 Total										435,293	21
CSO144	7/23/2020 19:30	7/23/2020 19:30	0	1	78,439	0	3	Atlas		89,420	1
	7/30/2020 9:30	7/30/2020 10:15	45	2	90,010	1	12	Cloudburst		223,224	1
	7/30/2020 19:15	7/30/2020 19:30	15	2	10,871	1	12	Cloudburst		26,961	1
	8/21/2020 18:30	8/21/2020 18:30	0	0	22,809	0	1	Atlas		14,826	1
	9/3/2020 5:30	9/3/2020 5:30	0	1	163	0	6	Atlas		171	1
	10/20/2020 1:30	10/20/2020 1:30	0	1	23,986	0	24	Atlas		31,422	1
	2/28/2021 11:00	2/28/2021 18:15	435	2	184	0	24	Atlas		367	1
CSO144 Total										386,391	7
CSO146	7/30/2020 10:15	7/30/2020 10:15	0	2	882	507	24	Cloudburst		1,993	1
	9/3/2020 3:15	9/3/2020 5:00	105	0	5,859	502	6	Cloudburst		5,507	1
	10/20/2020 1:30	10/20/2020 2:30	60	0	22,922	496	24	Cloudburst		22,005	1
	10/29/2020 3:45	10/29/2020 4:15	30	2	23,125	505	48	Atlas		48,793	1
	1/1/2021 7:45	1/1/2021 8:15	30	0	128,697	439	12	Cloudburst		91,375	1
	2/28/2021 7:45	2/28/2021 8:30	45	2	29,534	506	24	Cloudburst		61,726	1
	6/3/2021 12:30	6/3/2021 12:30	0	0	24,429	501	6	Cloudburst		18,566	1
CSO146 Total										249,965	7
CSO148	7/5/2020 18:00	7/5/2020 18:15	15	0	22,236	3	1	Atlas		8,672	1
	7/6/2020 17:30	7/6/2020 17:30	0	0	127,042	0	1	Atlas		33,031	1
	7/20/2020 14:30	7/20/2020 14:30	0	0	27,228	21	1	Atlas		15,792	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	7/22/2020 17:00	7/22/2020 17:00	0	0	52,436	0	1	Atlas		5,768	1
	7/30/2020 9:30	7/30/2020 20:30	660	2	159,015	501	12	Cloudburst		367,325	1
	8/1/2020 17:45	8/1/2020 17:45	0	0	424	0	6	Atlas		72	1
	8/14/2020 4:45	8/14/2020 5:00	15	1	12,330	16	6	Cloudburst		12,577	1
	8/21/2020 14:30	8/21/2020 18:30	240	0	33,076	2	12	Cloudburst		29,768	1
	8/22/2020 14:15	8/22/2020 14:30	15	0	13,743	2	12	Cloudburst		12,369	1
	9/2/2020 4:30	9/2/2020 4:45	15	0	30,412	1	3	Atlas		12,469	1
	9/3/2020 3:00	9/3/2020 6:00	180	1	70,881	168	6	Cloudburst		90,728	1
	10/12/2020 17:30	10/12/2020 17:30	0	0	91,900	0	1	Atlas		919	1
	10/19/2020 9:00	10/19/2020 9:45	45	1	21,922	8	24	Cloudburst		24,114	1
	10/19/2020 20:00	10/20/2020 2:30	390	1	107,372	8	24	Cloudburst		118,109	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	58,627	0	1	Atlas		8,794	1
	10/29/2020 0:00	10/29/2020 8:45	525	2	33,400	435	12	Cloudburst		76,821	1
	11/15/2020 4:30	11/15/2020 4:30	0	0	27,348	0	6	Atlas		7,931	1
	11/25/2020 7:45	11/25/2020 7:45	0	1	3,290	34	6	Cloudburst		3,948	1
	11/25/2020 18:30	11/25/2020 18:30	0	1	833	34	6	Cloudburst		999	1
	12/30/2020 23:00	12/30/2020 23:00	0	1	797	11	12	Atlas		885	1
	1/1/2021 7:15	1/1/2021 8:30	75	0	69,302	9	12	Cloudburst		63,065	1
	1/25/2021 10:30	1/25/2021 15:15	285	1	57,630	40	12	Atlas		69,732	1
	1/30/2021 22:45	1/30/2021 22:45	0	0	3,044	0	12	Atlas		1,187	1
	2/28/2021 1:45	2/28/2021 11:30	585	3	100,197	500	24	Cloudburst		250,492	1
	2/28/2021 20:30	2/28/2021 21:15	45	3	13,606	500	24	Cloudburst		34,016	1
	3/11/2021 20:00	3/12/2021 0:00	240	1	70,663	16	12	Atlas		77,023	1
	3/15/2021 13:45	3/15/2021 13:45	0	0	5,400	0	3	Atlas		648	1
	3/18/2021 1:00	3/18/2021 8:00	420	0	6,969	0	24	Atlas		2,927	1
	3/25/2021 10:15	3/25/2021 10:30	15	0	28,973	2	1	Atlas		11,879	1
	3/30/2021 23:30	3/31/2021 1:15	105	0	32,810	10	6	Cloudburst		25,920	1
	4/7/2021 18:15	4/7/2021 18:15	0	0	1,215	3	1	Atlas		486	1
	4/10/2021 11:45	4/10/2021 14:00	135	0	9,783	4	6	Cloudburst		6,750	1
	4/28/2021 15:15	4/28/2021 15:30	15	0	35,491	5	24	Cloudburst		33,716	1
	4/29/2021 13:30	4/29/2021 13:30	0	0	1,938	5	24	Cloudburst		1,841	1
	5/3/2021 2:45	5/3/2021 3:00	15	0	15,535	0	12	Atlas		7,612	1
	5/5/2021 0:30	5/5/2021 1:15	45	0	431	1	6	Cloudburst		207	1
	5/9/2021 10:15	5/9/2021 10:15	0	0	1,968	0	3	Atlas		610	1
	5/26/2021 10:45	5/26/2021 11:15	30	0	18,109	3	3	Atlas		9,598	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	6/3/2021 12:15	6/3/2021 12:45	30	1	137,775	476	1	Atlas		150,175	1
	6/7/2021 3:45	6/7/2021 4:00	15	0	48,717	1	1	Atlas		17,538	1
CSO148 Total										1,596,513	40
CSO149	7/30/2020 14:00	7/30/2020 21:30	450	2	2,626,987	507	24	Cloudburst		5,936,990	1
	10/20/2020 1:45	10/20/2020 3:15	90	0	2,069,890	496	24	Cloudburst		1,987,094	1
	10/29/2020 3:45	10/29/2020 10:45	420	2	4,814,643	505	48	Atlas		10,158,896	1
	1/1/2021 8:00	1/1/2021 12:15	255	0	5,090,225	439	12	Cloudburst		3,614,060	1
	2/28/2021 5:45	2/28/2021 22:45	1020	2	5,162,611	506	24	Cloudburst		10,789,857	1
	6/3/2021 12:30	6/3/2021 12:30	0	0	68,583	501	6	Cloudburst		52,123	1
CSO149 Total										32,539,020	6
CSO151	7/5/2020 18:15	7/5/2020 18:45	30	0	86,116	0	1	Atlas		27,557	1
	7/6/2020 17:45	7/6/2020 18:15	30	0	475,289	0	1	Atlas		218,633	1
	7/11/2020 20:15	7/12/2020 4:30	495	0	300,303	0	12	Atlas		120,121	1
	7/20/2020 14:45	7/20/2020 15:30	45	0	259,805	0	1	Atlas		103,922	1
	7/22/2020 1:45	7/22/2020 1:45	0	0	13,800	0	1	Atlas		2,484	1
	7/22/2020 17:30	7/22/2020 17:30	0	0	284,525	0	1	Atlas		22,762	1
	7/23/2020 7:45	7/23/2020 8:30	45	0	69,643	0	24	Atlas		41,786	1
	7/23/2020 18:15	7/23/2020 19:45	90	0	92,537	0	24	Atlas		55,522	1
	7/25/2020 21:15	7/25/2020 21:45	30	0	16,147,900	0	1	Atlas		161,479	1
	7/30/2020 9:15	7/31/2020 6:00	1245	2	2,571,372	0	12	Atlas		5,785,586	1
	8/1/2020 18:00	8/1/2020 22:45	285	0	1,025,617	0	12	Atlas		123,074	1
	8/14/2020 5:00	8/14/2020 9:15	255	0	271,300	0	6	Atlas		249,596	1
	8/21/2020 15:00	8/21/2020 19:15	255	0	405,032	0	12	Atlas		267,321	1
	8/22/2020 14:30	8/22/2020 15:00	30	0	136,247	0	12	Atlas		89,923	1
	8/23/2020 17:15	8/23/2020 17:30	15	0	93,483	0	1	Atlas		43,002	1
	8/28/2020 21:45	8/28/2020 23:15	90	0	131,379	0	24	Atlas		49,924	1
	9/2/2020 4:30	9/2/2020 5:30	60	0	303,687	0	3	Atlas		136,659	1
	9/3/2020 3:15	9/3/2020 9:45	390	1	428,109	0	6	Atlas		492,325	1
	10/19/2020 9:30	10/19/2020 12:00	150	1	225,903	0	24	Atlas		255,270	1
	10/19/2020 20:15	10/20/2020 8:15	720	1	1,223,531	0	24	Atlas		1,382,590	1
	10/23/2020 19:30	10/23/2020 20:00	30	0	242,121	0	3	Atlas		33,897	1
	10/29/2020 0:30	10/30/2020 0:30	1440	2	3,365,384	0	24	Atlas		6,999,999	1
	11/15/2020 4:45	11/15/2020 8:45	240	0	357,769	0	6	Atlas		93,020	1
	11/25/2020 6:45	11/25/2020 10:45	240	1	164,285	0	6	Atlas		216,856	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	11/25/2020 19:00	11/25/2020 19:15	15	1	22,821	0	6	Atlas		30,124	1
	12/24/2020 1:45	12/24/2020 2:15	30	0	106,025	0	12	Atlas		25,446	1
	12/30/2020 15:30	12/31/2020 5:15	825	1	634,701	0	12	Atlas		685,477	1
	1/1/2021 5:15	1/1/2021 20:00	885	0	2,898,742	0	12	Atlas		2,579,880	1
	1/25/2021 9:00	1/25/2021 19:30	630	1	597,375	0	12	Atlas		681,007	1
	1/30/2021 22:45	1/30/2021 23:45	60	0	139,500	0	12	Atlas		57,195	1
	2/10/2021 17:45	2/10/2021 18:45	60	0	131,094	0	24	Atlas		20,975	1
	2/28/2021 2:15	3/1/2021 10:15	1920	2	4,200,524	0	24	Atlas		10,039,252	1
	3/11/2021 20:15	3/12/2021 9:45	810	0	477,304	0	12	Atlas		462,985	1
	3/15/2021 14:00	3/15/2021 15:00	60	0	512,309	0	3	Atlas		56,354	1
	3/17/2021 17:15	3/18/2021 8:45	930	0	302,128	0	24	Atlas		117,830	1
	3/25/2021 10:30	3/25/2021 12:00	90	0	260,992	0	1	Atlas		101,787	1
	3/30/2021 23:45	3/31/2021 2:45	180	0	369,918	0	6	Atlas		270,040	1
	4/7/2021 18:15	4/7/2021 19:00	45	0	154,393	0	1	Atlas		46,318	1
	4/10/2021 12:00	4/10/2021 15:45	225	0	436,295	0	6	Atlas		248,688	1
	4/24/2021 15:30	4/24/2021 15:45	15	0	18,413	0	12	Atlas		4,235	1
	4/28/2021 15:30	4/28/2021 16:30	60	0	203,722	0	24	Atlas		191,499	1
	4/29/2021 1:30	4/29/2021 14:45	795	0	297,628	0	24	Atlas		279,770	1
	5/3/2021 3:00	5/3/2021 5:30	150	0	257,405	0	12	Atlas		105,536	1
	5/4/2021 7:30	5/4/2021 8:45	75	0	182,727	0	24	Atlas		151,663	1
	5/4/2021 22:00	5/5/2021 2:15	255	0	296,917	0	24	Atlas		246,441	1
	5/9/2021 10:30	5/9/2021 11:45	75	0	341,364	0	1	Atlas		85,341	1
	5/26/2021 11:15	5/26/2021 13:30	135	0	387,122	0	3	Atlas		212,917	1
	6/2/2021 11:45	6/2/2021 12:00	15	0	30,458	0	24	Atlas		18,275	1
	6/3/2021 9:00	6/3/2021 13:45	285	0	1,036,321	0	1	Atlas		756,514	1
	6/6/2021 17:00	6/6/2021 17:15	15	0	35,430	0	1	Atlas		11,692	1
	6/7/2021 4:00	6/7/2021 5:00	60	0	675,758	0	1	Atlas		223,000	1
CSO151 Total										34,683,549	51
CSO153	7/6/2020 17:30	7/6/2020 17:45	15	0	374,211	0	1	Atlas		67,358	1
	7/11/2020 19:45	7/12/2020 4:00	495	0	120,390	2	12	Cloudburst		62,603	1
	7/20/2020 14:30	7/20/2020 14:30	0	0	40,575	0	1	Atlas		4,869	1
	7/22/2020 1:15	7/22/2020 1:15	0	0	662,285	0	1	Atlas		86,097	1
	7/23/2020 17:30	7/23/2020 20:00	150	0	545,834	2	24	Cloudburst		322,042	1
	7/30/2020 8:45	7/30/2020 20:15	690	2	563,018	501	12	Cloudburst		1,103,516	1
	7/31/2020 6:45	7/31/2020 8:00	75	2	21,547	501	12	Cloudburst		42,232	1
	8/1/2020 22:30	8/1/2020 23:15	45	0	156,575	0	12	Atlas		18,789	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	8/14/2020 4:45	8/14/2020 10:30	345	0	851,613	23	6	Cloudburst		706,839	1
	8/21/2020 18:45	8/21/2020 20:00	75	0	271,938	0	3	Atlas		70,704	1
	8/23/2020 17:00	8/23/2020 17:45	45	0	538,917	7	1	Atlas		220,956	1
	8/27/2020 19:30	8/27/2020 19:30	0	0	61,500	0	48	Atlas		23,985	1
	8/28/2020 21:30	8/28/2020 23:45	135	0	295,741	0	48	Atlas		115,339	1
	8/31/2020 5:30	8/31/2020 5:30	0	0	54,408	0	1	Atlas		6,529	1
	9/2/2020 3:45	9/2/2020 5:45	120	0	490,421	0	3	Atlas		137,318	1
	9/3/2020 3:00	9/3/2020 7:30	270	0	639,531	51	6	Cloudburst		562,787	1
	9/28/2020 12:45	9/28/2020 12:45	0	0	21,700	0	6	Atlas		3,689	1
	10/19/2020 8:45	10/20/2020 10:45	1560	1	1,180,884	14	24	Atlas		1,228,119	1
	10/23/2020 19:00	10/23/2020 20:30	90	0	515,671	0	1	Atlas		72,194	1
	10/28/2020 23:45	10/30/2020 0:30	1485	2	849,313	500	24	Cloudburst		1,698,625	1
	11/11/2020 2:00	11/11/2020 2:00	0	0	43,730	0	12	Atlas		8,746	1
	11/15/2020 4:30	11/15/2020 8:30	240	0	189,289	0	6	Atlas		53,001	1
	11/25/2020 5:45	11/25/2020 21:00	915	1	438,645	80	6	Cloudburst		517,601	1
	12/20/2020 0:00	12/20/2020 0:30	30	0	10,029	0	3	Atlas		2,407	1
	12/24/2020 1:00	12/24/2020 3:30	150	0	487,165	0	6	Atlas		97,433	1
	12/30/2020 13:30	12/31/2020 0:15	645	1	693,963	22	12	Atlas		700,903	1
	1/1/2021 4:45	1/1/2021 9:00	255	0	884,918	6	12	Cloudburst		584,046	1
	1/25/2021 8:30	1/25/2021 18:45	615	1	735,415	69	12	Atlas		786,894	1
	1/30/2021 21:45	1/30/2021 23:15	90	0	112,066	0	12	Atlas		42,585	1
	2/4/2021 16:30	2/4/2021 16:30	0	0	9,443	0	12	Atlas		2,644	1
	2/28/2021 1:30	2/28/2021 10:45	555	2	370,347	500	24	Cloudburst		736,991	1
	2/28/2021 19:45	2/28/2021 21:15	90	2	138,821	500	24	Cloudburst		276,254	1
	3/11/2021 20:00	3/12/2021 9:00	780	0	604,720	14	12	Atlas		526,106	1
	3/15/2021 13:30	3/15/2021 14:00	30	0	367,050	0	3	Atlas		44,046	1
	3/18/2021 0:45	3/18/2021 8:00	435	0	234,765	0	24	Atlas		100,949	1
	3/25/2021 10:00	3/25/2021 11:30	90	0	385,171	2	3	Atlas		134,810	1
	3/30/2021 22:30	3/31/2021 1:45	195	0	480,461	13	6	Cloudburst		317,104	1
	4/7/2021 17:45	4/7/2021 18:15	30	0	612,137	1	1	Atlas		165,277	1
	4/10/2021 11:45	4/10/2021 19:00	435	0	522,380	3	12	Cloudburst		287,309	1
	4/24/2021 15:15	4/24/2021 15:15	0	0	6,748	0	12	Atlas		1,552	1
	4/28/2021 15:15	4/28/2021 15:45	30	0	257,585	4	24	Cloudburst		188,037	1
	4/29/2021 1:15	4/29/2021 14:00	765	0	229,134	4	24	Cloudburst		167,268	1
	5/3/2021 2:45	5/3/2021 4:45	120	0	272,785	0	12	Atlas		73,652	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	5/4/2021 7:00	5/4/2021 8:00	60	0	124,746	2	24	Cloudburst		78,590	1
	5/4/2021 23:45	5/5/2021 1:15	90	0	271,483	2	24	Cloudburst		171,034	1
	5/9/2021 10:15	5/9/2021 11:00	45	0	169,400	0	3	Atlas		38,962	1
	5/26/2021 10:45	5/26/2021 12:45	120	0	185,151	10	3	Atlas		105,536	1
	5/28/2021 0:30	5/28/2021 1:00	30	0	53,513	0	12	Atlas		17,124	1
	6/1/2021 13:45	6/1/2021 13:45	0	0	1,829	0	24	Atlas		951	1
	6/2/2021 11:30	6/2/2021 12:15	45	0	21,485	0	24	Atlas		11,172	1
	6/3/2021 8:45	6/3/2021 13:00	255	1	374,545	253	1	Atlas		378,290	1
	6/6/2021 16:45	6/6/2021 17:15	30	0	56,500	0	1	Atlas		15,255	1
	6/7/2021 3:30	6/7/2021 4:30	60	0	249,477	0	3	Atlas		64,864	1
CSO153 Total										13,251,983	53
CSO154	7/30/2020 19:00	7/30/2020 19:45	45	2	89,805	91	12	Atlas		179,610	1
	1/1/2021 7:45	1/1/2021 7:45	0	0	2,792	0	6	Atlas		1,759	1
	1/25/2021 18:15	1/25/2021 18:30	15	1	2,237	5	12	Cloudburst		2,394	1
	2/28/2021 7:00	2/28/2021 8:15	75	2	26,733	21	24	Atlas		47,317	1
	2/28/2021 20:15	2/28/2021 21:00	45	2	37,127	21	24	Atlas		65,714	1
	6/3/2021 12:00	6/3/2021 12:15	15	0	1,380	8	1	Atlas		1,270	1
CSO154 Total										298,064	6
CSO160	7/30/2020 9:30	7/30/2020 9:30	0	3	1,821	501	12	Cloudburst		4,844	1
	8/23/2020 17:15	8/23/2020 17:15	0	0	129,455	0	3	Atlas		25,891	1
	6/3/2021 12:30	6/3/2021 12:30	0	0	35,189	8	6	Cloudburst		26,392	1
CSO160 Total										57,127	3
CSO161	7/7/2020 22:15	7/7/2020 22:30	15	0	61,017	0	1	Atlas		14,644	1
	7/23/2020 17:30	7/23/2020 17:30	0	0	283	0	24	Atlas		167	1
	7/30/2020 9:30	7/30/2020 9:30	0	3	3,880	501	12	Cloudburst		10,322	1
	7/30/2020 19:30	7/30/2020 19:30	0	3	390	501	12	Cloudburst		1,038	1
	8/14/2020 5:30	8/14/2020 5:30	0	0	5,087	0	6	Atlas		2,696	1
	8/23/2020 17:00	8/23/2020 17:15	15	0	217,480	0	3	Atlas		43,496	1
	9/2/2020 3:45	9/2/2020 3:45	0	0	116	0	3	Atlas		43	1
	9/3/2020 5:00	9/3/2020 5:00	0	0	351	18	6	Cloudburst		316	1
	10/20/2020 1:15	10/20/2020 1:30	15	1	292	6	24	Cloudburst		315	1
	2/28/2021 4:45	2/28/2021 5:30	45	2	2,443	382	24	Cloudburst		5,252	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	1,292	382	24	Cloudburst		2,778	1
	5/4/2021 23:45	5/4/2021 23:45	0	0	3,151	2	24	Cloudburst		2,300	1
	6/3/2021 8:30	6/3/2021 12:30	240	0	42,932	8	6	Cloudburst		32,199	1
	6/6/2021 16:30	6/6/2021 16:30	0	0	19,131	0	3	Atlas		3,061	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	6/29/2021 17:15	6/29/2021 17:30	15	0	22,535	0	1	Atlas		5,859	1
CSO161 Total										124,486	15
CSO166	7/6/2020 17:45	7/6/2020 18:15	30	0	276,346	3	1	Atlas		102,248	1
	7/22/2020 1:45	7/22/2020 2:00	15	0	295,941	1	1	Atlas		94,701	1
	7/22/2020 17:30	7/22/2020 17:30	0	1	6,451	40	3	Cloudburst		8,386	1
	7/23/2020 17:45	7/23/2020 21:00	195	1	2,490,285	40	3	Cloudburst		3,237,370	1
	7/30/2020 9:45	7/31/2020 4:15	1110	3	2,924,877	502	12	Cloudburst		8,335,900	1
	8/1/2020 18:00	8/1/2020 23:15	315	0	2,012,783	0	1	Atlas		362,301	1
	8/14/2020 5:15	8/14/2020 9:45	270	1	253,886	63	6	Cloudburst		299,585	1
	8/21/2020 18:15	8/21/2020 19:30	75	1	531,672	500	1	Atlas		675,224	1
	8/22/2020 14:30	8/22/2020 14:30	0	0	121,545	0	3	Atlas		24,309	1
	8/28/2020 23:00	8/28/2020 23:15	15	0	334,617	0	48	Atlas		180,693	1
	9/2/2020 4:15	9/2/2020 5:30	75	0	773,024	2	3	Atlas		378,782	1
	9/3/2020 3:15	9/3/2020 13:45	630	1	1,635,617	292	6	Cloudburst		2,257,152	1
	10/19/2020 9:15	10/19/2020 10:30	75	1	269,573	28	24	Atlas		385,489	1
	10/19/2020 20:15	10/20/2020 4:00	465	1	1,092,303	28	24	Atlas		1,561,994	1
	10/23/2020 19:15	10/23/2020 19:45	30	0	429,741	0	3	Atlas		124,625	1
	10/29/2020 0:30	10/29/2020 22:45	1335	2	1,509,141	500	24	Cloudburst		3,712,488	1
	11/5/2020 23:45	11/6/2020 0:00	15	Discharge	0					24,784	1
	11/15/2020 4:45	11/15/2020 8:15	210	0	105,367	0	6	Atlas		28,449	1
	11/25/2020 6:45	11/25/2020 8:30	105	2	67,459	90	6	Cloudburst		105,910	1
	11/25/2020 18:45	11/25/2020 19:15	30	2	70,604	90	6	Cloudburst		110,849	1
	12/30/2020 20:45	12/31/2020 5:15	510	1	904,863	17	12	Atlas		1,085,836	1
	1/1/2021 5:15	1/1/2021 17:30	735	0	2,256,029	14	12	Atlas		2,210,908	1
	1/25/2021 10:30	1/25/2021 21:15	645	1	1,717,297	74	12	Atlas		2,352,697	1
	1/30/2021 23:00	1/30/2021 23:45	45	0	156,050	0	6	Atlas		74,904	1
	2/28/2021 2:15	3/2/2021 0:15	2760	2	10,896,273	500	24	Cloudburst		25,824,167	1
	3/11/2021 20:15	3/12/2021 9:45	810	1	3,080,663	13	12	Atlas		3,296,309	1
	3/15/2021 14:00	3/15/2021 15:00	60	0	1,457,829	0	3	Atlas		204,096	1
	3/18/2021 1:30	3/18/2021 8:45	435	0	187,073	0	24	Atlas		69,217	1
	3/25/2021 10:30	3/25/2021 12:00	90	0	1,215,283	2	3	Atlas		510,419	1
	3/30/2021 23:45	3/31/2021 3:00	195	0	2,302,012	8	6	Cloudburst		1,703,489	1
	4/7/2021 18:30	4/7/2021 19:15	45	0	625,956	4	1	Atlas		269,161	1
	4/10/2021 12:30	4/10/2021 15:15	165	0	467,388	6	6	Cloudburst		341,193	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	4/28/2021 15:15	4/29/2021 15:30	1455	1	3,755,712	18	24	Atlas		4,769,754	1
	5/3/2021 3:15	5/3/2021 3:45	30	0	250,424	0	12	Atlas		122,708	1
	5/4/2021 7:30	5/4/2021 8:45	75	0	1,659,130	1	1	Atlas		663,652	1
	5/4/2021 23:15	5/5/2021 2:30	195	0	1,824,844	1	3	Atlas		912,422	1
	5/9/2021 10:45	5/9/2021 11:30	45	0	663,800	0	3	Atlas		192,502	1
	5/26/2021 11:00	5/26/2021 12:30	90	0	384,788	4	3	Atlas		219,329	1
	6/3/2021 12:30	6/3/2021 16:15	225	1	300,043	312	1	Atlas		306,044	1
	6/7/2021 4:00	6/7/2021 5:00	60	0	537,911	2	1	Atlas		236,681	1
CSO166 Total										67,376,727	40
CSO167	7/22/2020 1:00	7/22/2020 23:00	1320	0	19,825	0	1	Atlas		7,137	1
	7/23/2020 17:15	7/23/2020 23:00	345	1	7,946	6	3	Atlas		8,502	1
	7/30/2020 9:15	7/31/2020 23:00	2265	2	53,434	91	12	Atlas		106,868	1
	8/14/2020 5:00	8/14/2020 23:00	1080	1	3,520	7	6	Cloudburst		3,626	1
	8/21/2020 18:15	8/21/2020 23:00	285	0	11,000	0	3	Atlas		4,400	1
	9/2/2020 4:30	9/3/2020 23:00	2550	0	68,141	0	3	Atlas		19,761	1
	10/19/2020 19:45	10/20/2020 23:00	1635	1	14,770	3	24	Cloudburst		17,429	1
	10/23/2020 18:45	10/23/2020 23:00	255	0	253	0	1	Atlas		48	1
	10/29/2020 1:30	10/31/2020 23:00	4170	2	155,358	34	24	Atlas		313,824	1
	11/25/2020 7:30	11/25/2020 23:00	930	1	67	5	6	Cloudburst		72	1
	1/1/2021 7:15	1/3/2021 23:00	3825	0	514,927	0	6	Atlas		324,404	1
	1/25/2021 10:30	1/26/2021 23:00	2190	1	31,273	5	12	Cloudburst		33,462	1
	2/28/2021 4:15	3/9/2021 23:00	14085	2	2,138,432	21	24	Atlas		3,785,025	1
	3/11/2021 19:45	3/12/2021 23:00	1635	0	1,315	2	12	Cloudburst		1,197	1
	3/30/2021 23:45	3/31/2021 23:00	1395	0	730	1	6	Cloudburst		482	1
	4/10/2021 13:15	4/10/2021 23:00	585	0	1,752	2	12	Cloudburst		1,489	1
	4/28/2021 15:00	4/29/2021 23:00	1920	1	14,099	3	24	Cloudburst		15,791	1
	5/26/2021 10:45	5/26/2021 23:00	735	0	6	0	3	Atlas		3	1
	6/3/2021 12:00	6/3/2021 23:00	660	0	15,355	8	1	Atlas		14,127	1
	6/7/2021 3:45	6/7/2021 23:00	1155	0	337	0	1	Atlas		91	1
CSO167 Total										4,657,738	20
CSO174	7/5/2020 18:00	7/5/2020 18:30	30	0	3,218,291	16	1	Atlas		740,207	1
	7/11/2020 20:30	7/11/2020 20:30	0	0	6,115	31	12	Atlas		2,813	1
	7/20/2020 14:45	7/20/2020 15:00	15	0	243,402	501	1	Atlas		133,871	1
	7/23/2020 19:30	7/23/2020 20:00	30	0	498,727	93	1	Atlas		279,287	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	7/30/2020 9:30	7/30/2020 20:45	675	2	1,416,773	507	24	Cloudburst		3,201,907	1
	8/1/2020 22:15	8/1/2020 22:15	0	0	485,600	0	12	Atlas		43,704	1
	8/14/2020 4:45	8/14/2020 4:45	0	0	21,910	100	6	Cloudburst		13,365	1
	8/21/2020 18:45	8/21/2020 18:45	0	0	3,606	2	24	Cloudburst		1,226	1
	8/22/2020 14:30	8/22/2020 14:45	15	0	214,482	2	24	Cloudburst		72,924	1
	9/2/2020 4:45	9/2/2020 5:00	15	0	280,070	46	3	Cloudburst		103,626	1
	9/3/2020 3:00	9/3/2020 7:00	240	0	1,188,995	502	6	Cloudburst		1,117,655	1
	10/19/2020 9:15	10/19/2020 10:00	45	0	204,893	496	24	Cloudburst		196,697	1
	10/19/2020 20:00	10/20/2020 2:30	390	0	713,249	496	24	Cloudburst		684,719	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	145,253	1	1	Atlas		21,788	1
	10/29/2020 0:30	10/29/2020 9:00	510	2	350,382	505	48	Atlas		739,306	1
	11/15/2020 4:45	11/15/2020 4:45	0	0	47,275	3	6	Cloudburst		11,346	1
	11/25/2020 7:45	11/25/2020 8:00	15	1	52,451	501	6	Cloudburst		58,221	1
	11/25/2020 18:30	11/25/2020 18:30	0	1	11,791	501	6	Cloudburst		13,088	1
	1/25/2021 10:30	1/25/2021 14:15	225	1	640,230	502	12	Cloudburst		691,448	1
	2/28/2021 4:30	2/28/2021 11:45	435	2	1,430,354	506	24	Cloudburst		2,989,439	1
	2/28/2021 20:30	2/28/2021 21:45	75	2	314,009	506	24	Cloudburst		656,278	1
	3/11/2021 20:00	3/12/2021 0:00	240	0	495,898	501	12	Cloudburst		485,980	1
	3/18/2021 7:45	3/18/2021 8:00	15	0	289,456	11	24	Cloudburst		130,255	1
	3/25/2021 10:15	3/25/2021 10:45	30	0	488,075	93	1	Atlas		175,707	1
	3/30/2021 23:45	3/31/2021 1:30	105	0	369,689	500	6	Cloudburst		243,995	1
	4/7/2021 17:45	4/7/2021 18:15	30	0	160,289	371	1	Atlas		56,101	1
	4/28/2021 15:15	4/28/2021 15:45	30	0	158,374	401	24	Cloudburst		137,785	1
	4/29/2021 2:15	4/29/2021 2:15	0	0	81,886	401	24	Cloudburst		71,241	1
	4/29/2021 13:45	4/29/2021 13:45	0	0	19,414	401	24	Cloudburst		16,890	1
	5/3/2021 2:45	5/3/2021 3:00	15	0	160,454	3	12	Cloudburst		44,927	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	25,687	35	1	Atlas		7,963	1
	5/5/2021 0:30	5/5/2021 0:30	0	0	126,855	26	3	Cloudburst		48,205	1
	5/9/2021 10:15	5/9/2021 10:30	15	0	75,893	3	1	Atlas		20,491	1
	5/26/2021 10:45	5/26/2021 11:15	30	0	261,987	389	3	Cloudburst		141,473	1
	6/3/2021 8:45	6/3/2021 12:45	240	0	2,572,149	501	6	Cloudburst		1,954,833	1
	6/6/2021 16:30	6/6/2021 16:45	15	0	1,018,885	9	1	Atlas		264,910	1
	6/7/2021 3:45	6/7/2021 4:00	15	0	408,464	16	1	Atlas		102,116	1
CSO174 Total										15,675,787	37
CSO180	7/20/2020 14:15	7/20/2020 14:30	15	0	78,115	501	1	Atlas		42,963	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	7/23/2020 19:15	7/23/2020 19:15	0	0	24,020	93	1	Atlas		13,451	1
	7/30/2020 8:30	7/30/2020 20:15	705	2	382,423	507	24	Cloudburst		864,275	1
	9/3/2020 5:15	9/3/2020 5:15	0	0	110,803	502	6	Cloudburst		104,155	1
	10/20/2020 1:15	10/20/2020 1:15	0	0	50,553	496	24	Cloudburst		48,531	1
	10/29/2020 0:30	10/29/2020 4:00	210	2	170,691	505	48	Atlas		360,157	1
	3/11/2021 20:15	3/11/2021 23:30	195	0	94,137	501	12	Cloudburst		92,254	1
	3/30/2021 23:45	3/31/2021 1:15	90	0	89,564	500	6	Cloudburst		59,112	1
	4/7/2021 18:00	4/7/2021 18:15	15	0	50,611	371	1	Atlas		17,714	1
	4/10/2021 12:15	4/10/2021 12:15	0	0	2,649	18	12	Atlas		1,086	1
	4/28/2021 15:15	4/28/2021 15:45	30	0	60,379	401	24	Cloudburst		52,530	1
	4/29/2021 1:15	4/29/2021 2:15	60	0	58,983	401	24	Cloudburst		51,315	1
	5/3/2021 3:00	5/3/2021 3:00	0	0	31,529	3	12	Cloudburst		8,828	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	50,190	35	1	Atlas		15,559	1
	5/5/2021 0:00	5/5/2021 0:30	30	0	18,063	26	3	Cloudburst		6,864	1
	5/9/2021 10:15	5/9/2021 10:15	0	0	12,963	3	1	Atlas		3,500	1
	5/26/2021 10:45	5/26/2021 11:15	30	0	41,798	389	3	Cloudburst		22,571	1
	5/28/2021 0:30	5/28/2021 0:30	0	0	437	0	24	Atlas		83	1
	6/3/2021 8:45	6/3/2021 12:45	240	0	238,405	501	6	Cloudburst		181,188	1
	6/6/2021 16:30	6/6/2021 16:45	15	0	294,485	9	1	Atlas		76,566	1
	6/7/2021 3:30	6/7/2021 4:00	30	0	20,080	16	1	Atlas		5,020	1
CSO180 Total										2,027,722	21
CSO181	7/30/2020 9:15	7/30/2020 9:15	0	2	59,031	347	12	Cloudburst		144,035	1
	7/30/2020 19:15	7/30/2020 19:15	0	2	24,046	347	12	Cloudburst		58,673	1
	8/23/2020 16:45	8/23/2020 17:00	15	0	5,242,560	0	1	Atlas		786,384	1
	6/3/2021 12:15	6/3/2021 12:15	0	1	612,180	9	6	Cloudburst		636,667	1
CSO181 Total										1,625,759	4
CSO182	4/10/2021 12:00	4/10/2021 14:30	150	0	420,352	0	6	Atlas		176,548	1
	4/20/2021 23:45	4/21/2021 1:15	90	0	154,050	0	6	Atlas		24,648	1
	4/24/2021 14:45	4/24/2021 15:45	60	0	43,135	0	12	Atlas		9,921	1
	4/28/2021 15:30	4/28/2021 16:30	60	1	7,702	0	24	Atlas		8,164	1
	4/29/2021 1:30	4/29/2021 14:45	795	1	17,048	0	24	Atlas		18,071	1
	5/3/2021 3:00	5/3/2021 5:30	150	0	41,115	0	12	Atlas		13,568	1
	5/4/2021 7:15	5/4/2021 8:45	90	0	30,400	0	1	Atlas		8,208	1
	5/4/2021 21:45	5/5/2021 2:15	270	0	26,029	0	6	Atlas		11,713	1
	5/9/2021 10:30	5/9/2021 11:45	75	0	21,063	0	1	Atlas		5,055	1
	5/26/2021 11:00	5/26/2021 13:30	150	0	57,854	0	3	Atlas		31,241	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	5/28/2021 0:45	5/28/2021 1:00	15	0	7,935	0	1	Atlas		2,698	1
	6/2/2021 3:15	6/2/2021 14:45	690	0	29,955	0	24	Atlas		15,876	1
	6/3/2021 8:45	6/3/2021 14:00	315	0	962,692	0	6	Atlas		577,615	1
	6/6/2021 6:45	6/6/2021 6:45	0	0	897	0	1	Atlas		323	1
	6/6/2021 16:30	6/6/2021 17:30	60	0	967,975	0	1	Atlas		348,471	1
	6/7/2021 3:30	6/7/2021 5:00	90	0	799,547	0	1	Atlas		239,864	1
	6/8/2021 15:15	6/8/2021 15:15	0	0	985	0	24	Atlas		256	1
CSO182 Total										1,492,240	17
CSO183	7/5/2020 17:45	7/5/2020 18:00	15	0	35,555	18	1	Atlas		26,311	1
	9/3/2020 5:45	9/3/2020 5:45	0	1	29	12	6	Cloudburst		32	1
	10/20/2020 1:30	10/20/2020 1:30	0	0	1,141	1	24	Cloudburst		1,095	1
	12/20/2020 1:00	12/20/2020 1:00	0	0	1,112	0	1	Atlas		189	1
	2/6/2021 23:15	2/6/2021 23:15	0	0	2,167	0	3	Atlas		65	1
	2/28/2021 4:30	2/28/2021 6:00	90	2	8,110	60	24	Cloudburst		17,436	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	916	60	24	Cloudburst		1,970	1
	4/24/2021 10:00	4/24/2021 10:00	0	0	204	0	12	Atlas		49	1
	6/3/2021 12:15	6/3/2021 12:30	15	0	31,011	2	6	Cloudburst		22,638	1
	6/6/2021 16:30	6/6/2021 16:30	0	0	6,163	0	1	Atlas		2,835	1
CSO183 Total										72,620	10
CSO184	7/5/2020 17:45	7/5/2020 18:15	30	0	313,462	18	1	Atlas		231,962	1
	7/23/2020 19:45	7/23/2020 19:45	0	1	21,389	3	1	Atlas		21,389	1
	7/30/2020 10:15	7/30/2020 20:15	600	2	114,251	311	12	Cloudburst		269,633	1
	9/3/2020 5:00	9/3/2020 5:45	45	1	12,076	12	6	Cloudburst		13,163	1
	10/20/2020 0:45	10/20/2020 1:45	60	0	2,917	1	24	Cloudburst		2,800	1
	10/29/2020 3:15	10/29/2020 3:15	0	2	73	42	24	Atlas		155	1
	1/1/2021 7:45	1/1/2021 7:45	0	0	8,615	1	12	Cloudburst		6,461	1
	1/25/2021 10:45	1/25/2021 10:45	0	1	473	6	12	Cloudburst		534	1
	2/28/2021 5:30	2/28/2021 5:45	15	2	59,484	60	24	Cloudburst		127,891	1
	3/11/2021 20:15	3/11/2021 20:15	0	1	3,008	4	12	Cloudburst		3,219	1
	3/25/2021 10:30	3/25/2021 10:30	0	0	17,708	0	1	Atlas		7,083	1
	3/31/2021 0:30	3/31/2021 0:30	0	0	1,822	2	6	Cloudburst		1,348	1
	6/3/2021 12:15	6/3/2021 12:30	15	0	460,001	2	6	Cloudburst		335,801	1
	6/6/2021 16:30	6/6/2021 16:30	0	0	39,020	0	1	Atlas		17,949	1
CSO184 Total										1,039,388	14
CSO185	7/11/2020 20:15	7/11/2020 20:15	0	0	3,002	0	12	Atlas		1,411	1
	7/20/2020 14:30	7/20/2020 15:00	30	2	4,373	501	1	Atlas		7,478	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	7/22/2020 17:00	7/22/2020 17:00	0	1	1,180	3	1	Atlas		1,180	1
	7/23/2020 19:30	7/23/2020 20:00	30	1	91,629	3	1	Atlas		91,629	1
	7/30/2020 10:15	7/30/2020 20:30	615	2	420,212	311	12	Cloudburst		991,701	1
	8/1/2020 22:15	8/1/2020 22:15	0	0	39,671	0	6	Atlas		5,554	1
	8/14/2020 4:30	8/14/2020 4:45	15	0	2,066	2	24	Cloudburst		2,025	1
	8/21/2020 18:30	8/21/2020 18:30	0	0	2,724	0	24	Atlas		1,362	1
	8/22/2020 14:30	8/22/2020 14:30	0	0	4,948	0	24	Atlas		2,474	1
	9/2/2020 4:45	9/2/2020 4:45	0	0	13,475	0	3	Atlas		5,929	1
	9/3/2020 3:00	9/3/2020 6:00	180	1	93,345	12	6	Cloudburst		101,746	1
	10/19/2020 9:15	10/19/2020 9:45	30	0	10,998	1	24	Cloudburst		10,558	1
	10/20/2020 0:45	10/20/2020 1:15	30	0	23,525	1	24	Cloudburst		22,584	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	9,378	0	1	Atlas		1,688	1
	10/29/2020 0:30	10/29/2020 4:00	210	2	26,956	42	24	Atlas		57,416	1
	11/15/2020 4:30	11/15/2020 4:30	0	0	2,407	0	6	Atlas		698	1
	11/25/2020 7:45	11/25/2020 7:45	0	1	3,040	5	6	Cloudburst		3,861	1
	11/25/2020 18:30	11/25/2020 18:30	0	1	3,044	5	6	Cloudburst		3,866	1
	1/1/2021 8:00	1/1/2021 8:30	30	0	6,603	1	12	Cloudburst		4,952	1
	1/25/2021 10:45	1/25/2021 14:00	195	1	45,994	6	12	Cloudburst		51,973	1
	2/28/2021 4:30	2/28/2021 11:30	420	2	287,855	60	24	Cloudburst		618,888	1
	2/28/2021 20:30	2/28/2021 21:30	60	2	114,320	60	24	Cloudburst		245,787	1
	3/11/2021 20:15	3/12/2021 0:00	225	1	41,078	4	12	Cloudburst		43,953	1
	3/18/2021 1:00	3/18/2021 8:00	420	0	14,587	0	24	Atlas		7,877	1
	3/25/2021 10:15	3/25/2021 10:30	15	0	85,705	0	1	Atlas		34,282	1
	3/30/2021 23:45	3/31/2021 1:15	90	0	37,361	2	6	Cloudburst		27,647	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	42	0	1	Atlas		16	1
	4/28/2021 15:30	4/28/2021 15:30	0	0	6,700	1	24	Cloudburst		6,298	1
	4/29/2021 2:15	4/29/2021 2:15	0	0	18,323	1	24	Cloudburst		17,224	1
	4/29/2021 13:45	4/29/2021 13:45	0	0	105	1	24	Cloudburst		99	1
	5/3/2021 2:45	5/3/2021 3:00	15	0	12,739	0	12	Atlas		4,586	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	8,631	0	1	Atlas		2,503	1
	5/5/2021 0:30	5/5/2021 0:30	0	0	6,391	0	6	Atlas		3,451	1
	5/26/2021 11:00	5/26/2021 11:15	15	0	10,372	0	3	Atlas		5,601	1
	6/3/2021 12:15	6/3/2021 12:45	30	0	597,684	2	6	Cloudburst		436,309	1
	6/6/2021 16:30	6/6/2021 16:45	15	0	244,835	0	1	Atlas		112,624	1
	6/7/2021 3:45	6/7/2021 4:00	15	0	30,045	0	1	Atlas		9,915	1
CSO185 Total										2,947,145	37

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
CSO187	7/30/2020 13:30	7/30/2020 19:00	330	2	24,147	507	24	Cloudburst		54,573	1
	9/3/2020 5:00	9/3/2020 5:00	0	0	10,659	502	6	Cloudburst		10,019	1
	10/20/2020 1:00	10/20/2020 1:00	0	0	2,167	496	24	Cloudburst		2,080	1
	2/28/2021 5:15	2/28/2021 5:15	0	2	13,888	506	24	Cloudburst		29,026	1
	6/6/2021 16:15	6/6/2021 16:15	0	0	3,592	9	1	Atlas		934	1
CSO187 Total										96,632	5
CSO188	7/30/2020 19:15	7/30/2020 19:30	15	2	8,649	507	24	Cloudburst		19,547	1
	9/3/2020 5:15	9/3/2020 5:15	0	0	4	502	6	Cloudburst		4	1
	2/28/2021 5:45	2/28/2021 5:45	0	2	717	506	24	Cloudburst		1,499	1
	6/3/2021 12:15	6/3/2021 12:30	15	0	28,261	501	6	Cloudburst		21,478	1
CSO188 Total										42,528	4
CSO189	8/14/2020 4:30	8/14/2020 7:30	180	1	6,876,291	30	6	Cloudburst		9,558,045	1
	10/29/2020 2:45	10/29/2020 11:00	495	3	7,702,386	500	24	Cloudburst		26,188,114	1
	2/28/2021 7:00	3/1/2021 4:15	1275	3	99,202,656	223	24	Cloudburst		255,942,853	1
CSO189 Total										291,689,012	3
CSO190	7/5/2020 18:00	7/5/2020 18:15	15	0	121,321	0	1	Atlas		16,985	1
	7/23/2020 17:15	7/23/2020 19:00	105	0	5,569	0	24	Atlas		3,230	1
	7/30/2020 8:30	7/30/2020 20:15	705	2	384,810	501	12	Cloudburst		923,545	1
	8/1/2020 16:00	8/1/2020 16:00	0	0	4,183	0	12	Atlas		753	1
	8/14/2020 5:30	8/14/2020 7:00	90	1	243,712	34	6	Cloudburst		270,520	1
	8/22/2020 14:15	8/22/2020 14:15	0	0	30,184	0	1	Atlas		5,735	1
	9/3/2020 4:45	9/3/2020 7:00	135	1	326,440	405	3	Cloudburst		457,016	1
	10/20/2020 0:45	10/20/2020 2:00	75	1	234,639	14	24	Atlas		297,991	1
	10/29/2020 1:30	10/29/2020 7:15	345	3	71,211	501	24	Cloudburst		205,799	1
	1/1/2021 7:30	1/1/2021 7:45	15	0	1,551	5	12	Cloudburst		1,256	1
	1/25/2021 10:45	1/25/2021 18:30	465	1	5,680	48	12	Atlas		7,214	1
	2/28/2021 4:30	2/28/2021 10:45	375	3	119,656	500	24	Cloudburst		306,319	1
	2/28/2021 20:15	2/28/2021 21:00	45	3	14,362	500	24	Cloudburst		36,766	1
	3/11/2021 20:00	3/11/2021 23:30	210	1	10,645	12	12	Atlas		11,497	1
	3/25/2021 10:15	3/25/2021 10:30	15	0	160,414	0	3	Atlas		33,687	1
	3/31/2021 1:00	3/31/2021 1:15	15	0	1,002	13	6	Cloudburst		822	1
	4/7/2021 17:30	4/7/2021 18:00	30	0	149,843	12	1	Atlas		76,420	1
	4/28/2021 15:15	4/28/2021 15:30	15	2	57,778	429	1	Atlas		102,267	1
	4/29/2021 13:15	4/29/2021 13:15	0	2	15	429	1	Atlas		27	1
	5/4/2021 7:00	5/4/2021 7:15	15	0	47,895	2	24	Cloudburst		36,879	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	5/26/2021 10:45	5/26/2021 11:00	15	0	1,439	9	3	Atlas		1,007	1
	6/3/2021 8:30	6/3/2021 12:30	240	0	160,932	12	6	Cloudburst		135,183	1
	6/29/2021 17:30	6/29/2021 17:45	15	0	83,822	0	1	Atlas		19,279	1
CSO190 Total										2,950,197	23
CSO191	7/1/2020 1:30	7/1/2020 8:00	390	0	6,400	0	1	Atlas		64	1
	7/1/2020 20:00	7/1/2020 23:15	195	0	151	0	1	Atlas		59	1
	7/5/2020 17:15	7/5/2020 21:45	270	0	3,257	0	1	Atlas		228	1
	7/8/2020 8:15	7/8/2020 9:00	45	0	1,233	0	3	Atlas		37	1
	7/12/2020 10:30	7/12/2020 13:45	195	1	85	1	1	Atlas		87	1
	7/23/2020 0:45	7/23/2020 3:45	180	0	18	0	6	Atlas		6	1
	7/23/2020 15:00	7/23/2020 20:30	330	0	800	0	6	Atlas		272	1
	7/30/2020 10:00	7/31/2020 11:45	1545	3	54,840	32	12	Atlas		142,036	1
	8/13/2020 14:00	8/13/2020 18:30	270	1	109	0	6	Atlas		117	1
	8/14/2020 6:15	8/14/2020 19:45	810	1	73,839	0	6	Atlas		79,008	1
	8/22/2020 14:15	8/22/2020 22:30	495	0	881,282	0	1	Atlas		334,887	1
	8/28/2020 22:45	8/28/2020 23:30	45	0	38	0	3	Atlas		19	1
	9/2/2020 5:45	9/2/2020 8:15	150	0	159	0	3	Atlas		54	1
	9/3/2020 3:30	9/3/2020 19:30	960	1	1,013,223	4	6	Cloudburst		1,307,058	1
	10/20/2020 0:15	10/20/2020 2:30	135	1	657,325	0	24	Atlas		801,937	1
	12/31/2020 0:15	12/31/2020 14:15	840	1	322,130	2	12	Cloudburst		479,973	1
	1/1/2021 7:30	1/4/2021 11:45	4575	0	2,209,700	0	12	Atlas		2,121,312	1
	1/25/2021 13:45	2/1/2021 8:00	9735	2	762,906	5	12	Cloudburst		1,205,391	1
	2/28/2021 5:15	3/3/2021 9:30	4575	3	4,417,772	35	24	Atlas		12,811,540	1
	3/31/2021 0:45	3/31/2021 4:00	195	0	1,006,068	0	6	Atlas		804,854	1
	6/3/2021 12:45	6/3/2021 15:00	135	0	2,181,023	0	6	Atlas		1,875,680	1
CSO191 Total										21,964,619	21
CSO193	7/23/2020 19:00	7/23/2020 19:30	30	0	1,393	501	24	Cloudburst		933	1
	7/30/2020 10:00	7/30/2020 10:00	0	3	721	515	24	Cloudburst		1,838	1
	7/30/2020 18:45	7/30/2020 20:00	75	3	1,349	515	24	Cloudburst		3,440	1
	9/3/2020 4:45	9/3/2020 5:15	30	1	2,360	505	6	Cloudburst		2,525	1
	10/20/2020 0:45	10/20/2020 1:15	30	1	5,399	503	24	Cloudburst		6,155	1
	10/29/2020 7:00	10/29/2020 7:00	0	2	1	512	48	Atlas		3	1
	1/25/2021 18:30	1/25/2021 18:30	0	1	9	505	12	Cloudburst		10	1
	2/28/2021 4:45	2/28/2021 7:00	135	2	1,039	513	24	Cloudburst		2,441	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	1,882	513	24	Cloudburst		4,422	1
	3/11/2021 23:15	3/11/2021 23:30	15	0	601	502	12	Cloudburst		547	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	3/18/2021 0:30	3/18/2021 0:30	0	0	3,898	354	24	Cloudburst		2,144	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	374	501	1	Atlas		131	1
	4/10/2021 19:00	4/10/2021 19:00	0	0	3,720	371	1	Atlas		1,674	1
	4/29/2021 2:15	4/29/2021 2:15	0	1	3,003	504	24	Cloudburst		3,604	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	346	501	24	Cloudburst		249	1
	6/3/2021 8:30	6/3/2021 12:30	240	0	122,743	503	6	Cloudburst		108,014	1
CSO193 Total										138,130	16
CSO195	9/3/2020 5:15	9/3/2020 5:15	0	0	0	501	6	Cloudburst		0	1
	10/20/2020 1:30	10/20/2020 1:30	0	1	234	500	24	Cloudburst		255	1
	2/28/2021 5:30	2/28/2021 5:45	15	2	36	505	24	Cloudburst		79	1
	6/3/2021 12:15	6/3/2021 12:15	0	0	74,160	501	6	Cloudburst		68,969	1
CSO195 Total										69,303	4
CSO196	7/5/2020 18:15	7/5/2020 18:15	0	0	10,835	3	1	Atlas		2,167	1
	7/30/2020 9:30	7/30/2020 20:15	645	2	66,555	506	24	Cloudburst		151,080	1
	9/3/2020 5:00	9/3/2020 5:15	15	0	17,025	501	6	Cloudburst		16,174	1
	2/28/2021 5:15	2/28/2021 5:45	30	2	27,701	505	24	Cloudburst		60,666	1
	2/28/2021 20:30	2/28/2021 20:30	0	2	25,416	505	24	Cloudburst		55,661	1
	3/11/2021 20:00	3/11/2021 20:00	0	0	954	500	12	Cloudburst		925	1
	3/18/2021 0:30	3/18/2021 0:30	0	0	15,755	19	24	Atlas		8,823	1
	3/25/2021 10:15	3/25/2021 10:15	0	0	19,594	19	1	Atlas		6,074	1
	4/7/2021 17:45	4/7/2021 17:45	0	0	156	500	1	Atlas		64	1
	4/10/2021 18:45	4/10/2021 18:45	0	0	8,945	11	12	Atlas		3,757	1
	4/29/2021 2:00	4/29/2021 2:00	0	0	2	394	24	Cloudburst		2	1
	5/4/2021 7:00	5/4/2021 7:00	0	0	1,141	29	1	Atlas		365	1
	6/3/2021 8:30	6/3/2021 8:30	0	0	34	501	6	Cloudburst		32	1
CSO196 Total										305,790	13
CSO197	7/23/2020 19:00	7/23/2020 19:15	15	0	1,741	91	1	Atlas		1,097	1
	7/30/2020 11:45	7/30/2020 19:15	450	2	2,597	506	24	Cloudburst		5,895	1
	9/3/2020 4:45	9/3/2020 5:00	15	0	1,625	501	6	Cloudburst		1,544	1
	10/20/2020 1:00	10/20/2020 1:15	15	1	1,980	500	24	Cloudburst		2,158	1
	2/28/2021 5:15	2/28/2021 5:30	15	2	613	505	24	Cloudburst		1,342	1
	6/3/2021 8:15	6/3/2021 12:00	225	0	763	501	6	Cloudburst		710	1
CSO197 Total										12,746	6
CSO198	7/23/2020 19:15	7/23/2020 19:15	0	0	5,170	91	1	Atlas		3,257	1
	7/30/2020 13:30	7/30/2020 20:00	390	2	14,424	506	24	Cloudburst		32,743	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	9/3/2020 4:45	9/3/2020 5:00	15	0	4,727	501	6	Cloudburst		4,491	1
	10/20/2020 1:00	10/20/2020 1:15	15	1	8,237	500	24	Cloudburst		8,978	1
	2/28/2021 5:15	2/28/2021 5:30	15	2	7,466	505	24	Cloudburst		16,351	1
	3/25/2021 10:15	3/25/2021 10:15	0	0	2,045	19	1	Atlas		634	1
	6/3/2021 12:00	6/3/2021 12:15	15	0	5,904	501	6	Cloudburst		5,491	1
CSO198 Total										71,945	7
CSO199	7/5/2020 18:00	7/5/2020 18:15	15	0	25,155	3	1	Atlas		5,031	1
	7/23/2020 19:30	7/23/2020 19:45	15	0	13,844	91	1	Atlas		8,722	1
	7/30/2020 9:30	7/30/2020 20:30	660	2	39,659	506	24	Cloudburst		90,025	1
	9/2/2020 4:45	9/2/2020 4:45	0	0	206	9	3	Atlas		64	1
	9/3/2020 5:00	9/3/2020 5:30	30	0	13,947	501	6	Cloudburst		13,250	1
	10/20/2020 1:15	10/20/2020 1:45	30	1	29,842	500	24	Cloudburst		32,528	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	325	0	1	Atlas		39	1
	10/29/2020 3:15	10/29/2020 4:00	45	2	3	505	48	Atlas		7	1
	11/25/2020 7:45	11/25/2020 7:45	0	1	155	501	6	Cloudburst		169	1
	1/1/2021 7:45	1/1/2021 7:45	0	0	286	245	12	Cloudburst		200	1
	2/28/2021 4:45	2/28/2021 8:30	225	2	24,765	505	24	Cloudburst		54,236	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	16,044	505	24	Cloudburst		35,136	1
	3/11/2021 20:00	3/11/2021 23:45	225	0	2,285	500	12	Cloudburst		2,216	1
	3/18/2021 0:45	3/18/2021 0:45	0	0	289	19	24	Atlas		162	1
	3/25/2021 10:30	3/25/2021 10:30	0	0	3,529	19	1	Atlas		1,094	1
	4/7/2021 17:30	4/7/2021 18:00	30	0	3,429	500	1	Atlas		1,406	1
	4/10/2021 19:00	4/10/2021 19:00	0	0	1,562	11	12	Atlas		656	1
	4/28/2021 15:30	4/28/2021 16:30	60	0	1,643	394	24	Cloudburst		1,577	1
	4/29/2021 1:15	4/29/2021 14:45	810	0	1,632	394	24	Cloudburst		1,567	1
	5/3/2021 2:45	5/3/2021 3:00	15	0	5,500	1	12	Cloudburst		1,485	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	416	29	1	Atlas		133	1
	5/26/2021 11:00	5/26/2021 17:45	405	0	247	500	3	Cloudburst		163	1
	6/2/2021 5:00	6/2/2021 19:00	840	0	195	15	24	Atlas		111	1
	6/3/2021 8:45	6/3/2021 12:45	240	0	32,162	501	6	Cloudburst		29,911	1
	6/6/2021 16:45	6/6/2021 16:45	0	0	0	0	3	Atlas		0	1
	6/29/2021 20:00	6/29/2021 20:00	0	0	7	2	1	Atlas		1	1
CSO199 Total										279,889	26
CSO201	7/24/2020 3:00	7/24/2020 3:00	0	0	49,163	501	24	Cloudburst		32,939	1
	7/28/2020 2:15	7/28/2020 2:15	0	0	3,369,100	0	1	Atlas		33,691	1
	7/30/2020 9:30	7/30/2020 19:45	615	3	11,867	515	24	Cloudburst		30,262	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	10/20/2020 1:30	10/20/2020 1:45	15	1	32,268	503	24	Cloudburst		36,785	1
	2/28/2021 5:30	2/28/2021 5:45	15	2	11,007	513	24	Cloudburst		25,867	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	6,986	513	24	Cloudburst		16,418	1
	3/11/2021 23:30	3/11/2021 23:30	0	0	1,433	502	12	Cloudburst		1,304	1
	3/18/2021 0:45	3/18/2021 0:45	0	0	22,940	354	24	Cloudburst		12,617	1
	3/25/2021 10:30	3/25/2021 10:30	0	0	34,673	500	1	Atlas		11,442	1
	4/7/2021 18:00	4/7/2021 18:00	0	0	15,814	501	1	Atlas		5,535	1
	4/10/2021 19:00	4/10/2021 19:00	0	0	2,560	371	1	Atlas		1,152	1
	4/29/2021 2:15	4/29/2021 2:15	0	1	765	504	24	Cloudburst		918	1
	6/3/2021 8:45	6/3/2021 12:30	225	0	76,763	503	6	Cloudburst		67,551	1
CSO201 Total										276,481	13
CSO202	7/5/2020 18:00	7/5/2020 18:15	15	0	40,590	3	1	Atlas		8,118	1
	7/23/2020 17:45	7/23/2020 19:45	120	0	10,973	91	1	Atlas		6,913	1
	7/30/2020 8:30	7/30/2020 20:15	705	2	20,695	506	24	Cloudburst		46,977	1
	9/2/2020 3:45	9/2/2020 4:45	60	0	4,706	9	3	Atlas		1,459	1
	9/3/2020 4:45	9/3/2020 5:15	30	0	9,621	501	6	Cloudburst		9,140	1
	10/19/2020 9:45	10/20/2020 12:00	1575	1	10,633	500	24	Cloudburst		11,590	1
	11/25/2020 7:45	11/25/2020 7:45	0	1	27	501	6	Cloudburst		29	1
	12/1/2020 9:45	12/1/2020 9:45	0	0	0	0	1	Atlas		0	1
	1/1/2021 7:45	1/1/2021 7:45	0	0	854	245	12	Cloudburst		598	1
	1/25/2021 10:45	1/25/2021 13:45	180	1	1,422	501	12	Cloudburst		1,593	1
	2/28/2021 4:30	2/28/2021 8:15	225	2	6,992	505	24	Cloudburst		15,313	1
	2/28/2021 20:45	2/28/2021 20:45	0	2	654	505	24	Cloudburst		1,432	1
	3/11/2021 20:00	3/11/2021 23:45	225	0	4,540	500	12	Cloudburst		4,404	1
	3/18/2021 0:45	3/18/2021 0:45	0	0	2,955	19	24	Atlas		1,655	1
	3/25/2021 10:15	3/25/2021 10:30	15	0	10,697	19	1	Atlas		3,316	1
	3/31/2021 0:15	3/31/2021 0:30	15	0	1,262	500	6	Cloudburst		871	1
	4/7/2021 17:30	4/7/2021 18:00	30	0	10,132	500	1	Atlas		4,154	1
	4/10/2021 19:00	4/10/2021 19:00	0	0	2,779	11	12	Atlas		1,167	1
	4/28/2021 15:30	4/28/2021 15:30	0	0	3,395	394	24	Cloudburst		3,259	1
	4/29/2021 1:15	4/29/2021 2:15	60	0	2,873	394	24	Cloudburst		2,758	1
	4/29/2021 13:30	4/29/2021 13:30	0	0	889	394	24	Cloudburst		853	1
	5/3/2021 2:45	5/3/2021 2:45	0	0	8,185	1	12	Cloudburst		2,210	1
	5/4/2021 7:15	5/4/2021 7:15	0	0	2,000	29	1	Atlas		640	1
	5/9/2021 10:15	5/9/2021 10:15	0	0	73	1	1	Atlas		19	1
	6/3/2021 8:30	6/3/2021 12:30	240	0	15,002	501	6	Cloudburst		13,952	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	6/7/2021 3:30	6/7/2021 3:45	15	0	210	3	1	Atlas		42	1
CSO202 Total										142,462	26
CSO203	7/23/2020 19:15	7/23/2020 19:15	0	0	51	91	1	Atlas		32	1
	7/30/2020 13:45	7/30/2020 19:30	345	2	12,726	506	24	Cloudburst		28,889	1
	10/20/2020 1:30	10/20/2020 1:30	0	1	3,890	500	24	Cloudburst		4,240	1
	2/28/2021 5:30	2/28/2021 7:15	105	2	1,793	505	24	Cloudburst		3,927	1
	3/25/2021 10:30	3/25/2021 10:30	0	0	365	19	1	Atlas		113	1
	4/7/2021 17:30	4/7/2021 17:30	0	0	4,888	500	1	Atlas		2,004	1
	4/28/2021 15:30	4/28/2021 15:30	0	0	199	394	24	Cloudburst		191	1
	6/3/2021 12:30	6/3/2021 12:30	0	0	10,134	501	6	Cloudburst		9,425	1
CSO203 Total										48,821	8
CSO205	7/5/2020 17:45	7/5/2020 18:30	45	0	7,943	0	1	Atlas		4,210	1
	7/11/2020 20:15	7/11/2020 20:15	0	0	163	0	12	Atlas		67	1
	7/20/2020 14:30	7/20/2020 15:00	30	1	191	28	1	Atlas		233	1
	7/22/2020 17:00	7/22/2020 17:00	0	0	1,667	0	1	Atlas		50	1
	7/23/2020 7:15	7/23/2020 7:15	0	0	101	0	1	Atlas		77	1
	7/23/2020 19:45	7/23/2020 19:45	0	0	175	0	1	Atlas		133	1
	7/30/2020 8:30	7/30/2020 19:30	660	3	4,325	34	12	Atlas		10,899	1
	8/21/2020 18:45	8/21/2020 18:45	0	0	5	0	24	Atlas		2	1
	10/19/2020 9:00	10/20/2020 2:30	1050	0	6,181	0	24	Atlas		5,872	1
	10/23/2020 19:00	10/23/2020 19:00	0	0	1,835	0	3	Atlas		367	1
	10/29/2020 0:00	10/29/2020 10:15	615	2	2,659	5	24	Cloudburst		5,531	1
	11/15/2020 4:45	11/15/2020 7:00	135	0	93	0	6	Atlas		27	1
	11/25/2020 6:15	11/25/2020 6:30	15	1	19	1	6	Cloudburst		25	1
	11/25/2020 18:30	11/25/2020 18:30	0	1	36	1	6	Cloudburst		47	1
	1/1/2021 7:15	1/1/2021 11:30	255	0	3,975	0	12	Atlas		2,981	1
	1/25/2021 8:45	1/25/2021 15:45	420	1	1,608	0	12	Atlas		1,753	1
	1/30/2021 21:45	1/30/2021 22:30	45	0	322	0	1	Atlas		116	1
	1/31/2021 7:30	1/31/2021 7:30	0	0	3	0	1	Atlas		1	1
	2/28/2021 4:15	3/1/2021 0:45	1230	2	5,767	6	24	Cloudburst		11,879	1
	3/11/2021 20:15	3/12/2021 9:00	765	1	3,548	0	12	Atlas		3,548	1
	3/15/2021 13:30	3/15/2021 14:15	45	0	6,155	0	3	Atlas		677	1
	3/17/2021 17:00	3/18/2021 8:15	915	0	2,575	0	24	Atlas		1,519	1
	3/25/2021 10:15	3/25/2021 11:30	75	0	4,576	0	3	Atlas		1,510	1
	3/30/2021 22:30	3/31/2021 1:45	195	0	2,889	0	6	Atlas		2,138	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	4/7/2021 17:30	4/7/2021 18:30	60	0	3,495	0	1	Atlas		1,363	1
	4/10/2021 11:45	4/10/2021 14:00	135	0	2,940	0	6	Atlas		1,235	1
	4/24/2021 15:15	4/24/2021 15:15	0	0	83	0	12	Atlas		19	1
	4/28/2021 15:15	4/28/2021 15:30	15	1	402	0	24	Atlas		426	1
	4/29/2021 1:15	4/29/2021 14:00	765	1	405	0	24	Atlas		429	1
	5/3/2021 2:45	5/3/2021 3:00	15	0	458	0	12	Atlas		151	1
	5/4/2021 7:15	5/4/2021 8:00	45	0	544	0	1	Atlas		147	1
	5/4/2021 21:30	5/5/2021 1:30	240	0	1,220	0	6	Atlas		549	1
	5/9/2021 10:15	5/9/2021 10:15	0	0	4	0	1	Atlas		1	1
	6/3/2021 12:15	6/3/2021 12:30	15	0	12,312	0	6	Atlas		7,387	1
	6/6/2021 16:30	6/6/2021 16:30	0	0	2,214	0	1	Atlas		797	1
	6/7/2021 3:30	6/7/2021 4:00	30	0	113	0	1	Atlas		34	1
CSO205 Total										66,200	36
CSO208	7/30/2020 9:00	7/30/2020 9:00	0	2	10,679	1	12	Cloudburst		26,056	1
	7/30/2020 19:15	7/30/2020 19:15	0	2	6,053	1	12	Cloudburst		14,769	1
CSO208 Total										40,825	2
CSO210	8/11/2020 7:00	8/11/2020 8:15	75	0	43,839	0	1	Atlas		10,083	1
	8/14/2020 3:30	8/14/2020 11:15	465	1	170,390	8	1	Atlas		192,541	1
	8/28/2020 22:30	8/29/2020 0:45	135	0	186,606	0	3	Atlas		95,169	1
	9/2/2020 4:30	9/2/2020 8:00	210	0	124,960	0	3	Atlas		62,480	1
	9/3/2020 4:15	9/3/2020 13:00	525	1	304,534	24	6	Cloudburst		383,713	1
	10/19/2020 9:15	10/20/2020 8:45	1410	1	671,158	5	24	Cloudburst		892,640	1
	10/23/2020 19:30	10/23/2020 22:15	165	0	230,845	0	3	Atlas		46,169	1
	10/29/2020 1:00	10/30/2020 2:15	1515	3	260,666	500	24	Cloudburst		865,410	1
	11/15/2020 8:15	11/15/2020 8:15	0	0	24	0	6	Atlas		10	1
	11/25/2020 7:15	11/25/2020 11:15	240	2	39,372	24	6	Cloudburst		62,602	1
	1/1/2021 7:15	1/1/2021 14:30	435	1	318,744	4	12	Cloudburst		318,744	1
	1/25/2021 10:15	1/25/2021 23:30	795	2	259,118	32	12	Atlas		404,224	1
	1/30/2021 22:45	1/31/2021 2:00	195	0	87,643	1	1	Atlas		70,114	1
	2/28/2021 4:00	3/1/2021 13:30	2010	3	384,394	331	24	Cloudburst		1,068,615	1
	3/11/2021 20:45	3/12/2021 11:45	900	1	481,173	8	12	Cloudburst		635,148	1
	3/15/2021 14:15	3/15/2021 16:30	135	0	231,524	0	3	Atlas		39,359	1
	3/18/2021 7:30	3/18/2021 10:45	195	1	101,380	3	24	Cloudburst		110,504	1
	3/25/2021 11:00	3/25/2021 14:45	225	0	189,325	0	3	Atlas		68,157	1
	3/30/2021 23:45	3/31/2021 5:00	315	0	285,849	2	6	Cloudburst		214,387	1
	4/7/2021 17:15	4/8/2021 2:00	525	0	449,200	20	1	Atlas		399,788	1

CSO	START DATE	END DATE	DURATION (MIN)	RAIN TOTAL (INCH)	DISCHARGE PER RAIN	FREQUENCY (YR)	PERIOD (HR)	STANDARD	COMMENT	DISCHARGE VOLUME (GAL)	COUNT OF CSO
	4/10/2021 14:00	4/10/2021 15:00	60	0	38,341	0	12	Atlas		11,119	1
	4/28/2021 15:00	4/29/2021 17:00	1560	2	222,134	19	1	Atlas		350,972	1
	5/3/2021 5:00	5/3/2021 6:15	75	0	35,956	0	12	Atlas		14,742	1
	5/4/2021 6:45	5/4/2021 11:15	270	0	103,993	1	24	Cloudburst		98,793	1
	5/5/2021 0:30	5/5/2021 4:30	240	0	97,985	1	24	Cloudburst		93,086	1
	5/9/2021 11:30	5/9/2021 13:45	135	0	104,090	0	1	Atlas		32,268	1
	5/26/2021 11:15	5/26/2021 16:00	285	0	219,581	2	3	Atlas		149,315	1
	6/3/2021 8:15	6/3/2021 17:15	540	1	323,394	6	12	Cloudburst		358,967	1
	6/7/2021 4:45	6/7/2021 5:45	60	0	19,613	0	1	Atlas		10,395	1
	6/29/2021 17:00	6/29/2021 20:30	210	0	1,186,567	0	1	Atlas		71,194	1
CSO210 Total										7,130,708	30
CSO211	7/5/2020 18:45	7/5/2020 19:45	60	0	25,709,175	0	3	Atlas		1,028,367	1
	7/23/2020 19:15	7/23/2020 22:45	210	0	94,371,834	0	6	Atlas		38,692,452	1
	7/30/2020 9:00	7/30/2020 22:45	825	3	57,745,554	420	12	Cloudburst		150,138,441	1
	9/3/2020 5:00	9/3/2020 8:15	195	1	46,385,898	24	6	Cloudburst		58,446,231	1
	10/19/2020 11:00	10/19/2020 12:15	75	1	1,294,280	5	24	Cloudburst		1,721,392	1
	10/20/2020 1:00	10/20/2020 4:15	195	1	36,706,102	5	24	Cloudburst		48,819,115	1
	10/29/2020 1:45	10/29/2020 11:15	570	3	29,259,460	500	24	Cloudburst		97,141,406	1
	11/25/2020 12:45	11/25/2020 13:00	15	2	3,556	24	6	Cloudburst		5,654	1
	1/1/2021 7:30	1/1/2021 12:45	315	1	9,195,326	4	12	Cloudburst		9,195,326	1
	1/25/2021 10:45	1/25/2021 19:15	510	2	42,886,638	32	12	Atlas		66,903,156	1
	2/28/2021 4:30	3/1/2021 2:45	1335	3	81,807,180	331	24	Cloudburst		227,423,961	1
	3/11/2021 20:45	3/12/2021 7:30	645	1	16,972,462	8	12	Cloudburst		22,403,650	1
	3/25/2021 11:30	3/25/2021 13:15	105	0	2,917,661	0	3	Atlas		1,050,358	1
	3/31/2021 0:15	3/31/2021 3:45	210	0	14,411,057	2	6	Cloudburst		10,808,293	1
	4/7/2021 17:45	4/7/2021 21:15	210	0	8,361,228	20	1	Atlas		7,441,493	1
	4/28/2021 16:00	4/28/2021 17:15	75	2	402,459	19	1	Atlas		635,886	1
	4/29/2021 3:00	4/29/2021 3:30	30	2	35,497	19	1	Atlas		56,086	1
	5/5/2021 1:15	5/5/2021 2:30	75	0	446,639	1	24	Cloudburst		424,307	1
	6/3/2021 12:15	6/3/2021 13:45	90	1	34,651,659	6	12	Cloudburst		38,463,342	1
CSO211 Total										780,798,916	19
Grand Total										3,772,252,785	1631

Appendix B Annual Average Overflow Volume

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		MODELED TYPICAL YEAR ACTIVATIONS FOR POST-IOAP CONDITIONS1			MODELED TYPICAL YEAR ACTIVATIONS FOR CURRENT CONDITIONS2			MODELED TYPICAL YEAR ACTIVATIONS FOR PRE-IOAP CONDITIONS3		
CSO	IOAP APPROVED LEVEL OF CONTROL	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED
015 & 191	8	125	1095	18	481	8670	145	2784	77235	1287
016	8	0	285	5	4	1605	27	39	5625	94
018	0	0	0	0	15	1425	24	158	30045	501
019	8	14	435	7	14	435	7	193	15990	267
020	8	1	435	7	111	14535	242	355	26115	435
022	8	2	315	5	2	435	7	5	945	16
023	8	0	0	0	0	225	4	2	525	9
027	N/A5	0	0	0	0	0	0	0	0	0
028	8	0	0	0	0	0	0	1	2520	42
029	8	0	105	2	0	270	5	5	6315	105
031	N/A5	0	0	0	0	0	0	0	0	0
034	8	0	180	3	0	195	3	3	7680	128
035	N/A5	0	0	0	0	0	0	0	0	0
036	8	0	165	3	0	270	5	0	480	8
038	N/A5	0	195	3	0	405	7	0	390	7
050	8	0	0	0	35	12555	209	20	7230	121
051	N/A - CSO to be eliminated4	N/A - CSO to be eliminated4			3	4095	68	0	1020	17
052	8	0	0	0	7	7590	127	2	2700	45
053	8	0	0	0	8	11205	187	8	11100	185
054	8	0	465	8	4	5850	98	2	8865	148
055	8	1	510	9	21	9630	161	5	2535	42
056	8	0	0	0	11	5550	93	4	2550	43
057	N/A5	0	0	0	0	0	0	0	0	0
058	8	0	0	0	8	855	14	51	21510	359
062	N/A5	1	255	4	136	14820	247	100	18525	309
082	0	0	0	0	36	12690	212	19	11925	199
083	N/A - CSO to be eliminated4	N/A - CSO to be eliminated4			0	360	6	0	345	6
084	0	0	0	0	19	5205	87	19	5205	87
086	N/A5	0	0	0	0	0	0	0	0	0
088	4	0	45	0	0	0	0	11	8685	145
091	8	0	0	0	0	0	0	3	9675	161

		MODELED TYPICAL YEAR ACTIVATIONS FOR POST-IOAP CONDITIONS1			MODELED TYPICAL YEAR ACTIVATIONS FOR CURRENT CONDITIONS2			MODELED TYPICAL YEAR ACTIVATIONS FOR PRE-IOAP CONDITIONS3		
CSO	IOAP APPROVED LEVEL OF CONTROL	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED
092	N/A5	0	0	0	0	0	0	1	30	0
093	0	0	0	0	0	0	0	0	60	1
097	8	0	285	5	0	330	6	18	12390	207
104	8	29	585	10	57	2445	41	9	2955	49
105								260	9450	158
106	N/A - CSO to be eliminated4	N/A - CSO to be eliminated4			CSO Eliminated			0	2040	34
108	8	2	210	4	2	270	5	52	7410	124
109	N/A5	2	705	12	2	1605	27	1	1695	28
110	8	0	240	4	0	255	4	20	9735	162
111	8	1	315	5	1	300	5	5	3675	61
113	8	0	0	0	0	0	0	6	2475	41
117	8	35	2415	40	35	2415	40	86	13320	222
118	0	0	0	0	125	10395	173	118	10350	173
119	0	1	1185	20	11	7830	131	10	7830	131
120	0	0	0	0	8	6885	115	7	6825	114
121	0	0	0	0	7	1950	33	6	1890	32
125	4	0	0	0	25	5415	90	24	5295	88
126	4	0	0	0	6	4395	73	3	3225	54
127	N/A - CSO to be eliminated4	N/A - CSO to be eliminated4			12	4380	73	12	4170	70
130	8	0	0	0	0	0	0	2	0	0
131	4	0	75	1	0	165	3	2	135	2
132	4	0	0	0	0	0	0	83	0	0
137	N/A - CSO to be eliminated4	N/A - CSO to be eliminated4			CSO Eliminated			9	7950	133
140	0	0	0	0	0	0	0	3	3030	51
141	0	0	0	0	0	0	0	1	10215	170
144	N/A5	1	345	6	1	345	6	1	225	4
146	8	1	315	5	1	345	6	38	5910	99
148	8	0	0	0	0	0	0	1	1650	28
149	8	22	1920	32	24	2055	34	138	7590	127
150	8	0	0	0	4	7020	117	1	1575	26
151	8	0	90	2	0	180	3	98	35145	586
152	8	6	720	12	6	780	13	59	11715	195

		MODELED TYPICAL YEAR ACTIVATIONS FOR POST-IOAP CONDITIONS1			MODELED TYPICAL YEAR ACTIVATIONS FOR CURRENT CONDITIONS2			MODELED TYPICAL YEAR ACTIVATIONS FOR PRE-IOAP CONDITIONS3		
CSO	IOAP APPROVED LEVEL OF CONTROL	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED
153	0	0	0	0	19	15615	260	19	15345	256
154	4	0	0	0	0	0	0	23	15480	258
155	8	0	0	0	1	2130	36	1	2130	36
160	0	0	0	0	0	0	0	0	465	8
161	N/A5	0	0	0	0	0	0	0	0	0
166	4	0	0	0	55	5820	97	52	5595	93
167	4	0	0	0	0	0	0	0	1890	32
172	N/A - CSO eliminated4	N/A - CSO eliminated4			N/A - CSO eliminated4			1	2265	38
178	8	0	75	1	0	240	4	20	11250	188
179	N/A5	0	0	0	0	0	0	0	0	0
181	8	0	0	0	0	0	0	4	8835	147
189	8	25	555	9	49	2055	34	240	11505	192
190	8	1	210	4	0	120	2	30	7380	123
193	8	0	180	3	0	240	4	0	315	5
195	8	0	0	0	0	0	0	3	10545	176
196	8	0	0	0	0	0	0	0	495	8
197	8	0	165	3	0	270	5	3	8385	140
198	N/A5	0	150	3	0	255	4	0	510	9
199	8	0	150	3	0	315	5	1	7605	127
200	8	0	0	0	0	0	0	2	12120	202
201	N/A5	0	240	4	0	510	9	1	1245	21
202	8	0	150	3	0	330	6	0	1695	28
203	N/A5	0	0	0	0	0	0	0	0	0
206	N/A - CSO eliminated4	N/A - CSO eliminated4			N/A - CSO eliminated4			29	14805	247
207	N/A5	0	0	0	0	0	0	0	0	0
208	N/A5	0	375	6	0	375	6	1	4890	82
210	8	2	375	6	4	1470	25	19	5835	97
211	8	34	690	12	131	1905	32	1090	18585	310
SBR	N/A5	5	645	11	8	765	13	46	27015	450

1Post-IOAP Condition results are based on model simulations of the 2001 Typical Year with the "baseline" projects implemented (Sanitary Sewer Discharge Plan and other existing Combined Sewer System facility improvements) and the most recently compiled Long Term Control Plan project model. This model reflects the updated projects included in the 2021 IOAP modification. Modeling results assume MFWQTC operating at full capacity. The data reflects the construction of the current approved suite of IOAP projects, with some minor modifications to the results based on projected optimization and projected revision of the RTC. Addtional revisions to RTC and programming is anticipated as projects are completed and RTC is optimized. Modeling results demonstrate that the system, as currently designed and when operating at full capacity, will perform better than the approved plan. However, this data is provided for information only. The modeling results do not reflect a specific committment to a set number of activations, cumulative volume or total minutes of overflow at each CSO, nor do they represent a cumulative committment to residual AAOV. There are no target committments for number of activations at each individual CSO. The target committment for the system is based on an 85% capture, resulting in a total residual AAOV of 2,955 MG.

		MODELED TYPICAL YEAR ACTIVATIONS FOR POST-IOAP CONDITIONS1			MODELED TYPICAL YEAR ACTIVATIONS FOR CURRENT CONDITIONS2			MODELED TYPICAL YEAR ACTIVATIONS FOR PRE-IOAP CONDITIONS3		
CSO	IOAP APPROVED LEVEL OF CONTROL	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED	VOLUME (MG)	TYPICAL YEAR MODELED TOTAL MINUTES ACTIVATED	TYPICAL YEAR MODELED TOTAL HOURS ACTIVATED

2Current Condition results are based on model simulations of the 2001 Typical Year with current upstream SSDP conditions and the current average available treatment plant capacity. The model reflects projects certiified through June 30, 2021. Partial construction of projects was not included.

3Pre-IOAP results are based on model simulations of the 2001 Typical Year with no baseline projects or IOAP projects constructed. Model results reflect calibration modifications to the model that occurred after the onset of the IOAP.

4These CSOs have been or will be eliminated (i.e., closed & removed from permit) by 2020 via implementation of Long Term Control Plan projects

5These CSOs were originally modeled or had baseline modeling condtions causing them to activate less than or equal to 8 times per Typical Year and thus do not have an associated project in the approved IOAP. Some were revised later with updated model geomtery and were corrected with CMOM activities.

Appendix C Unauthorized Discharges - Wet Weather SSOs

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WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	7/30/2020 15:30	7/31/2020 16:00	2,100,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3289023	NO CLEANUP REQUIRED, MANHOLE IS DISCHARGING DIRECTLY INTO CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	7/30/2020 21:23	7/31/2020 5:19	300,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3289099	NO CLEANUP REQUIRED, PIPES DISCHARGE UNDERWATER, DIRECTLY INTO RIVER.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	7/31/2020 9:00	7/31/2020 14:15	15,000	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3289119	WO#3289306	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	8/1/2020 20:15	8/2/2020 12:30	700,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3289313	NOT RE-QUIRED,MANHOLE DISCHARGES DIRECTLY INTO THE CREEK.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	9/3/2020 7:00	9/3/2020 18:45	3,300,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298917	NO CLEANUP REQUIRED DISCHARGE PIPE DISCHARGES DIRECTLY INTO CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3317 DELL RD	9/3/2020 7:50	9/3/2020 14:07	5,640	Sewer Manhole	28413	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298932	WO#3299296	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3322 DELL RD	9/3/2020 7:51	9/3/2020 14:06	9,375	Sewer Manhole	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298931	WO#3299295	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3406 DELL RD	9/3/2020 7:53	9/3/2020 14:03	18,500	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298929	WO#3299294	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	9/3/2020 7:55	9/4/2020 6:15	53,600	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298934	WO#3299346	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	9/3/2020 7:56	9/3/2020 14:08	744	Sewer Manhole	28452	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298935	WO#3299298	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	10191 BUNSEN WAY	9/3/2020 8:30	9/9/2020 13:48	51,705	Sewer Manhole	111120	GROUND	CHENOWETH RUN	RAIN EVENT CAUSED CULVERT AND ROAD FAILURE AND DAMAGED SEWER LINE.	STRUC-TURAL FAILURE	3299002	SIGNS AT LOCATION.	ISSUE REPAIRED.
MORRIS FORMAN	KY0022411	2408 GRAY FOX RD	9/3/2020 8:30	9/4/2020 6:40	99,000	Sewer Manhole	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298936	WO#3299347	LOCATION INCLUDED IN THE IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	9/3/2020 8:37	9/3/2020 16:35	400,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298915	NO CLEANUP REQUIRED DIS-CHARGE PIPE IS SUBMERGED AND DIRECTLY INTO CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	9/3/2020 8:40	9/4/2020 6:54	198,000	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298938	WO#3299348	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	9/3/2020 8:43	9/3/2020 14:11	16,400	Sewer Manhole	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298939	WO#3299299	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	9/3/2020 8:45	9/3/2020 14:12	39,120	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298940	WO#3299300	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7913 SHEL-BYVILLE RD	9/3/2020 10:05	9/3/2020 13:17	6,144	Sewer Manhole	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298941	WO#3299302	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	7900 SHEL-BYVILLE RD	9/3/2020 10:13	9/3/2020 13:28	24,375	Sewer Manhole	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298942	WO#3299304	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OX-MOOR LN	9/3/2020 10:23	9/4/2020 6:40	425,950	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298944	RESET MANHOLE LID. NO CLEANUP PERFORMED. ADDITIONAL RAIN WASHED AWAY DEBRIS BEFORE CLEAN UP COULD BE INITIATED. LIMITED ACCESS TO DUE TO CONSTRUCTION.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 BUL-LITT LN	9/3/2020 10:26	9/3/2020 13:40	48,500	Sewer Manhole	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298945	WO#3299305	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4313 PRUITT CT	9/3/2020 12:10	9/4/2020 7:10	399,000	Sewer Manhole	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298988	WO#3299344	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4341 PRUITT CT	9/3/2020 12:13	9/3/2020 14:44	302	Sewer Manhole	08430	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298983	3299291	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4309 PRUITT CT	9/3/2020 12:15	9/3/2020 14:43	148	Sewer Manhole	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298986	WO#3299289	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4335 PRUITT CT	9/3/2020 12:20	9/4/2020 7:11	1,131	Sewer Manhole	08429	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3298984	WO#3299342	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4522 AL-GONQUIN PKY	9/30/2020 12:00	9/30/2020 16:00	200	Sewer Treatment Plant	MSD0278	STREAM	OHIO RIVER	SEAL FAILURE ON ISOLATION GATE.	MECHAN-ICAL FAILURE	3306770	N/A	PUMPED OUT RE-MAINING WATER.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	10/20/2020 3:45	10/20/2020 16:45	41	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY.	LACK OF SYSTEM CAPACITY	3311315	NO CLEANUP RE-QUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO STREAM.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	10/20/2020 4:00	10/20/2020 7:00	200,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3311314	NO CLEANUP RE-QUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO STREAM.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4010 BELLS LN	10/20/2020 15:30	10/20/2020 15:50	6,000	Sewer Lift Station	MSD0080-PS	GROUND	PADDY RUN	THE EQ BASIN DRAIN LINE TO SOUTHWEST-ERN PUMP STATION HAS BEEN DAMAGED.	STRUC-TURAL FAILURE	3311492	WE DISINFECTED THE AREA.	DRAIN PUMPS ARE LOCKED OUT UNTIL REPAIR CAN BE MADE.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	10/29/2020 4:30	10/30/2020 14:45	7,500,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312739	NO CLEANUP RE-QUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO STREAM.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	10/29/2020 5:30	10/30/2020 4:30	1,700,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	3312738	NO CLEANUP RE-QUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO STREAM	LOCATION INCLUDED IN THE IOAP
HITE CREEK	KY0022420	7302 FLOYDS-BURG RD	10/29/2020 8:00	10/29/2020 14:05	9,125	Sewer Manhole	108956	STREAM	FLOYDS FORK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3312865	NO CLEAN-UP NEEDED, DISCHARGED DIRECTLY TO CREEK.	HAULED FLOYDS-BURG PS UNTIL STATION WAS OUT OF HWW.
MORRIS FORMAN	KY0022411	2408 GRAY FOX RD	10/29/2020 8:10	10/30/2020 8:50	185,000	Sewer Manhole	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312812	WO#3313068	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1012 ALTA CIR	10/29/2020 8:30	10/30/2020 9:00	220,500	Sewer Manhole	40559	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312814	WO#3313069	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OX-MOOR LN	10/29/2020 8:55	10/30/2020 11:07	235,800	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312817	WO#3313070	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3317 DELL RD	10/29/2020 9:30	10/30/2020 8:17	34,175	Sewer Manhole	28413	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312835	WO#3313054	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3322 DELL RD	10/29/2020 9:40	10/30/2020 8:22	34,125	Sewer Manhole	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312834	WO#3313055	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3406 DELL RD	10/29/2020 9:50	10/30/2020 8:27	33,875	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312833	WO#3313056	LOCATION INCLUDED IN THE IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	4313 PRUITT CT	10/29/2020 10:10	10/30/2020 10:05	215,250	Sewer Manhole	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312922	WO#3313060	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4912 DEL-AWARE DR	10/29/2020 10:10	10/30/2020 10:05	35,025	Sewer Manhole	18654	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312926	WO#3313061	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	10/29/2020 10:10	10/30/2020 8:29	66,950	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312837	WO#3313059	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4332 PRUITT CT	10/29/2020 10:30	10/30/2020 10:05	70,750	Sewer Service Line	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312928	WO#3313067	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1726 FRA-SER DR	10/29/2020 10:30	10/30/2020 14:30	23,520	Sewer Manhole	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312927	NO CLEANUP REQUIRED DIS-CHARGE, PIPE IS SUBMERGED.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3406 CHARLANE PKY	10/29/2020 11:00	10/30/2020 8:34	32,350	Sewer Manhole	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312838	WO#3313058	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3506 CHARLANE PKY	10/29/2020 11:10	10/30/2020 8:40	32,250	Sewer Manhole	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312839	WO#3313051	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	10/29/2020 11:20	10/30/2020 10:05	68,250	Sewer Manhole	49647	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312921	WO#3313066	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	10/29/2020 11:30	10/30/2020 8:55	96,375	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312840	WO#3313052	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	10/29/2020 11:42	10/30/2020 8:46	31,600	Sewer Manhole	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312842	WO#3313053	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	10/29/2020 12:35	10/30/2020 8:15	236,000	Sewer Manhole	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312918	WO#3313065	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1013 ALTA CIR	10/29/2020 12:40	10/30/2020 8:00	232,000	Sewer Manhole	27007	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3312920	WO#3313063	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	12/30/2020 23:15	1/2/2021 19:15	8,500,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333637	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	12/31/2020 3:00	1/2/2021 2:00	2,487,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333636	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	12/31/2020 6:50	1/2/2021 7:30	54,250	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333639	WO#3333936	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	12/31/2020 6:55	1/1/2021 16:45	20,251	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333640	WO#3333935	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CIN-DERELLA LN	1/1/2021 11:00	1/1/2021 12:57	2,925	Sewer Manhole	60679	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3333756	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON. MSD HAULED SEWAGE.
MORRIS FORMAN	KY0022411	4309 PRUITT CT	1/1/2021 13:30	1/2/2021 9:04	3,522	Sewer Manhole	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333834	WO#3333929	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4313 PRUITT CT	1/1/2021 13:32	1/2/2021 9:02	175,500	Sewer Manhole	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333835	WO#3333930	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	1/1/2021 13:35	1/2/2021 9:00	2,330	Sewer Manhole	49647	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333836	WO#3333934	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4341 PRUITT CT	1/1/2021 13:40	1/2/2021 9:15	1,175	Sewer Manhole	08430	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333837	WO#3333931	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4341 PRUITT CT	1/1/2021 13:42	1/2/2021 9:13	2,342	Sewer Service Line	85097	GROUND	PADDY RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333838	WO#3333932	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4332 PRUITT CT	1/1/2021 13:45	1/2/2021 9:08	29,075	Sewer Service Line	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333839	WO#3333933	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	1/1/2021 15:57	1/2/2021 9:12	306,000	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333841	WO#3333943	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	1/1/2021 16:30	1/2/2021 9:00	80,000	Sewer Manhole	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333840	WO#3333941	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	201 BUL-LITT LN	1/1/2021 16:55	1/2/2021 9:35	119,000	Sewer Manhole	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333843	WO#3333945	LOCATION INCLUDED IN THE IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	202 OX-MOOR LN	1/1/2021 16:55	1/2/2021 9:45	306,000	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333842	WO#3333944	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3322 DELL RD	1/1/2021 17:00	1/2/2021 7:45	22,125	Sewer Manhole	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3333852	WO#3333937	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	1/25/2021 13:15	1/26/2021 2:00	1,100,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338435	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3406 DELL RD	1/25/2021 13:45	1/26/2021 6:36	25,275	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338439	WO#3338636	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3322 DELL RD	1/25/2021 13:50	1/26/2021 6:45	25,375	Sewer Manhole	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338440	WO#3338637	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	1/25/2021 14:00	1/26/2021 6:22	49,100	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338444	WO#3338639	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3406 CHARLANE PKY	1/25/2021 14:10	1/26/2021 6:28	24,450	Sewer Manhole	28451	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338445	WO#3338445	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	1/25/2021 14:25	1/26/2021 6:30	24,125	Sewer Manhole	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338442	WO#3338638	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	1/25/2021 14:30	1/26/2021 6:18	23,700	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338438	WO#3338634	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2408 GRAY FOX RD	1/25/2021 15:45	1/26/2021 6:10	84,000	Sewer Manhole	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338449	WO#3338643	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	1/25/2021 15:57	1/26/2021 6:57	45,000	Sewer Manhole	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338448	WO#3338641	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	1/25/2021 16:05	1/26/2021 6:30	210,000	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338452	WO#3338644	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	1/25/2021 16:15	1/26/2021 20:00	4,500,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338437	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	201 BUL-LITT LN	1/25/2021 17:10	1/26/2021 6:55	97,500	Sewer Manhole	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338454	WO#3338647	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OX-MOOR LN	1/25/2021 17:15	1/26/2021 6:55	156,000	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338453	WO#3338646	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	1/25/2021 17:30	1/26/2021 7:15	20,625	Sewer Manhole	49647	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338455	WO#3338648	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4309 PRUITT CT	1/25/2021 17:33	1/26/2021 7:18	20,625	Sewer Manhole	08426	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338457	WO#3338649	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4335 PRUITT CT	1/25/2021 17:35	1/26/2021 7:18	20,625	Sewer Manhole	08429	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338673	WO#3338650	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4332 PRUITT CT	1/25/2021 17:36	1/26/2021 7:20	20,625	Sewer Service Line	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338459	WO#3338653	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4912 DEL-AWARE DR	1/25/2021 17:40	1/26/2021 7:22	20,625	Sewer Manhole	18654	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3338460	WO#3338652	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CIN-DERELLA LN	1/25/2021 18:35	1/25/2021 20:00	2,125	Sewer Lift Station	MSD1013-PS	DITCH	FISHPOOL CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3338490	MAGNITUDE OF STORM RESULTED IN NO DEBRIS REMAINING.	HAULED STATION WO #3338468.
MORRIS FORMAN	KY0022411	1726 FRA-SER DR	2/28/2021 6:48	3/1/2021 18:00	200,000	Sewer Manhole	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349842	CLEAN UP NOT REQUIRED, UNDER GROUND PIPE IS DIS-CHARGING TO CREEK.	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	8800 AD-MIRAL DR	2/28/2021 7:00	3/1/2021 3:55	13,375	Sewer Manhole	93705	STREAM	PENNSYLVA-NIA RUN	LACK OF SYS-TEM CAPAC-ITY DUE TO EXCESSIVE RAIN.	LACK OF SYSTEM CAPACITY	3349796	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	4313 PRUITT CT	2/28/2021 7:24	3/2/2021 10:24	459,000	Sewer Manhole	08427	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY-- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349912	WO#3350515	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4332 PRUITT CT	2/28/2021 7:26	3/1/2021 12:13	86,350	Sewer Service Line	085100290046A	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349908	WO#3350520	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4345 PRUITT CT	2/28/2021 7:28	3/1/2021 9:10	38,550	Sewer Service Line	85055	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349909	WO#3350516	LOCATION INCLUDED IN IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	2/28/2021 7:31	3/2/2021 14:30	12,800,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349846	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	4315 PRUITT CT	2/28/2021 7:33	3/1/2021 9:12	1,539	Sewer Manhole	49647	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349910	WO#3350515	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3302 TROUT CREEK DR	2/28/2021 7:42	3/2/2021 10:15	606,600	Sewer Manhole	23211	STREAM	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349906	WO#3350780	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3305 BENT CREEK CT	2/28/2021 7:45	3/1/2021 12:20	17,150	Sewer Service Line	BU05074039	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349907	WO#3350517	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	9114 CIN-DERELLA LN	2/28/2021 7:45	3/1/2021 3:40	239,000	Sewer Manhole	102339	GROUND	FISHPOOL CREEK	LACK OF SYS-TEM CAPAC-ITY DUE TO EXCESSIVE RAIN.	LACK OF SYSTEM CAPACITY	3349798	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	3305 INDI-AN CREEK CT	2/28/2021 7:47	3/2/2021 10:09	906,600	Sewer Manhole	51160	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349898	WO#3350779	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	2/28/2021 7:50	3/3/2021 16:00	1,000,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349848	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
DEREK R. GUTHRIE	KY0078956	9715 EL PRADO ST	2/28/2021 8:40	2/28/2021 11:40	18,000	Sewer Manhole	09730	GROUND	PONDER CREEK	LACK OF SYSTEM CA-PACIT DUE TO EXCESSIVE RAIN.	LACK OF SYSTEM CAPACITY	3349809	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
HITE CREEK	KY0022420	7250 FLOYDS-BURG RD	2/28/2021 8:50	3/1/2021 3:00	18,500	Sewer Manhole	90776	DITCH	FLOYDS FORK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3349812	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1552 CHERO-KEE RD	2/28/2021 9:53	3/2/2021 8:38	414,000	Sewer Manhole	40471	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349995	WO#3350749	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	2/28/2021 10:05	3/2/2021 8:25	920,000	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349997	WO#3350785	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1700 SULGRAVE RD	2/28/2021 10:10	3/2/2021 10:57	432,000	Sewer Manhole	72289	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349996	WO#3350791	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4802 HA-ZELWOOD AVE	2/28/2021 10:10	2/28/2021 16:10	3,600	Sewer Manhole	55665	DITCH	UPPER MILL CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3349823	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	201 BUL-LITT LN	2/28/2021 10:35	3/2/2021 9:04	460,000	Sewer Manhole	47582	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350003	WO#3350787	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	202 OX-MOOR LN	2/28/2021 10:35	3/2/2021 9:04	920,000	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349999	WO#3350786	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7900 SHEL-BYVILLE RD	2/28/2021 10:37	3/2/2021 9:15	55,200	Sewer Manhole	02935	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350006	WO#3350788	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3317 BROWNS-BORO RD	2/28/2021 10:37	3/1/2021 11:40	30,060	Sewer Manhole	26752	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349893	NO CLEAN UP NOT PERFORMED NO PUBLIC ACCESS TO THE DIS-CHARGE SITE.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3322 DELL RD	2/28/2021 10:40	3/2/2021 9:58	70,950	Sewer Manhole	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY - HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350026	WO#3350758	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7900 SHEL-BYVILLE RD	2/28/2021 10:41	3/2/2021 9:15	414,000	Sewer Manhole	02933	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350005	WO#3350789	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	2/28/2021 10:47	3/1/2021 10:30	36,000	Sewer Manhole	90700	CATCH BASIN	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349914	WO#3349914	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2105 INDI-AN HILLS TRL	2/28/2021 10:48	3/2/2021 9:23	28,800	Sewer Manhole	40872	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349991	CLEAN UP NOT NEEDED, NO SOLID OR DEBRIS OBSERVED.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2120 INDI-AN HILLS TRL	2/28/2021 10:50	3/2/2021 9:24	57,600	Sewer Manhole	40871	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349992	WO#3350771	LOCATION INCLUDED IN IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	8021 CHRISTIAN CT	2/28/2021 10:53	3/1/2021 10:35	70,350	Sewer Manhole	47593	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350001	WO#3350565	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3406 DELL RD	2/28/2021 10:55	3/2/2021 9:55	98,700	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350027	WO#3350759	LOCATION INCLUDED IN IOAP.
DEREK R. GUTHRIE	KY0078956	4739 DIX-IE HWY	2/28/2021 11:00	2/28/2021 16:19	63,000	Sewer Manhole	90380	CATCH BASIN	MILL CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3349878	CLEANED AND SANITIZED THE IMPACTED AREA.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	2/28/2021 11:02	3/1/2021 17:35	46,275	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350039	WO#3350567	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3506 CHARLANE PKY	2/28/2021 11:10	3/1/2021 9:47	46,275	Sewer Manhole	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350040	WO#3350568	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	8117 COPPER-CREEK DR	2/28/2021 11:17	3/1/2021 10:38	34,500	Sewer Manhole	65070	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350002	WO#3350566	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	2/28/2021 11:18	3/1/2021 6:30	28,800	Sewer Manhole	28336	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350041	WO#3350569	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7713 WEST-PORT RD	2/28/2021 11:19	3/1/2021 16:00	218,625	Sewer Manhole	105936	GROUND	GOOSE CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3349883	IMPACTED AREA DISINFECTED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	3620 CHARLANE PKY	2/28/2021 11:25	3/1/2021 6:33	28,875	Sewer Manhole	28340	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350042	WO#335070	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	7913 SHEL-BYVILLE RD	2/28/2021 11:35	3/2/2021 9:32	528,000	Sewer Manhole	84155	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3349918	WO#3350747	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	208 BRUNS-WICK RD	2/28/2021 12:08	3/1/2021 12:10	28,800	Sewer Manhole	115183	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350008	RESET MANHOLE. CLEAN UP NOT NEEDED, NO SOLID OR DEBRIS OBSERVED.	LOCATION INCLUDED IN IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	4801 CAS-SIA CT	2/28/2021 12:36	3/2/2021 10:05	315,000	Sewer Manhole	46623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350007	WO#3350774	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1804 ROUND RIDGE RD	2/28/2021 12:36	3/2/2021 10:05	54,000	Sewer Manhole	65623	STREAM	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350000	NO CLEAN UP NOT PERFORMED NO PUBLIC ACCESS TO THE DIS-CHARGE SITE.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4335 PRUITT CT	2/28/2021 12:45	3/1/2021 9:06	30,525	Sewer Manhole	08429	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350010	WO#3350513	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4339 PRUITT CT	2/28/2021 12:45	3/1/2021 9:06	30,525	Sewer Manhole	08431	GROUND	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350009	WO#3350514	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3501 MARLIN DR	2/28/2021 13:00	3/1/2021 6:39	26,475	Sewer Manhole	28416	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350028	WO#3350572	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2216 FAIRLAND AVE	2/28/2021 13:00	3/1/2021 9:24	15,300	Sewer Manhole	49445	GROUND	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350012	WO#3350510	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2219 RICHLAND AVE	2/28/2021 13:00	3/1/2021 9:24	244,800	Sewer Manhole	49446	STREAM	BUECHEL BRANCH	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350015	WO#3350015	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3506 DELL RD	2/28/2021 13:15	3/1/2021 6:39	26,100	Sewer Manhole	28417	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350030	WO#3350572	LOCATION INCLUDED IN IOAP.
CEDAR CREEK	KY0098540	8937 ELI DR	2/28/2021 13:24	3/1/2021 6:00	149,400	Sewer Manhole	98022	STREAM	CEDAR CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3350038	CLEAN UP ACTIVI-TY CONSISTED OF RAKING IMPACT-ED AREA AND THE SPREADING OF LIME.	SYSTEM CAPACITY CAUGHT UP WITH FLOW.
MORRIS FORMAN	KY0022411	24 SOUTH-WIND RD	2/28/2021 13:30	3/1/2021 11:24	26,400	Sewer Manhole	89790	DITCH	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350016	WO#3350558	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	37 AR-ROWHEAD RD	2/28/2021 13:30	3/1/2021 11:24	26,400	Sewer Manhole	89791	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350017	WO#3350559	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	4019 LE-LAND RD	2/28/2021 13:56	3/1/2021 12:31	26,400	Sewer Manhole	96019	GROUND	MUDDY FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350018	WO#3350560	LOCATION INCLUDED IN IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	4640 BARBOUR LN	2/28/2021 14:00	3/1/2021 1:50	213,000	Sewer Manhole	65633	STREAM	LITTLE GOOSE CREEK	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3349969	AREA DISINFECT-ED WITH LIME.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	978 BRECKEN-RIDGE LN	2/28/2021 14:10	3/1/2021 12:31	26,400	Sewer Manhole	74520	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350019	WO#3350562	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3920 DUTCH-MANS LN	2/28/2021 14:16	3/1/2021 12:30	26,400	Sewer Manhole	96673	STREAM	WEICHER CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350020	WO#3350563	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1108 DU-PONT CIR	2/28/2021 14:20	3/1/2021 12:40	33,000	Sewer Manhole	43726	GROUND	WEICHER CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350021	WO#3350564	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	3928 DUTCH-MANS LN	2/28/2021 14:30	3/1/2021 12:40	26,400	Sewer Service Line	Z18284029	GROUND	WEICHER CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350023	WO#3350561	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	2408 GRAY FOX RD	3/1/2021 9:00	3/2/2021 8:14	120,000	Sewer Manhole	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350303	WO#3350810	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	3/1/2021 9:11	3/2/2021 8:15	120,000	Sewer Manhole	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350302	WO#3350810	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1544 CHERO-KEE RD	3/1/2021 9:40	3/2/2021 8:38	120,000	Sewer Manhole	40475	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3350305	WO#3350814	LOCATION INCLUDED IN IOAP.
HITE CREEK	KY0022420	6100 MAYFAIR AVE	3/3/2021 9:08	3/9/2021 13:30	9,999	Sewer Lift Station	MSD1206-PS	GROUND	OHIO RIVER	LACK OF SYSTEM CAPACITY.	LACK OF SYSTEM CAPACITY	3350905	NO CLEAN UP PERFORMED – PIPE DISCHARG-ING UNDERWA-TER, DIRECTLY INTO STREAM.	SITE FOUND DURING RAIN EVENT RE-CON - WILL BE MON-ITORED AND EVALUAT-ED FOR REPAIR.
MORRIS FORMAN	KY0022411	1473 FRANK-FORT AVE	3/4/2021 11:43	3/9/2021 13:41	156,000	Sewer Manhole	100756A-X	GROUND	SOUTH FORK BEARGRASS CREEK	FLOODING AND LACK OF SYSTEM CAPACITY.	PUMPED DUE TO COE MANUAL	3351196	PICK UP TRASH AND SPREAD LIME.	NONE.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	3/11/2021 23:45	3/13/2021 2:15	3,100,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352604	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN THE IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	3/11/2021 23:45	3/12/2021 19:45	800,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352603	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3402 CHARLANE PKY	3/12/2021 5:38	3/13/2021 9:16	66,320	Sewer Manhole	28453	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352612	WO#3352844	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3506 CHARLANE PKY	3/12/2021 5:40	3/13/2021 9:19	3,318	Sewer Manhole	28250	DITCH	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352613	WO#3352843	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1044 ALTA VISTA RD	3/12/2021 6:07	3/12/2021 11:56	7,200	Sewer Manhole	27008	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352616	WO#3352842	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1011 ALTA CIR	3/12/2021 6:10	3/13/2021 10:33	33,600	Sewer Manhole	45796	DITCH	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352617	WO#352840	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3322 DELL RD	3/12/2021 7:58	3/12/2021 13:00	600	Sewer Manhole	28414	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352614	WO#3352847	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	3406 DELL RD	3/12/2021 8:00	3/12/2021 13:10	610	Sewer Manhole	28415	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352615	WO#3352848	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	2408 GRAY FOX RD	3/12/2021 8:57	3/12/2021 11:55	13,500	Sewer Manhole	27012	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352643	WO#3352841	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1544 CHERO-KEE RD	3/12/2021 9:22	3/12/2021 12:15	3,600	Sewer Manhole	40475	GROUND	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	3352662	WO#3352837	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	3317 DELL RD	3/12/2021 9:44	3/12/2021 13:18	488	Sewer Manhole	28413	GROUND	CHENOWETH RUN	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352647	WO#3352845	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	202 OX-MOOR LN	3/12/2021 10:06	3/13/2021 10:16	288,000	Sewer Manhole	47583	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3352660	WO#3352891	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	3/31/2021 3:15	3/31/2021 20:30	6,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN	LACK OF SYSTEM CAPACITY	3361348	NO CLEAN UP PERFORMED – PIPE DISCHARG-ING UNDERWA-TER, DIRECTLY INTO STREAM	LOCATION INCLUDED IN IOAP
MORRIS FORMAN	KY0022411	1726 FRA-SER DR	4/28/2021 16:30	4/28/2021 18:00	2,436	Sewer Manhole	16649	DITCH	SOUTH FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3370391	CLEAN UP NOT REQUIRED, UNDER GROUND PIPE IS DIS-CHARGING TO CREEK.	LOCATION INCLUDED IN THE IOAP.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	4/28/2021 18:10	4/30/2021 14:00	2,300,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3370393	NO CLEANUP REQUIRED DISCHARGE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY IN TO THE CREEK.	LOCATION INCLUDED IN THE IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	5/5/2021 1:45	5/5/2021 15:45	800,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3371557	NO CLEAN UP PERFORMED - PIPE DISCHARG-ING UNDERWA-TER, DIRECTLY INTO STREAM.	LOCATION INCLUDED IN IOAP.
MORRIS FORMAN	KY0022411	1201 OLD CANNONS LN	6/3/2021 13:45	6/3/2021 20:45	700,000	Sewer Manhole	IS021A-SI	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3387339	NO CLEANUP RE-QUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO CREEK.	LOCATION INCLUDED IN THE IOAP
MORRIS FORMAN	KY0022411	1001 BRECKEN-RIDGE LN	6/3/2021 15:00	6/3/2021 19:30	300,000	Sewer Manhole	08935-SM	STREAM	MIDDLE FORK BEARGRASS CREEK	LACK OF SYSTEM CAPACITY -- HEAVY RAIN.	LACK OF SYSTEM CAPACITY	3387338	NO CLEANUP RE-QUIRED, THE PIPE IS SUBMERGED AND DISCHARGES DIRECTLY TO CREEK.	LOCATION INCLUDED IN THE IOAP.

Appendix D Unauthorized Discharges - Dry Weather CSOs

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WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	2295 LEXINGTON RD	7/13/2020 21:30	7/14/2020 12:00	100,000	Sewer Manhole	CSO127	GROUND	MIDDLE FORK BEARGRASS CREEK	OBSTRUCTION IN THE MAINLINE DUE TO CONSTRUCTION ACTIVITIES BY CONTRACTORS.	OBSTRUCTION-NOT GREASE / ROOTS	3279408	UNABLE TO CLEAN IMPACTED AREA DUE TO THE SIZE OF THE CREEK AND DIFFICULTY ACCESSING DISCHARGE AREAS.	UKNOWN AT THIS TIME.
MORRIS FORMAN	KY0022411	2201 CROSS HILL RD	11/5/2020 23:45	11/6/2020 0:15	24,792	Sewer Manhole	CSO166	STREAM	MIDDLE FORK BEARGRASS CREEK	WATER MAIN BREAK AT CANNONS LANE.	UTILITY DAMAGED MSD ASSET	3313896	NONE REQUIRED. DISCHARGED INTO THE CREEK.	REPAIRS COMPLETED.
MORRIS FORMAN	KY0022411	147 BUCHANAN ST	3/21/2021 13:45	3/21/2021 15:21	1,200,000	Sewer Manhole	CSO020	STREAM	OHIO RIVER	FIRE AND POWER FAILURE AT TRANSFORMER.	POWER OUTAGE (LG&E)	3359754	MSD PERSONNEL WILL CLEAN AND SANITIZE IMPACTED AREAS IDENTIFIED.	POWER TRANSFERRED TO GENERATOR WHILE REPAIRS ARE MADE.
MORRIS FORMAN	KY0022411	200 W BROADWAY	5/17/2021 12:15	5/17/2021 13:15	2,657	Sewer Manhole	CSO035	GROUND	OHIO RIVER	CONTRACTOR WORKING TO REPAIR STRUCTURAL FAILURE. VACTOR DID NOT KEEP UP WITH FLOW.	STRUCTURAL FAILURE	3374867	NONE POSSIBLE - CENTRAL RELIEF DRAIN.	CONTRACTOR IS REPAIR FAILED LINE.
MORRIS FORMAN	KY0022411	914 E BROADWAY	5/21/2021 18:00	4/21/2021 18:15	236	Sewer Manhole	CSO118	STREAM	SOUTH FORK BEARGRASS CREEK	CONTRACTORS WORKING ON REMOVING THE TRAP WORK CART IN THE SANITARY LINE, AFTER THE CART WAS REMOVED THE SURGE OF FLOW BACK OVER THE DAM.	UTILITY DAMAGED MSD ASSET	3384105	NO CLEAN UP PERFORMED – PIPE DISCHARGING UNDERWATER, DIRECTLY INTO THE IMPROVED CHANNEL.	REPAIRS WILL BE MADE BY CONTRACTOR.

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Appendix E Unauthorized Discharges - Dry Weather SSOs

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SECOND AMENDED CONSENT DECREE
ANNUAL REPORT FY21
JULY 1, 2020 - JUNE 30, 2021

msd
Safe, clean waterways

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
FLOYDS FORK	KY0102784	611 WOODLAKE DR	7/16/2020 15:55	7/16/2020 16:00	250	Sewer Main	80581B-AG	STREAM	FLOYDS FORK	STRUCTURAL FAILURE, FORCE MAIN BREAK.	STRUCTURAL FAILURE	3279457	AREA DISINFECTED WITH LIME.	FORCE MAIN AND PUMP @ TAKEN OUT OF SERVICE.
FLOYDS FORK	KY0102784	611 WOODLAKE DR	7/27/2020 12:00	7/27/2020 13:10	2,000	Sewer Main	80581A-AG	GROUND	CHENOWETH RUN	STRUCTURAL FAILURE OF THE FORCE MAIN.	STRUCTURAL FAILURE	3284347	NONE AT THIS TIME.	CONTACTED CONTRACTOR TO CONDUCT REPAIRS ISOLATED #1 FORCEMAIN TO STOP FLOW.
HITE CREEK	KY0022420	169 CHARTER OAKS DR	9/11/2020 11:08	9/11/2020 11:18	100	Sewer Main	30931	GROUND	HITE CREEK	OBSTRUCTION IN THE LINE	OBSTRUCTION-NOT GREASE / ROOTS	3300250	UNDETERMINED BUT PLACED ONE DISCLEAN BY MSD MAY BE PRIVATE AFTER TV INSPECTION	CREW MADE REPAIRS
FLOYDS FORK	KY0102784	2410 S POPE LICK RD	10/14/2020 23:57	10/19/2020 10:53	10,000	Sewer Main	112307B-V	GROUND	POPE LICK	STRUCTURAL FAILURE OF MAIN SEWER.	STRUCTURAL FAILURE	3309911	NO CLEAN UP PERFORMED.	THE PUMPS WERE TURNED OFF.
HITE CREEK	KY0022420	6405 DEEP CREEK DR	10/16/2020 17:00	10/17/2020 9:45	15	Sewer Manhole	66918	GROUND	HARRODS CREEK	AN OBSTRUCTION IN MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	3310160	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	FLUSHED THE OBSTRUCTION FROM THE MAIN SEWER.
MORRIS FORMAN	KY0022411	9801 BUNSEN PKY	11/5/2020 9:22	11/5/2020 11:28	100	Sewer Manhole	46150	GROUND	CHENOWETH RUN	GREASE AND RAGS WERE IN THE SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	3313765	MSD WILL CLEAN AREA.	CLEANED MAIN SEWERS PLACED ONE DISCLEAN AND LOCATES ON TWO BURIED MANHOLES.
CEDAR CREEK	KY0098540	8708 PITCH PINE WAY	11/10/2020 12:19	11/10/2020 12:26	35	Sewer Manhole	107823	GROUND	FLOYDS FORK	ELECTRICAL ISSUE. PUMP CONTROLLER FAULTED NOT ALLOWING PUMPS TO START OR HWW ALARM TO BE SENT OUT.	ELECTRICAL PROBLEMS AT MSD	3314277	MSD CREW WASHED DOWN IMPACTED AREA IN STREET.	MANUALLY STARTED PUMPS TO STOP DISCHARGE.
MORRIS FORMAN	KY0022411	11339 OLDE SAGE CT	12/22/2020 15:12	12/22/2020 16:42	200	Sewer Manhole	00885	GROUND	MIDDLE FORK BEARGRASS CREEK	ROOTS AND GREASE AND WIPES CREATING BLOCKAGE.	GREASE BLOCKAGE	3330634	MSD CLEANED THE AREA.	WE PLACED TVI.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	2409 PLANTSIDE DR	1/6/2021 12:57	1/6/2021 13:33	250	Sewer Manhole	29341	STREAM	CHENOWETH RUN	OBSTRUCTION.	OBSTRUCTION-NOT GREASE / ROOTS	3334378	MSD CLEANED AREA.	MANHOLE REPAIR AND CLEANED.
CEDAR CREEK	KY0098540	3100 TUCKER STATION RD	1/11/2021 11:55	1/11/2021 19:55	24,000	Sewer Main	103399-V	GROUND	CHENOWETH RUN	CONTRACTOR DAMAGED MSD ASSET/ FORCEMAIN.	UTILITY DAMAGED MSD ASSET	3334945	MSD DISINFECTED AREA WITH LIME.	CALLED TRC TO REPAIR BREAK, HAULING DOMINION WAY AND TUCKERS LAKE PS.
CEDAR CREEK	KY0098540	11301 ELECTRON DR	2/5/2021 13:09	2/5/2021 11:40	300	Sewer Manhole	28506	DITCH	CHENOWETH RUN	DAMAGE IN MAIN.	OBSTRUCTION-NOT GREASE / ROOTS	3342474	MSD WILL CLEAN AREA.	PLACED TVI INSPECTION ON THE MAIN POSSIBLE FIBER OPTIC DAMAGE BORED THROUGH MAIN, FLUSHED MAIN AND MANHOLE
CEDAR CREEK	KY0098540	6810 ARBOR MANOR WAY	3/8/2021 23:30	3/9/2021 0:00	300	Sewer Lift Station	MSD1185-PS	DITCH	CEDAR CREEK	FAILURE IN ARV.	MECHANICAL FAILURE	3351847	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA.	VALVE WAS SHUT OFF.
FLOYDS FORK	KY0102784	17900 ELLERSLIE DR	4/2/2021 9:44	4/2/2021 10:04	800	Sewer Manhole	118639	CATCH BASIN	BRUSH RUN	CONTRACTOR PLUG IN MH# 117799 AT 2017 CARABINER WAY.	OBSTRUCTION-NOT GREASE / ROOTS	3361900	NO CLEAN REQUIRED -- NO SOLIDS.	FLUSHED MH# 111799 AT 2017 CARABINER NEXT STREET OVER PULLED OUT CONTRACTOR PLUG.
MORRIS FORMAN	KY0022411	4006 ST FRANCIS LN	4/7/2021 15:27	4/12/2021 13:24	200	Sewer Main	18710	GROUND	SOUTH FORK BEARGRASS CREEK	FURTHER INVESTIGATION REQUIRED, TVI PERFORMED.	OBSTRUCTION-NOT GREASE / ROOTS	3364148	NO CLEAN UP REQUIRED NO SOLIDS.	FLUSHED DROP INLET FROM MH# 30699 OPENED MAIN COULD NOT FLUSH PAST DROP TURNED OVER TO TVI INSPECTION.

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	SOURCE ASSET DISCHARGES TO	RECEIVING STREAM	CAUSE	DUE TO	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	901 MCKINLEY AVE	4/16/2021 11:15	4/16/2021 12:30	30	Sewer Service Line	084B00010000A	CATCH BASIN	SOUTH FORK BEARGRASS CREEK	OBSTRUCTION IN MSD'S MAIN SEWER.	OBSTRUCTION-NOT GREASE / ROOTS	3365584	MSD PERSONNEL WILL CLEAN IMPACTED AREA.	FLUSHED MAIN SEWER TO RESTORE FLOW/ REFERRED TO CREW FOR TV INSPECTION.
MORRIS FORMAN	KY0022411	7705 CIRCLE CREST RD	5/27/2021 11:18	5/27/2021 12:32	100	Sewer Manhole	46812	DITCH	GOOSE CREEK	OBSTRUCTION IN THE MAIN SEWER RAGS.	OBSTRUCTION-NOT GREASE / ROOTS	3384838	MSD WILL CLEAN AREA: WO#3384857.	ROOT CUT MAIN FROM MH# 43380 FLUSHED MAIN AS WELL.

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Appendix F Overflows to the Interior

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WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET ID	CAUSE	DUE TO	WEATHER	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	2215 STEEPLE-CHASE DR	8/14/2020 21:58	8/14/2020 22:00	40	182702040000A	ROOTS IN THE MAIN SEWER	ROOTS	WET WEATHER	3291293	UNDETER-MINED	ROOT CUT MAIN
MORRIS FORMAN	KY0022411	4215 BLENHEIM RD	8/18/2020 15:15	8/18/2020 15:17	1	MA14000029	UTILITY DAMAGED	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3292990	CUSTOMER CLEANED AREA	CREW DUG DOWN AND MADE REPAIRS
MORRIS FORMAN	KY0022411	941 BURNING SPRINGS CIR	9/3/2020 11:46	9/3/2020 11:47	1	MT09925029	ROOTS IN THE MAIN SEW-ER AND GREASE	ROOTS	WET WEATHER	3298958	UNDETER-MINED	ROOT CUT LINE
MORRIS FORMAN	KY0022411	943 BURNING SPRINGS CIR	9/3/2020 11:50	9/3/2020 11:52	1	MT09923059	ROOT OBSTRUCTION	ROOTS	WET WEATHER	3298963	UNDETER-MINED	ROOT CUT LINE
MORRIS FORMAN	KY0022411	1218 MORGAN AVE	9/25/2020 13:15	9/25/2020 14:15	1	KK13370259	UNKNOWN OBSTRUCTION IN MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3306244	CUSTOMER CLEANED IM-PACTED AREA	FLUSHED MAIN SEWER TO RESTORE FLOW
MORRIS FORMAN	KY0022411	529 S JACKSON ST	9/28/2020 14:50	9/28/2020 17:00	1	134961	OBSTRUCTION IN THE LINE	OBSTRUC-TION-NOT GREASE / ROOTS	WET WEATHER	3306499	UNKNOWN AT THIS TIME	FLUSHED LINE
DEREK R. GUTHRIE	KY0078956	7200 AP-PLEGATE LN	10/13/2020 16:40	10/13/2020 17:30	5	208900200000A	UNKNOWN OBSTRUCTION IN THE MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3309754	UNKNOWN AT THIS TIME	FLUSHED MAIN SEWER TO RESTORE FLOW
CEDAR CREEK	KY0098540	4505 ST CLAUDE CT	10/29/2020 16:50	10/29/2020 16:51	1	BE07743629	ROOTS IN THE PSC	ROOTS	WET WEATHER	3312902	CUSTOMER CLEANED AREA	CREW FLUSHED LINE
MORRIS FORMAN	KY0022411	5300 DAHL RD	10/29/2020 18:15	10/29/2020 19:00	1	PA11200029	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3312930	UNKNOWN AT THIS TIME	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
MORRIS FORMAN	KY0022411	924 JONES DR	10/29/2020 19:50	10/29/2020 20:10	1	062N01310000A	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3312939	CUSTOMER CLEANED IM-PACTED AREA	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
MORRIS FORMAN	KY0022411	7324 SOUTH-SIDE DR	10/29/2020 20:15	10/29/2020 20:45	1	Y12705019	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3312940	UNKNOWN AT THIS TIME	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
DEREK R. GUTHRIE	KY0078956	5005 FA-MOUS WAY	10/29/2020 21:00	10/29/2020 22:15	1	PC11265029	GREASE BLOCKAGE IN THE MAIN SEWER	GREASE BLOCKAGE	WET WEATHER	3312943	CUSTOMER CLEANED IM-PACTED AREA	FLUHSED MAIN SEWER TO RESTORE FLOW
DEREK R. GUTHRIE	KY0078956	3414 BURRELL DR	12/29/2020 11:35	12/29/2020 11:50	1	12540	MSD FLUSHED THE MAIN CAUSING A BACKUP	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3331409	MSD CLEANED AND SANITIZED THE IMPACTED AREA	REFERRED TO CLEAN CUSTOMERS BASE-MENT NEAR FLOOR DRAIN
MORRIS FORMAN	KY0022411	2907 KLONDIKE LN	12/31/2020 20:01	12/31/2020 20:04	1	091E01740000A	ROOTS IN THE MAIN	ROOTS	WET WEATHER	3333698	UNDETER-MINED POSSIBLE MSD CONTRACTOR	PLACED TVI
MORRIS FORMAN	KY0022411	3733 ROSE-MONT BLVD	1/25/2021 10:59	1/25/2021 11:00	1	055700830000A	ROOTS IN THE MAIN SEWER	ROOTS	WET WEATHER	3338146	UNDETER-MINED	ROOT CUT MAIN PLACED TVI INSPECTION
MORRIS FORMAN	KY0022411	2855 KLONDIKE LN	1/25/2021 14:10	1/25/2021 15:15	1	53073	SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3338307	CUSTOMER CLEANED IM-PACTED AREA	REFFERED TO TV DEPT

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET ID	CAUSE	DUE TO	WEATHER	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
HITE CREEK	KY0022420	5917 W STHY 22	1/29/2021 10:45	1/29/2021 11:35	1	130095917A	OBSTRUCTION IN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3339162	CUSTOMER CLEANED AREA	FLUSHED SEWER
MORRIS FORMAN	KY0022411	2630 PIN-DELL AVE	2/5/2021 8:44	2/5/2021 10:23	1	141794	ROOTS IN AMIN AT 110 FT	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3342432	CUSTOMER CLEANED THE IMPACTED AREA	FLUSHED THE ROOTS / DEBRIS FROM THE MAIN SEWER; REFERRED TO A CREW FOR A TV INSPECTION
MORRIS FORMAN	KY0022411	1109 CAR-DINAL DR	2/8/2021 13:40	2/8/2021 14:35	1	KK14416049	MAIN WAS STOPPED UP	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3342684	UNKNOWN AT THIS TIME	FLUSHED 8" SEWER MAIN
MORRIS FORMAN	KY0022411	9809 REYNOL-DA RD	2/12/2021 14:35	2/12/2021 15:13	1	MT10052029	OBSTRUCTION IN MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3343160	FURTHER INVESTIGATION IS REQUIRED	FLUSHED THE OB-STRUCTION FROM THE MAIN SEWER; FURTHER INVESTIGA-TION IS REQUIRED
DEREK R. GUTHRIE	KY0078956	6440 OUTER LOOP	2/17/2021 13:00	2/17/2021 15:30	1	PC10451019	OBSTRUCTION IN MSD'S MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3345122	CUSTOMER CLEANED IM-PACTED AREA	FLUSHED MAIN SEWER TO RESTORE FLOW
MORRIS FORMAN	KY0022411	7211 IVAN CT	2/28/2021 8:42	2/28/2021 9:03	1	062R00500000A	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3349802	CUSTOMER CLEANED THE IMPACTED AREA	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
DEREK R. GUTHRIE	KY0078956	7700 CHET LN	2/28/2021 9:27	2/28/2021 9:43	1	18021	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3349814	CUSTOMER CLEANED THE IMPACTED AREA	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
DEREK R. GUTHRIE	KY0078956	2707 RALPH AVE	2/28/2021 12:30	2/28/2021 12:58	1	100901020000A	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3349946	CUSTOMER CLEANED THE IMPACTED	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
DEREK R. GUTHRIE	KY0078956	2709 RALPH AVE	2/28/2021 12:30	2/28/2021 12:58	1	100901030000A	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3349927	CUSTOMER CLEANED IM-PACTED AREA	INVESTIGATION INDI-CATED THAT ADDITION-AL REPAIRS WERE NOT REQUIRED BY MSD
MORRIS FORMAN	KY0022411	321 FAIRME-ADE RD	3/1/2021 15:30	3/1/2021 16:30	50	197500370000A	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3350404	UNKNOWN AT THIS TIME	NO FURTHER ACTION REQUIRED
MORRIS FORMAN	KY0022411	220 RING RD	3/1/2021 18:25	3/1/2021 18:42	15	P5046	LACK OF SYSTEM CAPACITY	LACK OF SYS-TEM CAPACITY	WET WEATHER	3350460	CUSTOMER CLEANED THE IMPACTED AREA	NO FURTHER ACTION REQUIRED
DEREK R. GUTHRIE	KY0078956	4011 NEA-GLI CT	3/1/2021 18:45	3/1/2021 20:00	15	PD05292019	FURTHER INVESTIGATION REQUIRED	OBSTRUC-TION-NOT GREASE / ROOTS	WET WEATHER	3350487	UNKNOWN AT THIS TIME	FLUSHED MAIN SEWER TO RESTORE FLOW; REFERRED TO CREW FOR TV INSPECTION
DEREK R. GUTHRIE	KY0078956	10108 SQUIRE NEAGLI CT	3/1/2021 18:45	3/1/2021 20:00	1	167763	FURTHER INVESTIGATION REQUIRED	OBSTRUC-TION-NOT GREASE / ROOTS	WET WEATHER	3350497	UNKNOWN AT THIS TIME	FLUSHED MAIN SEWER TO RESTORE FLOW; REFERRED TO CREW FOR TV INSPECTION
MORRIS FORMAN	KY0022411	2614 GARDINER LN	3/1/2021 20:05	3/1/2021 20:33	20	43640	OBSTRUCTION IN THE MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3350500	CUSTOMER CLEANED THE IMPACTED AREA	FLUSHED TO GET OPEN; REFER TO FLUSH WORK ORDER; REFERRED TO TVI FOR FURTHER INVESTIGATION
MORRIS FORMAN	KY0022411	4326 ALI-CENT RD	3/2/2021 15:14	3/2/2021 15:16	80	1543	ROOTS IN THE MAIN	ROOTS	DRY WEATHER	3350772	MSD WILL CLEAN AREA	PLACED FULL CLEAN

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET ID	CAUSE	DUE TO	WEATHER	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	9451 WEST-PORT RD	3/12/2021 12:43	3/12/2021 12:46	1	HP10880039	FURTHER INVESTIGATION	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3352692	UNDETER-MINED	PLACED TVI INSPECTION
MORRIS FORMAN	KY0022411	9400 BROWNS-BORO RD	3/12/2021 15:13	3/12/2021 17:20	4	172841	GREASE BLOCKAGE IN MH# 87057 TRACED TO KROGER	GREASE BLOCKAGE	DRY WEATHER	3352756	CUSTOMER CLEANED AREA	CALLED IWD FLUSHED MAIN SEWER , WASHED DOWN MANHOLE
DEREK R. GUTHRIE	KY0078956	10620 W MANSLICK RD	3/16/2021 10:40	3/16/2021 10:42	2	AU13609029	BACKUP IN MSD'S MANHOLE	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3353228	CUSTOMER CLEANED AND SANITIZED THE IMPACTED AREA	FLUSHED MANHOLE TO OPEN
MORRIS FORMAN	KY0022411	6605 STRAW-BERRY LN	3/18/2021 19:00	3/18/2021 20:00	1	176114	GREASE BLOCKAGE IN THE MAIN SEWER	GREASE BLOCKAGE	WET WEATHER	3354780	CUSTOMER CLEANED IM-PACTED AREA	FLUSHED MAIN SEWER TO RESTORE FLOW
DEREK R. GUTHRIE	KY0078956	6025 LEWIS WAY	4/8/2021 10:05	4/8/2021 10:07	1	120206025A	GREASE IN MAIN SEWER	GREASE BLOCKAGE	DRY WEATHER	3364470	NO CLEANUP REQUIRED BY MSD	FLUSHED MAIN SEWER TO OPEN
DEREK R. GUTHRIE	KY0078956	6023 LEWIS WAY	4/8/2021 10:15	4/8/2021 10:17	1	120206023A	GREASE BLOCKAGE IN MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3364471	NO CLEANUP REQUIRED BY MSD	FLUSHED MAIN SEWER TO OPEN
DEREK R. GUTHRIE	KY0078956	6021 LEWIS WAY	4/8/2021 10:20	4/8/2021 10:22	1	120206021A	MAIN SEWER BACKUP WITH GREASE	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3364466	NO CLEANUP REQUIRED BY MSD	FLUSHED THE MAIN SEWER TO OPEN
DEREK R. GUTHRIE	KY0078956	9005 HUDSON LN	4/14/2021 12:10	4/14/2021 12:14	4	BE09000619	HEAVY PAPER IN MH# 55497	OBSTRUC-TION-NOT GREASE / ROOTS	WET WEATHER	3365252	CUSTOMER CLEANED AREA	FLUSHED MAIN SEW-ERS SEVERAL TIMES WASHED DOWN MAN-HOLE 55497 FLUSHED SLUDGE FROM MSD AND PRIVATE PORTION OF SERVICE LINE
MORRIS FORMAN	KY0022411	4101 HILLS-BORO RD	5/20/2021 13:58	5/20/2021 14:01	1	052200260000A	FURTHER INVESTIGATION	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3383698	UNDETER-MINED	PLACED TVI WORK OEDER
MORRIS FORMAN	KY0022411	653 PHIL-LIPS LN	5/26/2021 10:15	5/26/2021 11:45	1	083K00490000A	OBSTRUCTION IN MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3384706	CUSTOMER CLEANED UP DISCHARGE	FLUSHED MAIN SEWER
CEDAR CREEK	KY0098540	8709 TIM-BERLINE DR	5/27/2021 9:15	5/27/2021 10:00	1	BW0740842	FURTHER INVESTIGATION REQUIRED	OBSTRUC-TION-NOT GREASE / ROOTS	WET WEATHER	3384799	CUSTOMER CLEANED IM-PACTED AREA	REFERRED TO CREW FOR TV INSPECTION
MORRIS FORMAN	KY0022411	3901 KENNISON AVE	6/24/2021 14:20	6/24/2021 16:14	1	51909	ROOTS RAGS IN THE MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3395580	CUSTOMER CLEANED AREA	ROOT CUT MAIN SEWER
DEREK R. GUTHRIE	KY0078956	5821 WHISPER-ING HILLS BLVD	6/28/2021 13:20	6/28/2021 14:05	1	169552	ROOTS IN MAIN SEWER STUB	ROOTS	DRY WEATHER	3396285	CUSTOMER CLEANED IM-PACTED AREA	ROOT CUT STUB FROM M/H #29931 TO REMOVE ROOTS

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Appendix G Overflows to the Exterior

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WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	CAUSE	DUE TO	WEATHER	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	351 KENILWORTH RD	7/7/2020 12:30	7/7/2020 13:25	4	Sewer Manhole	110760	OBSTRUCTION IN THE LINE	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3276952	MSD WILL CLEAN AREA	VACTORED AND FLUSHED LINE
HITE CREEK	KY0022420	6205 RIVER RD	7/17/2020 14:30	7/17/2020 15:00	200	Sewer Main	41867I-CO	CONTRACTOR HIT FORCE MAIN WHILE HAND DIGGING	STRUCTURAL FAILURE	WET WEATHER	3279558	SPREAD LIME ACROSS AFFECTED AREA	REPAIRED FORCE MAIN
HITE CREEK	KY0022420	6205 RIVER RD	7/17/2020 18:15	7/17/2020 19:05	500	Sewer Main	41867I-CO	FORCE MAIN BROKEN BY CONTRACTOR	STRUCTURAL FAILURE	DRY WEATHER	3280186	MSD DISINFECTED AREA WITH LIME	MSD STAFF REPAIRED FORCE MAIN
MORRIS FORMAN	KY0022411	2400 TAVENER DR	7/19/2020 15:04	7/19/2020 15:58	6	Sewer Main	43337	ROOTS IN MAIN SEWER	ROOTS	DRY WEATHER	3280274	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA	FLUSHED THE OBSTRUCTION FROM THE SEWER
DEREK R. GUTHRIE	KY0078956	4700 STONY BROOK DR	7/20/2020 11:16	7/20/2020 11:19	30	Sewer Manhole	41640	GREASE AND ROOTS IN MAIN SEWER MOSTLY GREASE	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3280344	MSD WILL CLEAN AREA	PLACED TVI ON THE MAIN SEWER ROOT CUT FROM DOWNSTREAM MH# 41639
HITE CREEK	KY0022420	7300 SHADWELL LN	8/2/2020 13:57	8/2/2020 14:47	8	Sewer Main	66704	OBSTRUCTION IN MAIN SEWER	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3289345	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA	FLUSHED THE OBSTRUCTION FROM THE SEWER
MORRIS FORMAN	KY0022411	1665 TODD AVE	9/5/2020 10:25	9/5/2020 12:48	2	Sewer Main	13878	OBSTRUCTION IN MAIN SEWER	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3299516	FURTHER INVESTIGATION IS REQUIRED	FLUSHED/VACTORED THE OBSTRUCTION / DEBRIS FROM THE SEWER
FLOYDS FORK	KY0102784	611 WOODLAKE DR	9/22/2020 12:00	9/22/2020 12:15	5	Sewer Main	80581A-AG	MECHANICAL FAILURE OF FORCE MAIN	MECHANICAL FAILURE	DRY WEATHER	3302738	NONE AT THIS TIME	ISOLATED MAIN AND CALLED CONTRACTOR
DEREK R. GUTHRIE	KY0078956	3721 DIXIE HWY	10/6/2020 16:00	10/6/2020 16:05	20	Sewer Main	06940B-AG	STRUCTURAL FAILURE,-FORCEMAIN BREAK	STRUCTURAL FAILURE	DRY WEATHER	3307436	MSD PERSONNEL CLEANED AND SANITIZED THE IMPACTED AREA	REPAIRED FORCEMAIN
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	10/7/2020 3:00	10/14/2020 6:09	1	Sewer Treatment Plant	MSD0278	FOAM ON THE LID OF DIGESTER 1 SPILLED OVER THE SIDE AS THE SOLIDS LEVEL INCREASED DUE TO CENTRIFUGE THROUGHPUT	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3307489	HOSE INTO PLANT DRAINS	TRANSFERRED SOLIDS FROM DIGESTER 1 INTO OTHER DIGESTERS
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	10/8/2020 16:30	10/8/2020 18:00	100	Sewer Treatment Plant	MSD0278	CONTRACTOR ALLOWED OVERFLOW DURING CAKE PUMP STARTUP	PUMPED OVERFLOW	DRY WEATHER	3309192	MSD CREW HOSED AREA INTO PLANT DRAINS	CONTRACTOR STOPPED THE CAKE PUMP
MORRIS FORMAN	KY0022411	300 SHORT ST	10/9/2020 18:30	10/9/2020 19:30	1	Sewer Main	25004	OBSTRUCTION IN MAIN SEWAER	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3309187	MSD CLEANED IMPACTED AREA	ROOT CUT AND FLUSHED MAIN SEWER
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	10/14/2020 4:30	10/14/2020 6:00	50	Sewer Treatment Plant	MSD0278	DISCHARGE OF DIGESTER #1 PLUGGED	MECHANICAL FAILURE	DRY WEATHER	3309831	HOSED INTO PLANT DRAIN	STOPPED FEED TO DIGESTER #1, TRANSFER SLUDGE OUT OF DIGESTER #1
DEREK R. GUTHRIE	KY0078956	10703 DESHANE PL	10/15/2020 20:00	10/15/2020 20:30	1	Sewer Main	09712	OBSTRUCTION IN MAIN SEWER	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3310057	CUSTOMER CLEANED IMPACTED AREA	ROOT CUT MAIN

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	CAUSE	DUE TO	WEATHER	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
DEREK R. GUTHRIE	KY0078956	11621 LOWER RIVER RD	10/27/2020 7:00	10/27/2020 0:00	750	Sewer Treatment Plant	MSD0277	DRAINING GRIT CLARIFIER 2,3 AND 4. DRAINING ALL AT THE SAME TIME CAUSING DRAIN SYSTEM TO BE INUNDATED.	GREASE BLOCKAGE	DRY WEATHER	3312299	CONTRACTOR VACTORING UP AREA	CLOSED DRAIN VALVES
DEREK R. GUTHRIE	KY0078956	5406 E MANSLICK RD	10/29/2020 16:30	10/29/2020 18:00	20	Sewer Service Line	114055400	OBSTRUCTION IN MAIN SEWER	OBSTRUCTION-NOT GREASE / ROOTS	WET WEATHER	3312923	UNKNOWN AT THIS TIME	FLUSHED THE OBSTRUCTION FROM THE MAIN SEWER
MORRIS FORMAN	KY0022411	8900 RAINTREE DR	11/18/2020 13:29	11/18/2020 13:29	40	Sewer Manhole	21730	GREASE AND WIPES IN MAIN	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3316704	NO CLEAN REQUIRED	FLUSHED MAIN SEWER
DEREK R. GUTHRIE	KY0078956	3706 NOBEL CT	12/25/2020 17:45	12/25/2020 19:13	100	Sewer Lift Station	MSD0049-PS	STRUCTURAL FAILURE, FORCE MAIN BREAK	STRUCTURAL FAILURE	DRY WEATHER	3330845	CLEANED AND SANITIZED THE IMPACTED AREA	HAULED SEWAGE UNTIL REPAIR COULD BE MADE
DEREK R. GUTHRIE	KY0078956	3706 NOBEL CT	12/26/2020 13:00	12/26/2020 14:06	50	Sewer Lift Station	MSD0049-PS	FORCE MAIN BREAK	STRUCTURAL FAILURE	DRY WEATHER	3330847	CLEANED AND SANITIZED THE IMPACTED AREA	HAULED SEWAGE UNTIL REPAIRS MADE
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	1/14/2021 7:45	1/14/2021 14:30	50	Sewer Treatment Plant	MSD0278	HIGH LEVEL IN DIGESTER #4	MECHANICAL FAILURE	DRY WEATHER	3335332	HOSED BIOSOLIDS TO PLANT DRAIN	REPAIR TO FLARE
MORRIS FORMAN	KY0022411	4522 ALGONQUIN PKY	1/14/2021 9:00	1/14/2021 13:30	50	Sewer Treatment Plant	MSD0278	HIGH LEVEL IN DIGESTER #2	MECHANICAL FAILURE	DRY WEATHER	3335333	HOSED BIOSOLIDS TO PLANT DRAIN	REPAIR TO FLARE
CEDAR CREEK	KY0098540	8405 CEDAR CREEK RD	1/29/2021 0:00	1/29/2021 2:33	2	Sewer Treatment Plant	MSD0289	POWER WAS CUT AT SUMP PUMP CAUSING DISCHARGE	ELECTRICAL PROBLEMS AT MSD	DRY WEATHER	3339194	MSD STAFF CLEANING AND LIME AREA	ELECTRICIAN REWIRING CUT WIRES/ TEMP WIRED FOR TODAY
DEREK R. GUTHRIE	KY0078956	6113 RED SPRUCE DR	1/31/2021 15:32	1/31/2021 16:13	2	Sewer Main	25469	OBSTRUCTION IN MAIN SEWER	OBSTRUCTION-NOT GREASE / ROOTS	WET WEATHER	3339344	FURTHER INVESTIGATION IS REQUIRED	FLUSHED THE OBSTRUCTION / DEBRIS FROM THE SEWER; REFERRED TO A CREW FOR A TV INSPECTOIN
MORRIS FORMAN	KY0022411	3917 JENICA WAY	2/21/2021 15:30	2/21/2021 20:00	1	Sewer Service Line	138750	PRIVATE PROPERTY ISSUE	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3346090	MSD CLEANED IMPACTED AREA	ADVISED CUSTOMER TO CALL PLUMBER
MORRIS FORMAN	KY0022411	3409 CAMP GROUND RD	2/22/2021 12:35	2/22/2021 6:15	98750	Sewer Main	85220-V	STRUCTURAL FAILURE OF FORCEMAIN ON BELLS LANE PROPERTY	STRUCTURAL FAILURE	WET WEATHER	3346299	APPLIED LIME	PUMPS WERE TURNED OFF
MORRIS FORMAN	KY0022411	4520 SHELBYVILLE RD	3/1/2021 19:00	3/1/2021 19:26	1	Sewer Main	47033	LACK OF SYSTEM CAPACITY	LACK OF SYSTEM CAPACITY	WET WEATHER	3350478	NO CLEANUP REQUIRED	NO FURTHER ACTION REQUIRED
MORRIS FORMAN	KY0022411	352 PLAZA AVE	3/2/2021 17:28	3/2/2021 17:30	10	Sewer Service Line	83261	CAPACITY	LACK OF SYSTEM CAPACITY	WET WEATHER	3350809	MSD WILL CLEAN AREA	PLACED DISCLEAN AND COR
DEREK R. GUTHRIE	KY0078956	6110 RED SPRUCE DR	3/12/2021 15:45	3/12/2021 16:30	10	Sewer Manhole	25468	OBSTRUCTION IN MSD'S MAIN SEWER	OBSTRUCTION-NOT GREASE / ROOTS	WET WEATHER	3352754	MSD PERSONNEL CLEANED IMPACTED AREA	FLUSHED MAIN SEWER TO RESTORE FLOW
HITE CREEK	KY0022420	6120 CHAMBERLAIN LN	4/12/2021 13:30	4/12/2021 14:40	8	Sewer Main	102676-V	FURTHER INVESTIGATION	OBSTRUCTION-NOT GREASE / ROOTS	DRY WEATHER	3364940	MSD OPERATIONS WILL CLEAN AREA	TURNED OVER TO OPERATIONS FOR REPAIR ON AIR RELEASE VALVE

WQTC NAME	WQTC KPDES#	OVERFLOW LOCATION	START DATE & TIME	STOP DATE & TIME	VOLUME (GAL)	SOURCE ASSET TYPE	SOURCE ASSET ID	CAUSE	DUE TO	WEATHER	WO #	CLEANUP EFFORTS	REPAIR EFFORTS
MORRIS FORMAN	KY0022411	1310 SCHOLAR ST	4/23/2021 13:00	4/23/2021 13:30	5	Sewer Manhole	50806	GREASE BLOCKAGE IN MAIN SEWER	GREASE BLOCKAGE	DRY WEATHER	3367403	MSD PERSON-NEL CLEANED IMPACTED AREA	FLUSHED MAIN SEWER TO RE-STORE FLOW
FLOYDS FORK	KY0102784	603 WOOD-LAKE DR	4/25/2021 19:55	4/25/2021 22:00	1	Sewer Main	80377	NUMBER 2 MAIN WAS DISCHARGING	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3367490	MSD PERSON-NEL PLACED DISCHARGE SIGNS OUT AND DOOR CARD AND LIME	REFERRED FOR OPERATIONS TO COME OUT AND DO REPAIRS
MORRIS FORMAN	KY0022411	3033 CURRAN RD	4/28/2021 11:08	4/28/2021 10:58	10	Sewer Main	17568	FURTHER INVESTIGATION	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3370210	MSD CLEANED AREA	PLACED TVLIS AND TVI
MORRIS FORMAN	KY0022411	3520 COL-MAR DR	4/28/2021 17:30	4/28/2021 17:45	1	Sewer Main	04105	CONSTRUCTION ON MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	WET WEATHER	3370620	CUSTOMER ADVISED MSD THEY WOULD CLEAN IMPACT-ED AREA	CONSTRUCTION ON MAIN SEWER
MORRIS FORMAN	KY0022411	11440 BLANKEN-BAKER ACCESS DR	5/17/2021 11:23	5/17/2021 12:23	100	Sewer Service Line	182500	FURTHER INVESTIGATION	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3374812	UNDETER-MINED	PLACED TVI AND VACTORS FOR THE MAIN SEWER AND ONE DISCLEAN
MORRIS FORMAN	KY0022411	7703 CIRCLE CREST RD	5/27/2021 10:20	5/27/2021 12:51	10	Sewer Manhole	43378	OBSTRUCTION IN THE MAIN SEWER RAGS	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3384855	MSD WILL CLEAN AREA	ROOT CUT AND FLUSHED MAIN SEWER FROM MH 43380
DEREK R. GUTHRIE	KY0078956	3001 SPRING-FIELD DR	6/30/2021 14:05	6/30/2021 14:30	5	Sewer Manhole	33717	UNKNOWN OBSTRUCTION IN THE MAIN SEWER	OBSTRUC-TION-NOT GREASE / ROOTS	DRY WEATHER	3397212	MSD PERSON-NEL CLEANED IMPACTED AREA	FLUSHED MAIN SEWER TO RE-STORE FLOW

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Appendix H IOAP Crosswalk

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PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
17TH ST FPS DWO ELIMINATION	LTCP	MSD0306-FP	L_OR_MF_190_S_03_A_A
27TH STREET FPS DWO ELIM	LTCP	MSD0307-FP	L_OR_MF_019_S_03_A_A
34TH ST FPS DWO ELIMINATION	LTCP	MSD0308-FP	L_OR_MF_019_S_03_A_B
4TH STREET FPS DWO ELIMINATION	LTCP	CSO022	L_OR_MF_022_M_03_A_A
4TH STREET FPS DWO ELIMINATION	LTCP	MSD0303-FP	L_OR_MF_022_M_03_A_A
ADAMS STREET SEWER SEPARATION (FORMERLY STORAGE BASIN)	LTCP	CSO172	L_OR_MF_172_S_09B_B_A_0
ANCHOR ESTATES PS ELIMINATIONS 1 - VANNAH PUMP STATION ELIMINATION	SSDP	01106	S_MI_MF_NB06_M_01_A_A-2
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	SSDP	00056-W	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	SSDP	0057-W	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	SSDP	00746	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	SSDP	00817	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	SSDP	MSD0056-LS	S_MI_MF_NB06_M_01_A_A - 1
ANCHOR ESTATES PS ELIMINATIONS 2 - ANCHOR ESTATES #1 AND #2 PUMP STATION ELIMINATION	SSDP	MSD0057-LS	S_MI_MF_NB06_M_01_A_A - 1
ASHBURTON PS IMPROVEMENTS & DIVERSION	SSDP	MSD0165-PS	S_FF_FF_NB03_M_01_C_A
ASHBURTON PS IMPROVEMENTS & DIVERSION	SSDP	MSD0166-PS	S_FF_FF_NB03_M_01_C_A
AVANTI PS ELIMINATION	SSDP	21229	S_PO_WC_PC07_M_01_A
BARDSTOWN RD PS IMPROVEMENTS	SSDP	88545	S_CC_CC_MSD1025_S_03_B
BEARGRASS INTERCEPTOR REHABILITATION PH 2	SSDP	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
BELLS LANE (FORMERLY PADDY'S RUN) WET WEATHER TREATMENT FACILITY	LTCP	CSO015	L_OR_MF_015_M_13_B_B_8
BELLS LANE (FORMERLY PADDY'S RUN) WET WEATHER TREATMENT FACILITY	LTCP	CSO191	L_OR_MF_015_M_13_B_B_8
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	08717	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	104223	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	104224	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	104231	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	13931	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	13943	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	13946	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	34093542	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	36763	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	44396	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	44397	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	51301	S_SF_MF_30917_M_09_A

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	66349	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	99259	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	KK14815019	S_SF_MF_30917_M_09_A
CAMP TAYLOR SYSTEM IMPROVEMENT PHASE 1 - SSES	SSDP	KK14855239	S_SF_MF_30917_M_09_A
CAVEN AVENUE PS ELIMINATION	SSDP	17724	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	SSDP	27116	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	SSDP	61667	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	SSDP	61687	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	SSDP	70212	S_PO_WC_PC09_M_09B_C
CAVEN AVENUE PS ELIMINATION	SSDP	MSD0133-PS	S_PO_WC_PC09_M_09B_C
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO028	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO029	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO034	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO036	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO178	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO181	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO193	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO195	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO196	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO197	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO199	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO200X	L_OR_MF_155_M_09B_B_B_4-1
CENTRAL RELIEF DRAIN CSO IN-LINE STORAGE, GREEN INFRASTRUCTURE, AND DISTRIBUTED STORAGE	LTCP	CSO202	L_OR_MF_155_M_09B_B_B_4-1
CHARLESWOOD INTERCEPTOR EXTENSION	SSDP	25477	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	SSDP	25479	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	SSDP	25480	S_PO_WC_PC03_M_01_C
CHARLESWOOD INTERCEPTOR EXTENSION	SSDP	MSD0130-PS	S_PO_WC_PC03_M_01_C
CINDERELLA PS ELIMINATION	SSDP	102339	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	SSDP	35309	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	SSDP	60679	S_PO_WC_PC04_M_01_C
CINDERELLA PS ELIMINATION	SSDP	MSD1013-PS	S_PO_WC_PC04_M_01_C
CLIFTON HEIGHTS STORAGE BASIN	LTCP	CSO083	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	LTCP	CSO088	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	LTCP	CSO131	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	LTCP	CSO132	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	LTCP	CSO154	L_MU_MF_154_M_09B_B_A_8
CLIFTON HEIGHTS STORAGE BASIN	LTCP	CSO167	L_MU_MF_154_M_09B_B_A_8
CSO058 IN-LINE STORAGE & GREEN INFRASTRUCTURE	LTCP	CSO058	L_OR_MF_058_S_08_A_A_0

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
CSO093 STRUCTURAL MODIFICATIONS & GREEN INFRASTRUCTURE	LTCP	CSO093	L_SO_MF_093_S_08_A_A_0
CSO108 DAM MODIFICATION	LTCP	CSO108	L_SO_MF_108_S_09A_B_A_4
CSO140 IN-LINE STORAGE & GREEN INFRASTRUCTURE	LTCP	CSO140	L_MI_MF_140_S_08_A_A_0
CSO160 SEWER SEPARATION	LTCP	CSO160	L_OR_MF_160_S_08_A_A_0
CSO190 GREEN INFRASTRUCTURE (FORMERLY18TH & NORTHWESTERN PKWY STORAGE BASIN)	LTCP	CSO190	L_OR_MF_190_S_09B_B_A_8
CSO206 SEWER SEPARATION	LTCP	CSO206	L_MI_MF_206_S_08_A_A_0
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	104289	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28249	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28250	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28336	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28340	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28413	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28414	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28415	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28416	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28417	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28451	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28452	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28453	S_JT_JT_NB02_M_01_C
DELL RD/CHARLANE PKWY INTERCEPTOR IMPROVEMENTS	SSDP	28711	S_JT_JT_NB02_M_01_C
DEREK R GUTHRIE WQTC UPGRADES	ISSDP	1256312700A	DEREK R GUTHRIE WQTC UPGRADES
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 INVESTIGATION & REHABILITATION	SSDP	20154-W	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	SSDP	20155	S_OR_MF_NB03_S_07_C
DERINGTON CT PS I&I INVESTIGATION & REHABILITATION	SSDP	MSD0095-PS	S_OR_MF_NB03_S_07_C
EAST ROCKFORD PS RELOCATION	SSDP	04699-W	S_MC_WC_NB02_S_03_C
EDEN CARE PS SSO INVESTIGATION	SSDP	MSD1105-PS	S_FF_FF_NB02_S_13_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	SSDP	92098	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	SSDP	92099	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	SSDP	94009	S_PO_WC_PC11_M_07_C
EDSEL PS I&I INVESTIGATION & REHABILITATION	SSDP	MSD1048-PS	S_PO_WC_PC11_M_07_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	64096	S_JT_JT_NB01A_M_03_C

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	86052	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	92061	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	MSD0196-PS	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	MSD0263	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	MSD0263A-PS	S_JT_JT_NB01A_M_03_C
ELIMINATION OF CHENOWETH HILLS WQTC, CHENOWETH RUN PUMP STATION, AND CHIPPEWA PUMP STATION	SSDP	MSD1043-PS	S_JT_JT_NB01A_M_03_C
FAIRMOUNT RD PS IMPROVEMENTS	SSDP	116106	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	SSDP	81316	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	SSDP	97362	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	SSDP	97363	S_FF_CC_81316_M_03_C_A
FAIRMOUNT RD PS IMPROVEMENTS	SSDP	97365	S_FF_CC_81316_M_03_C_A
FAIRWAY VIEW PS IMPROVEMENTS	SSDP	MSD1065-PS	S_HC_HS_NB01_S_03_C_A
FLOYDSBURG RD I&I INVEST	SSDP	108953	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	SSDP	108956	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	SSDP	108957	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	SSDP	108958	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	SSDP	90776	S_HC_HC_MSD1086_M_07_C_A
FLOYDSBURG RD I&I INVEST	SSDP	MSD1086-PS	S_HC_HC_MSD1086_M_07_C_A
FOX HARBOR IN-LINE STORAGE	SSDP	62769	S_HC_HN_NB03_S_09A_A_A
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	105936	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	117721	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	43472	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	46891	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	62418	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	62420	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	91629	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	91630	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	MSD0040-PS	S_MI_MF_NB04_M_03_B-1
GOOSE CREEK PS IMPROVEMENTS AND WET WEATHER STORAGE 1 - DEVONDALE WET WEATHER STORAGE	SSDP	MSD1024-PS	S_MI_MF_NB04_M_03_B-1
GOVERNMENT CENTER PS ELIMINATION	SSDP	94541	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIMINATION	SSDP	94542	S_PO_WC_PC06_M_01_C
GOVERNMENT CENTER PS ELIMINATION	SSDP	MSD0180-PS	S_PO_WC_PC06_M_01_C
GUNPOWDER PS IN-LINE STORAGE	SSDP	MSD1055-LS	S_HC_HN_NB02_S_09A_C_B
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	SSDP	55665	S_MC_MF_55665_S_07_C
HAZELWOOD PS I&I INVESTIGATION & REHABILITATION	SSDP	55667	S_MC_MF_55665_S_07_C
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	17571	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18134	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18297	HIKES LN INTER & HIGHGATE SPR

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18298	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18299	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18302	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18318-W	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18370	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18434	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18471	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18483	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18505	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	18595	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	47960A	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	48885	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	48886	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	48888	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	49224	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	49236	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	49672	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	49673	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	73111	HIKES LN INTER & HIGHGATE SPR
HIKES LANE INTERCEPTOR & HIGHGATE SPRINGS PS	ISSDP	MSD0012-PS	HIKES LN INTER & HIGHGATE SPR
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	SSDP	01793	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	SSDP	47650	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	SSDP	47656	S_MI_MF_NB07_S_07_C
HURSTBOURNE I/I INVESTIGATION & REHABILITATION	SSDP	67535	S_MI_MF_NB07_S_07_C
IDLEWOOD IN-LINE STORAGE	SSDP	28984	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP	28985	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP	28998	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP	63094	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP	63095	S_CC_CC_70158_M_09A_C
IDLEWOOD IN-LINE STORAGE	SSDP	70158	S_CC_CC_70158_M_09A_C
JEFFERSONTOWN WQTC ELIMINATION	SSDP	28173	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	28390	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	28391	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	28392	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	28395	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	28551	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	31733	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	64505	S_JT_JT_NB01_M_01_C_A

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
JEFFERSONTOWN WQTC ELIMINATION	SSDP	IS028-SI	S_JT_JT_NB01_M_01_C_A
JEFFERSONTOWN WQTC ELIMINATION	SSDP	MSD0255	S_JT_JT_NB01_M_01_C_A
KAVANAUGH RD PS IMPROVEMENTS	SSDP	MSD1085-PS	S_HC_HC_MSD1085_S_03_A
KLONDIKE INTERCEPTOR	SSDP	20644	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	SSDP	25676	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	SSDP	26650	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	SSDP	26651	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	SSDP	49513	S_SD_MF_NB04_S_01_B_A
KLONDIKE INTERCEPTOR	SSDP	66232	S_SD_MF_NB04_S_01_B_A
LAKE FOREST PS SSO INVESTIGATION	SSDP	MSD1169-LS	S_FF_LF_NB01_S_13_C_A
LANTANA #1 PS I/I INVESTESTIGATION & REHABILITATION	SSDP	25484	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVESTESTIGATION & REHABILITATION	SSDP	93719	S_PO_WC_PC05_M_07_C
LANTANA #1 PS I/I INVESTESTIGATION & REHABILITATION	SSDP	MSD0101-PS	S_PO_WC_PC05_M_07_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	19360	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	19369	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	29933	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	29943	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	29948	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	29949	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	31073	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	31074	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	31083	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	31084	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	57874	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	61266	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	79076	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	MSD1010-PS	S_PO_WC_PC08_M_01_C
LEA ANN WAY SYSTEM IMPROVEMENT	SSDP	MSD1200-PS	S_PO_WC_PC08_M_01_C
LELAND RD SSO INVESTIGATION	SSDP	96020	S_OR_MF_NB02_S_13_C
LEVEN PS ELIMINATION	SSDP	36419	S_PO_WC_PC10_M_01_C
LEVEN PS ELIMINATION	SSDP	MSD1019-PS	S_PO_WC_PC10_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP	67997	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP	67999	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP	86423	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP	86424	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP	89196	S_CC_CC_67997_M_01_C
LITTLE CEDAR CREEK INTERCEPTOR IMPROVEMENTS	SSDP	89197	S_CC_CC_67997_M_01_C
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO091	L_SO_MF_092_M_09B_B_D_8

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO097	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO106	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO110	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO111	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO113	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO137	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO146	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO148	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO149	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO151	L_SO_MF_092_M_09B_B_D_8
LOGAN & BRECKINRIDGE ST STORAGE BASIN	LTCP	CSO152	L_SO_MF_092_M_09B_B_D_8
LUCAS LANE PS IN-LINE STORAGE	SSDP	MSD0199-LS	S_FF_BT_NB01_S_09A_C_A
MEADOW STREAM PS & FM UPGRADE	SSDP	91087	S_HC_HC_MSD1082_S_09A_C
MEADOW STREAM PS & FM UPGRADE	SSDP	MSD1082-PS	S_HC_HC_MSD1082_S_09A_C
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	24152-W	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	24472	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	26752	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	41374	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	41416	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	MSD0006-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	MSD0007-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	MSD0010-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	MSD0023-PS	S_OR_MF_NB01_M_01_B-1
MELLWOOD SYSTEM IMPROVEMENTS AND PS ELIMINATIONS 1 - MELLWOOD PS AND FM IMPROVEMENTS	SSDP	MSD0024-PS	S_OR_MF_NB01_M_01_B-1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	02932	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	02933	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	02935	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	08537	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	08935-SM	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	115183	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	115184	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	115185	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	15194	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	15195	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	17618	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	23211	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	23212	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	24553	S_MISF_MF_NB01_M_01_C_A1

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	27005	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	27007	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	27008	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	30376	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	40471	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	40471A	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	40471C	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	40559	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	43726	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	45796	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	45829	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	45835	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	45900	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47034	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47582	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47583	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47593	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47596	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47603	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	47604	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	48864	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	51160	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	51161	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	51180	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	51221	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	65070	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	72288	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	72289	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	74512	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	74513	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	74520	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	84155	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	90700	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	96672	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	96673	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 1 - BUECHEL BASIN	SSDP	IS021A-SI	S_MISF_MF_NB01_M_01_C_A1
MIDDLE FORK RELIEF INTERCEPTOR, WET WEATHER STORAGE AND UMFPS DIVERSION 2 - PS DIVERSION AND STORAGE	SSDP	27012	S_MISF_MF_NB01_M_01_C_A1-2

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
MONTICELLO PS ELIMINATION	SSDP	27969	S_JT_JT_NB04_M_01_A
MONTICELLO PS ELIMINATION	SSDP	MSD0151-PS	S_JT_JT_NB04_M_01_A
MORRIS FORMAN WQTC HEADWORKS (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	LTCP	CSO211	L_OR_MF_211_M_13_B_A_8_
NIGHTINGALE PS REPLACEMENT & STORAGE	LTCP	CSO018	L_SO_MF_018_S_03_A_A
NORTHERN DITCH DIVERSION INTERCEPTOR	ISSDP	MSD0271	NORTHERN DITCH DIVERSION INTER
PARKVIEW ESTATES I&I INVESTIGATION	SSDP	47250	S_SD_MF_NB03_S_07_C
PORTLAND CSO STORAGE BASIN	LTCP	CSO019	L_OR_MF_019_S_13_B_A_8
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	16455	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	22436	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	40870	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	40871	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	40872	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	40879	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	40880	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	42675	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	42680	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	46621	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	46623	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	46627	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	65606	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	65610	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	65623	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	65633	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	65635	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	89646	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	89791	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0123-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0183-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0186-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0192-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0193-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0291	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD0292	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD1044-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 1 - WQTC ELIMINATIONS	SSDP	MSD1063-PS	S_OR_MF_NB04_M_03_B_B-1
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	SSDP	117953	S_OR_MF_NB04_M_03_B_B-3
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	SSDP	117959	S_OR_MF_NB04_M_03_B_B-3
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	SSDP	89641	S_OR_MF_NB04_M_03_B_B-3

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
PROSPECT SYSTEM IMPROVEMENTS 3 - ORFM SYSTEM IMPROVEMENTS	SSDP	89790	S_OR_MF_NB04_M_03_B_B-3
RAINTREE DRIVE AND MARIAN COURT SYSTEM IMPROVEMENTS PHASE 1 - PUMP STATION ELIMINATION	SSDP	28729	S_JT_JT_NB03_M_01_C-1
RAINTREE DRIVE AND MARIAN COURT SYSTEM IMPROVEMENTS PHASE 1 - PUMP STATION ELIMINATION	SSDP	MSD0149-PS	S_JT_JT_NB03_M_01_C-1
RIDING RIDGE PS IMPROVEMENTS	SSDP	MSD1060-LS	S_HC_HN_NB01_S_03_C_A
RUNNING FOX PS ELIMINATION	SSDP	MSD1080-LS	S_CC_CC_MSD1080_S_01_C
SHAWNEE FPS DWO ELIMINATION	LTCP	MSD0309-FP	L_OR_MF_189_M_03_A_A
SHIVELY INTERCEPTOR	SSDP	04498	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	04542	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	81814-W	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	MSD0016-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	MSD0043-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	MSD0044-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	MSD0047-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	MSD0049-PS	S_MC_WC_NB01_M_01_A
SHIVELY INTERCEPTOR	SSDP	MSD0050-PS	S_MC_WC_NB01_M_01_A
SINKING FORK INTERCEPTOR	SSDP	21103	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	SSDP	25012	SINKING FORK RELIEF SEWER
SINKING FORK INTERCEPTOR	SSDP	63319	SINKING FORK RELIEF SEWER
SONNE PS I&I INVESTIGATION & REHABILITATION	SSDP	MSD0042-PS	S_OR_MF_42007_S_07_C
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	08426	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	08427	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	08429	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	08430	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	08431	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	18654	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	30680	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	30681	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	30701	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	30702	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	30704	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	49647	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	63779	SOUTHEASTERN DIVERSION STRUCT
SOUTHEASTERN DIVERSION STRUCTURE & INTERCEPTOR	SSDP	72571-X	SOUTHEASTERN DIVERSION STRUCT
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD STREET (SOR1) (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	LTCP	CSO016	L_OR_MF_211_M_13_B_A_8__
SOUTHERN OUTFALL IN-LINE STORAGE AT 43RD STREET (SOR1) (FORMERLY ALGONQUIN PKWY STORAGE BASIN)	LTCP	CSO210	L_OR_MF_211_M_13_B_A_8__
SOUTHWESTERN PKWY CSO BASIN	LTCP	CSO104	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKWY CSO BASIN	LTCP	CSO105	L_OR_MF_105_M_13_B_A_0
SOUTHWESTERN PKWY CSO BASIN	LTCP	CSO189X	L_OR_MF_105_M_13_B_A_0

PROJECT NAME	PROGRAM	ASSET ID	PROJECT ID
ST RENE RD PS IN-LINE STORAGE	SSDP	94187	S_FF_CH_NB01_S_09A_C_A
SUTHERLAND INTERCEPTOR	SSDP	16649	S_SD_MF_NB05_M_01_A
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO023	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO050	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO051	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO052	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO053	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO054	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO055	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO056	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO150	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY 13TH ST/ROWAN ST STORAGE BASIN)	LTCP	CSO155	L_OR_MF_155_M_09B_B_B_4
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	LTCP	CSO125	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	LTCP	CSO126	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	LTCP	CSO127	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY I-64 & GRINSTEAD DRIVE CSO BASIN)	LTCP	CSO166	L_MI_MF_127_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO082	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO084	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO118	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO119	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO120	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO121	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO141	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY LEXINGTON RD & PAYNE ST STORAGE BASIN)	LTCP	CSO153	L_SO_MF_083_M_09B_B_A_8
WATERWAY PROTECTION TUNNEL (FORMERLY STORY & MAIN ST STORAGE BASIN)	LTCP	CSO020	L_OR_MF_020_S_09B_B_A_8
WOODLAND HILLS PS DIVERSION	SSDP	33003	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	SSDP	65516	S_FF_FF_NB01_S_01_C_A
WOODLAND HILLS PS DIVERSION	SSDP	65531	S_FF_FF_NB01_S_01_C_A

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Appendix I Wet Weather Storage in the Morris Forman Sewer System via RTC

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EVENT NUMBER	START DATE	END DATE	DURATION (H:MIN)	AVG TRFD (IN)	MAX TRFD (IN)	MAX RAIN GAUGE	TOTAL (MG)	HIGH RIVER LEVELS	DESCRIPTION
2020-049	6/29/2020 3:15	7/3/2020 4:55	97:40	1.89	4.09	TR15	232.63	No	Very large wet weather event homogeneously distributed across the collection system.
2020-050	7/5/2020 17:00	7/6/2020 18:05	25:05	0.52	1.04	TR12	76.76	No	Moderate wet weather event homogeneously distributed across the collection system.
2020-051	7/6/2020 18:05	7/7/2020 16:10	22:05	0.2	0.46	TR11	18.05	No	Small wet weather event heterogeneously distributed across the collection system. CSO 104/105 was not active.
2020-052	7/7/2020 16:10	7/9/2020 16:45	48:35	0.24	0.65	TR14	40.77	No	Small wet weather event heterogeneously distributed across the collection system. CSO 015/191 was not active.
2020-054	7/11/2020 20:30	7/15/2020 11:10	86:40	0.56	0.89	TR04	72.25	No	Moderate wet weather event heterogeneously distributed across the collection system. The “Weather Observation” panel is showing a total depth of 4.8 in, due to TR30 rain gauge. The associated Imax are over 200 Years of frequency. However, after analysis of the weather radar system, these measurements seems good. The RTC system did not responded as much because this rain gauge is located outside its watershed area.
2020-055	7/17/2020 10:40	7/17/2020 20:40	10:00	0.19	0.64	TR14	14.00	No	Small wet weather event homogeneously distributed across the collection system.
2020-056	7/20/2020 15:00	7/21/2020 7:00	16:00	0.38	1	TR15	68.36	No	Moderate wet weather event homogeneously distributed across the collection system.
2020-057	7/21/2020 22:35	7/25/2020 11:45	85:10	0.85	1.85	TR05	128.76	No	Large wet weather event homogeneously distributed across the collection system.
2020-061	7/30/2020 9:05	8/3/2020 16:20	103:15	3.29	4.15	TR13	408.54	No	Very Large wet weather event homogeneously distributed across the collection system.
2020-062	8/3/2020 16:20	8/4/2020 1:25	9:05	0.02	0.03	TR11	12.08	No	Very small wet weather event heterogeneously distributed across the collection system.
2020-064	8/13/2020 13:05	8/15/2020 9:45	44:40	1.06	2.58	TR11	260.99	No	Large wet weather event heterogeneously distributed across the collection system. Problem with SOBA Basin filling, both gates G5 and G6 did not open as expected to fill the basin. The MSD took manual control of the site to fill the basin. At SWSG site, the gates G1 and G3 oscillated between slightly opened and closed positions. It might be link to the level meter LE4 which measured a sudden level peak and it triggered the rate-of-rise condition.
2020-066	8/21/2020 15:10	8/23/2020 3:35	36:25	0.54	0.63	TR12	123.50	No	Moderate wet weather event heterogeneously distributed across the collection system.
2020-067	8/23/2020 16:50	8/24/2020 8:35	15:45	0.11	0.23	TR05	18.68	No	Very small wet weather event heterogeneously distributed across the collection system.
2020-069	8/31/2020 1:30	9/2/2020 4:10	50:40	0.11	0.22	TR15	41.18	No	Very small wet weather event heterogeneously distributed across the collection system.
2020-070	9/2/2020 4:10	9/3/2020 3:15	23:05	0.55	0.65	TR15	71.58	No	Moderate wet weather event homogeneously distributed across the collection system.
2020-071	9/3/2020 3:15	9/5/2020 19:10	63:55	1.62	2.03	TR11	310.03	No	Very large wet weather event homogeneously distributed across the collection system. Problem with SOBA basin filling. Even if the SOBA basin was in GOP, gates controlling inflows to the basin junction structure (G4 and G87) remained closed and as a result did not fill the basin during the event.
2020-073	9/28/2020 11:50	9/28/2020 23:10	11:20	0.23	0.29	TR04	10.60	No	Very small wet weather event homogeneously distributed across the collection system.

EVENT NUMBER	START DATE	END DATE	DURATION (H:MIN)	AVG TRFD (IN)	MAX TRFD (IN)	MAX RAIN GAUGE	TOTAL (MG)	HIGH RIVER LEVELS	DESCRIPTION
2020-077	10/18/2020 23:35	10/21/2020 11:35	60:00	1.4	1.88	TR15	197.14	No	Very large wet weather event homogeneously distributed across the collection system. Problem with SOBA basin filling. Even if the SOBA basin was in GOP, gates controlling inflows to the basin junction structure (G4 and G87) remained closed and as a result did not fill the basin during the event.
2020-078	10/21/2020 11:35	10/23/2020 13:25	49:50	0.02	0.02	TR14	36.96	No	Small wet weather event heterogeneously distributed across the collection system.
2020-079	10/23/2020 13:25	10/29/2020 2:50	133:25	1.34	2.23	TR14	104.34	No	Moderate wet weather event homogeneously distributed across the collection system. Problem with SOBA basin filling. Even if the SOBA basin was in GOP, gates controlling inflows to the basin junction structure (G4 and G87) remained closed and as a result did not fill the basin during the event.
2020-080	10/29/2020 2:50	11/2/2020 21:00	115:10	1.79	3.96	TR04	394.43	No	Very large wet weather event heterogeneously distributed across the collection system. SOBA basin filled, as SG4 and SG87 opened during the event, although they did not open as soon as the control level at each diversion structures reached 431ft because the Basin_mode was = 4 (WW flush). Also, the site operating mode should have changed to 60 because both flowmeters FIT-820 and FIT-830 are invalid.
2020-083	11/15/2020 2:55	11/15/2020 17:10	14:15	0.51	0.72	TR11	39.42	No	Moderate wet weather event homogeneously distributed across the collection system. SOBA : Same as noted for 2020-080 event, which is that at the beginning of the event, the basin_mode = 4 (WW flush) and it is preventing gates SG4 and SG87 to open and fill basin as soon as the control levels in diversion structures are reached. Also, the site operating mode should had changed to 60 because both flowmeters FIT-820 and FIT-830 are invalid. It also seems that because of the FIT-820 invalidity and constant measured value, SG3 is always opened to 100% and do not control and maintain the sent setpoint. Although, SG7 seems to control and maintain the sent setpoint despite the FIT-830 invalidity.
2020-085	11/25/2020 2:35	11/27/2020 3:10	48:35	0.84	1	TR04	88.73	No	Moderate wet weather event homogeneously distributed across the collection system. SOBA : Same issue as during event 2020-083.
2020-086	11/29/2020 21:20	11/30/2020 21:30	24:10	0.69	0.84	TR11	27.80	No	Moderate wet weather event homogeneously distributed across the collection system. SOBA : Same issue as during event 2020-083.
2020-089	12/16/2020 4:10	12/16/2020 18:05	13:55	0.3	0.36	TR14	11.71	No	Small wet weather event homogeneously distributed across the collection system.
2020-091	12/23/2020 21:15	12/24/2020 10:00	12:45	0.31	0.38	TR11	18.54	No	Small wet weather event homogeneously distributed across the collection system.
2020-092	12/30/2020 11:40	1/1/2021 3:05	39:25	1.33	1.46	TR11	222.20	No	Large wet weather event homogeneously distributed across the collection system. Clifton, Logan and Sneads Branch dewatered after this event ending.
2021-001	1/1/2021 3:05	1/8/2021 14:30	179:25	1.02	1.1	TR15	371.55	Yes	Large wet weather event heterogeneously distributed across the collection system.
2021-002	1/8/2021 14:30	1/12/2021 15:50	97:20	0.02	0.03	TR04	67.77	No	No rain, but the RTC system was falsly kept in WET control due to a faulty level sensor at MDS-ORI (MDS-L7-LVL). No CSO volume saved.
2021-008	1/25/2021 6:35	1/28/2021 21:15	86:40	1.51	1.62	TR11	324.00	No	Large wet weather event homogeneously distributed across the collection system.
2021-011	1/30/2021 12:35	2/1/2021 4:50	40:15	0.61	0.73	TR13	64.31	No	Moderate wet weather event homogeneously distributed across the collection system. MDS-ORI saved volume wrong calculation, due to MDS-L7-LVL that should have been invalid.
2021-013	2/4/2021 14:15	2/5/2021 9:30	19:15	0.34	0.4	TR04	30.45	No	Small wet weather event homogeneously distributed across the collection system.
2021-019	2/27/2021 22:05	3/10/2021 5:40	247:35	3.08	3.33	TR15	555.25	Yes	Very large wet weather event homogeneously distributed across the collection system.
2021-020	3/11/2021 18:30	3/15/2021 12:40	89:10	1.37	1.75	TR11	348.11	No	Large wet weather event homogeneously distributed across the collection system. SOBA : SOBA_NWI_FIT830_SUR sensor malfunction made the site to switch to degraded operating mode which prevented the basin from normal dewatering.
2021-021	3/15/2021 12:40	3/16/2021 22:50	34:10	0.27	0.41	TR04	60.22	No	Small wet weather event homogeneously distributed across the collection system. SOBA : SOBA_NWI_FIT830_SUR sensor malfunction made the site to switch to degraded operating mode which prevented the basin from filling normally.

EVENT NUMBER	START DATE	END DATE	DURATION (H:MIN)	AVG TRFD (IN)	MAX TRFD (IN)	MAX RAIN GAUGE	TOTAL (MG)	HIGH RIVER LEVELS	DESCRIPTION
2021-022	3/16/2021 22:50	3/20/2021 1:35	74:45	0.57	1.19	TR04	60.36	No	Moderate wet weather event heterogeneously distributed across the collection system. SOBA : SOBA_NWI_FIT830_SUR sensor malfunction made the site to switch to degraded operating mode which prevented the basin from filling normally.
2021-023	3/25/2021 10:05	3/26/2021 7:10	21:05	0.54	0.64	TR11	68.60	No	Small wet weather event homogeneously distributed across the collection system.
2021-025	3/30/2021 21:55	4/1/2021 11:05	37:10	0.92	1.13	TR14	187.92	No	Large wet weather event homogeneously distributed across the collection system.
2021-027	4/7/2021 17:55	4/10/2021 9:45	63:50	0.47	0.92	TR04	92.10	No	Moderate wet weather event heterogeneously distributed across the collection system.
2021-028	4/10/2021 9:45	4/11/2021 14:10	28:25	0.61	0.94	TR12	45.66	No	Moderate wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-029	4/11/2021 14:10	4/12/2021 20:10	30:00	0.13	0.18	TR04	2.70	No	Small wet weather event homogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-031	4/20/2021 21:20	4/22/2021 1:00	27:40	0.28	0.42	TR11	3.80	No	Small wet weather event homogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-032	4/24/2021 12:20	4/25/2021 6:00	17:40	0.28	0.35	TR04	4.23	No	Small wet weather event homogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-033	4/28/2021 15:25	5/2/2021 15:15	95:50	1.39	1.8	TR13	189.13	No	Large wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-034	5/2/2021 23:30	5/3/2021 18:45	19:15	0.4	0.85	TR15	24.60	No	Moderate wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-035	5/4/2021 6:15	5/6/2021 17:05	58:50	0.99	1.52	TR14	135.12	No	Large wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-037	5/9/2021 10:30	5/9/2021 22:10	11:40	0.31	0.38	TR11	16.62	No	Small wet weather event homogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-039	5/26/2021 11:00	5/27/2021 15:55	28:55	0.75	1.02	TR14	61.86	No	Moderate wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-040	5/27/2021 15:55	5/30/2021 20:20	76:25	0.18	0.58	TR05	7.42	No	Small wet weather event homogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-041	6/1/2021 17:30	6/5/2021 10:45	89:15	1.63	2.59	TR11	188.12	No	Very large wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-042	6/6/2021 6:45	6/9/2021 8:55	74:10	0.86	1.06	TR11	61.35	No	Large wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
2021-045	6/11/2021 11:50	6/12/2021 2:20	14:30	0.1	0.15	TR13	2.30	No	Small wet weather event heterogeneously distributed across the collection system. SOBA was in operating mode 60 (Degraded, sensor failure) due to the FIT-830 sensor replacement which prevented the basin from filling during the event.
Total							6,023.58		52

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Appendix J Morris Forman Plant Flows and Associated CSO Activations

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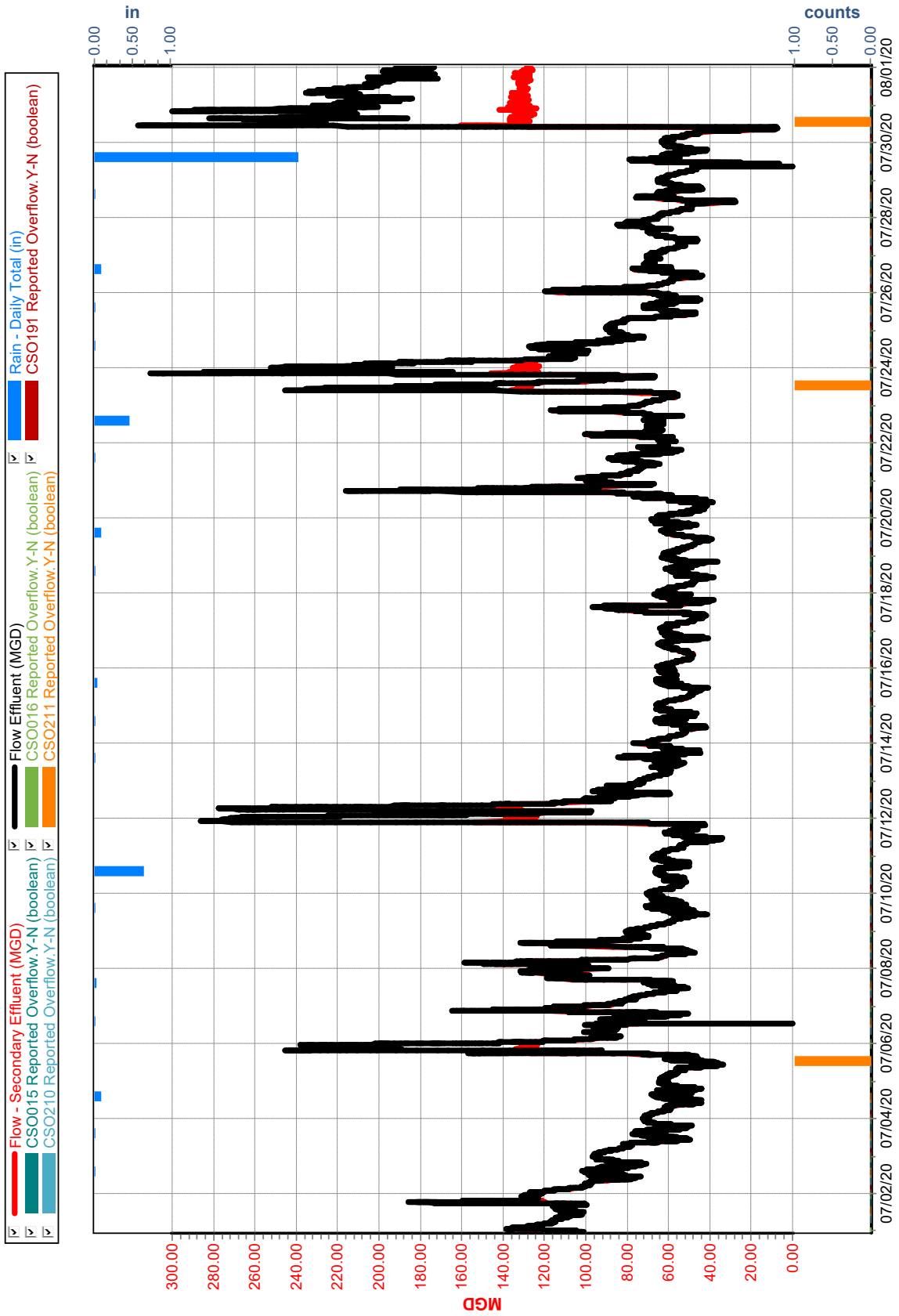
Flow - Secondary Effluent (MGD)
CSO015 Reported Overflow.Y-N (boolean)
CSO210 Reported Overflow.Y-N (boolean)
Flow Effluent (MGD)
CSO016 Reported Overflow.Y-N (boolean)
CSO211 Reported Overflow.Y-N (boolean)
Rain - Daily Total (in)
CSO191 Reported Overflow.Y-N (boolean)
in
counts
MGD
0.00
0.50
1.00
300.00
280.00
260.00
240.00
220.00
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
07/02/20
07/04/20
07/06/20
07/08/20
07/10/20
07/12/20
07/14/20
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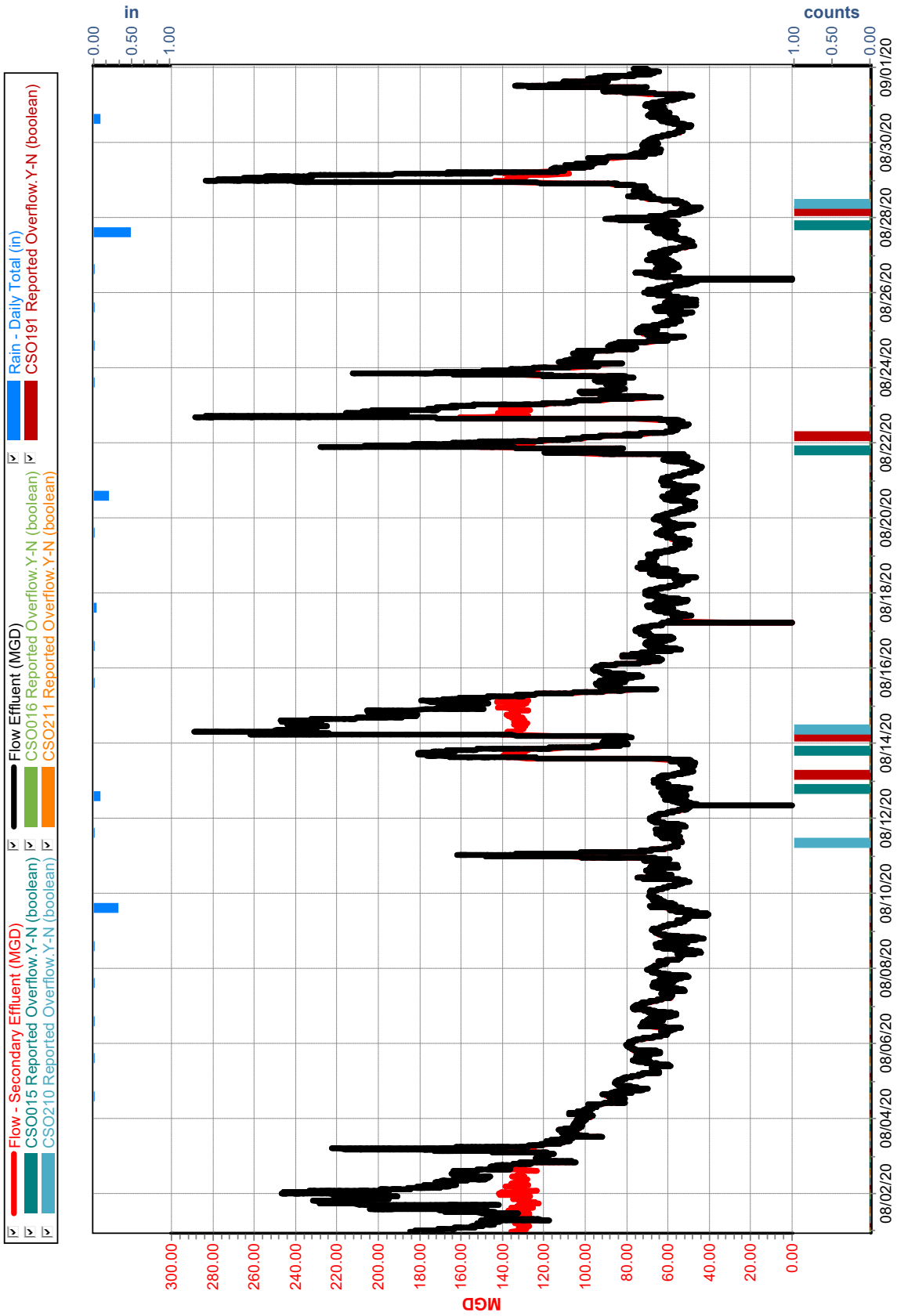
08/01/20


Flow - Secondary Effluent (MGD)
CSO015 Reported Overflow.Y-N (boolean)
CSO210 Reported Overflow.Y-N (boolean)
Flow Effluent (MGD)
CSO016 Reported Overflow.Y-N (boolean)
CSO211 Reported Overflow.Y-N (boolean)
Rain - Daily Total (in)
CSO191 Reported Overflow.Y-N (boolean)
in
counts
MGD
0.00
0.50
1.00
300.00
280.00
260.00
240.00
220.00
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
08/02/20
08/04/20
08/06/20
08/08/20
08/10/20
08/12/20
08/14/20
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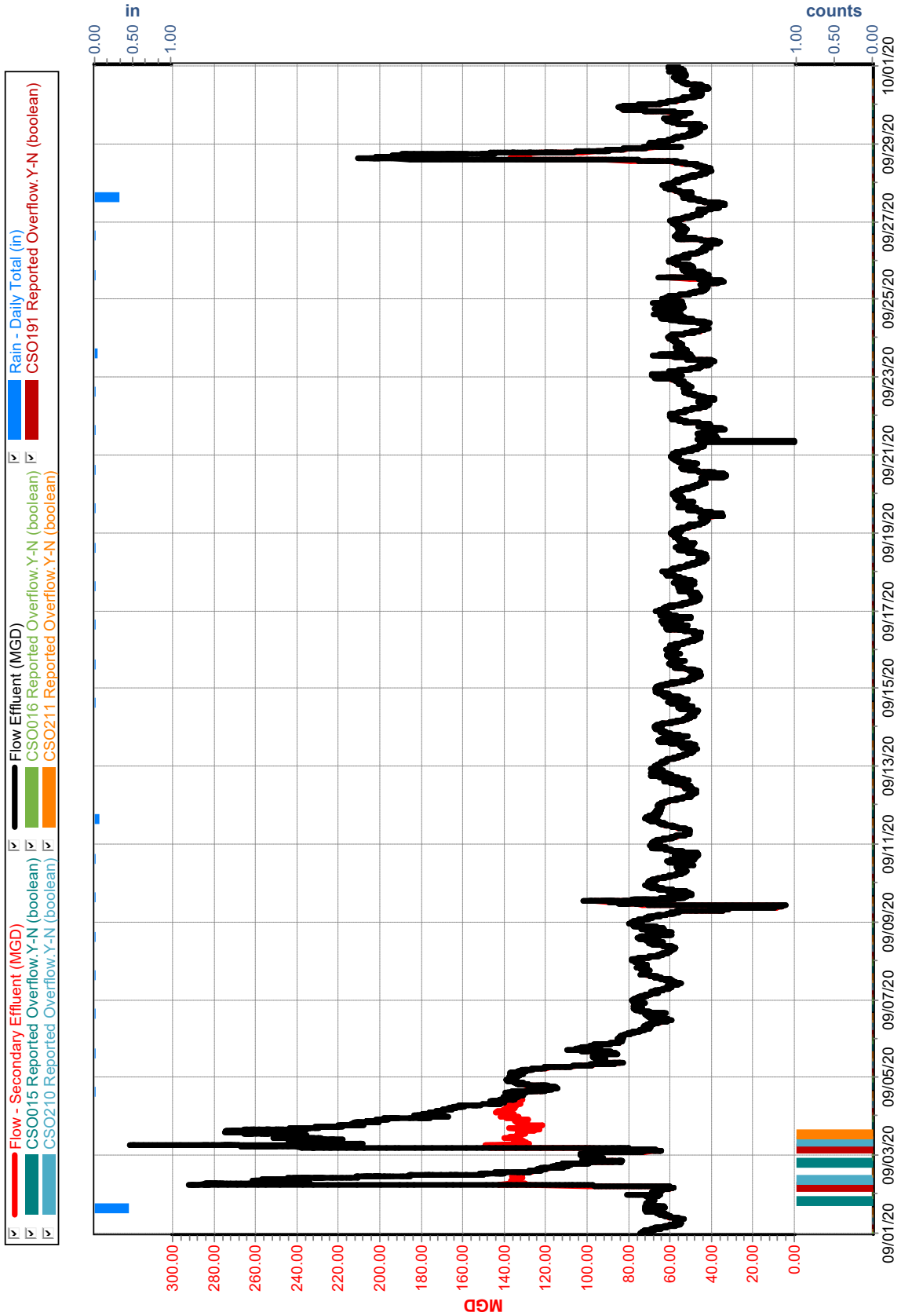
08/30/20
09/01/20


Flow - Secondary Effluent (MGD)
CSO015 Reported Overflow.Y-N (boolean)
CSO210 Reported Overflow.Y-N (boolean)
Flow Effluent (MGD)
CSO016 Reported Overflow.Y-N (boolean)
CSO211 Reported Overflow.Y-N (boolean)
Rain - Daily Total (in)
CSO191 Reported Overflow.Y-N (boolean)
in
counts
MGD
0.00
0.50
1.00
300.00
280.00
260.00
240.00
220.00
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
09/01/20
09/03/20
09/05/20
09/07/20
09/09/20
09/11/20
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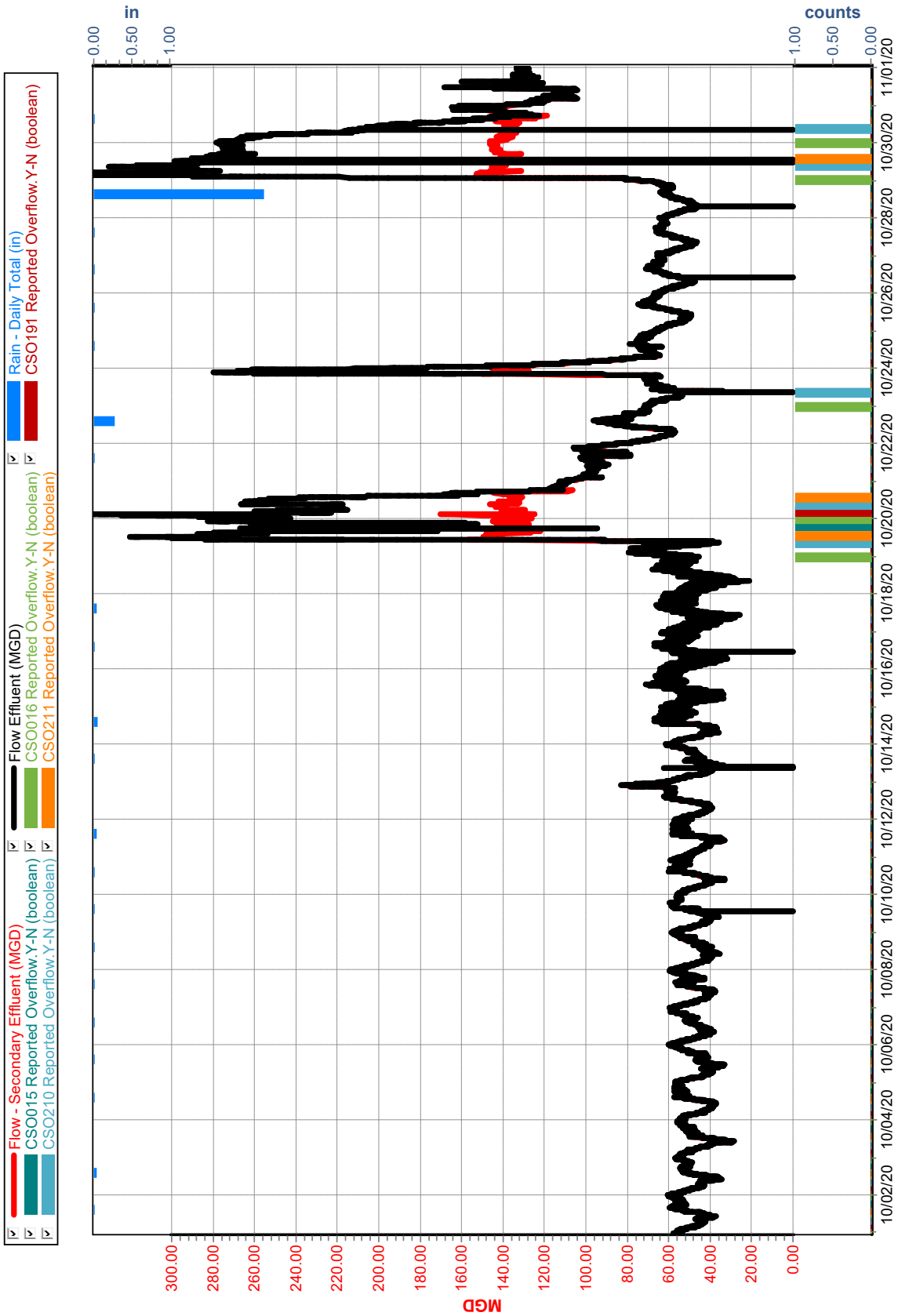
10/01/20


Flow - Secondary Effluent (MGD)
CSO015 Reported Overflow.Y-N (boolean)
CSO210 Reported Overflow.Y-N (boolean)
Flow Effluent (MGD)
CSO016 Reported Overflow.Y-N (boolean)
CSO211 Reported Overflow.Y-N (boolean)
Rain - Daily Total (in)
CSO191 Reported Overflow.Y-N (boolean)
in
counts
MGD
300.00
280.00
260.00
240.00
220.00
200.00
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
0.00
0.50
1.00
10/02/20
10/04/20
10/06/20
10/08/20
10/10/20
10/12/20
10/14/20
10/16/20
10/18/20
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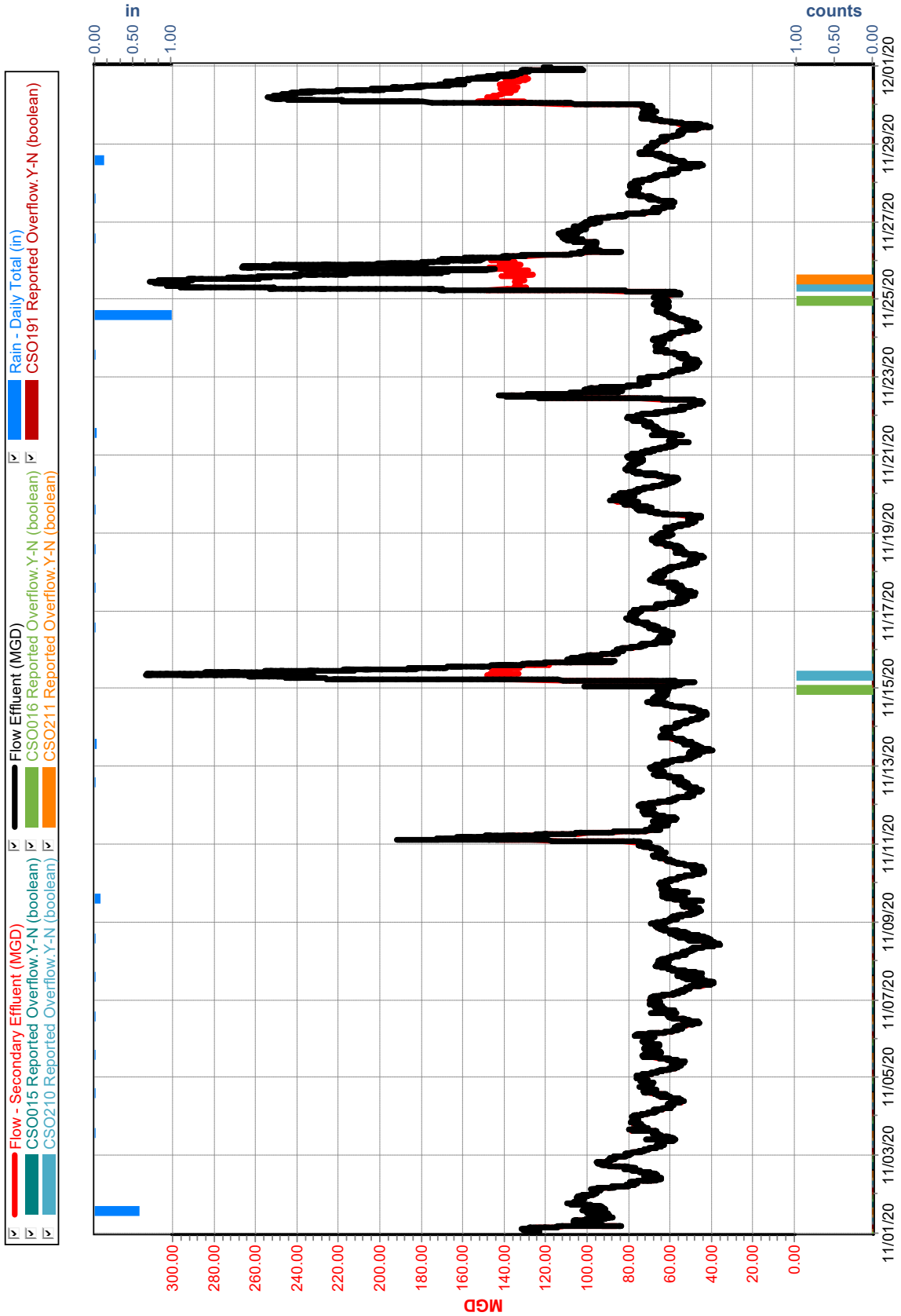
10/30/20
11/01/20


Flow - Secondary Effluent (MGD)
CSO015 Reported Overflow.Y-N (boolean)
CSO210 Reported Overflow.Y-N (boolean)
Flow Effluent (MGD)
CSO016 Reported Overflow.Y-N (boolean)
CSO211 Reported Overflow.Y-N (boolean)
Rain - Daily Total (in)
CSO191 Reported Overflow.Y-N (boolean)
in
0.00
0.50
1.00
counts
1.00
0.50
0.00
MGD
300.00
280.00
260.00
240.00
220.00
200.00
180.00
160.00
140.00
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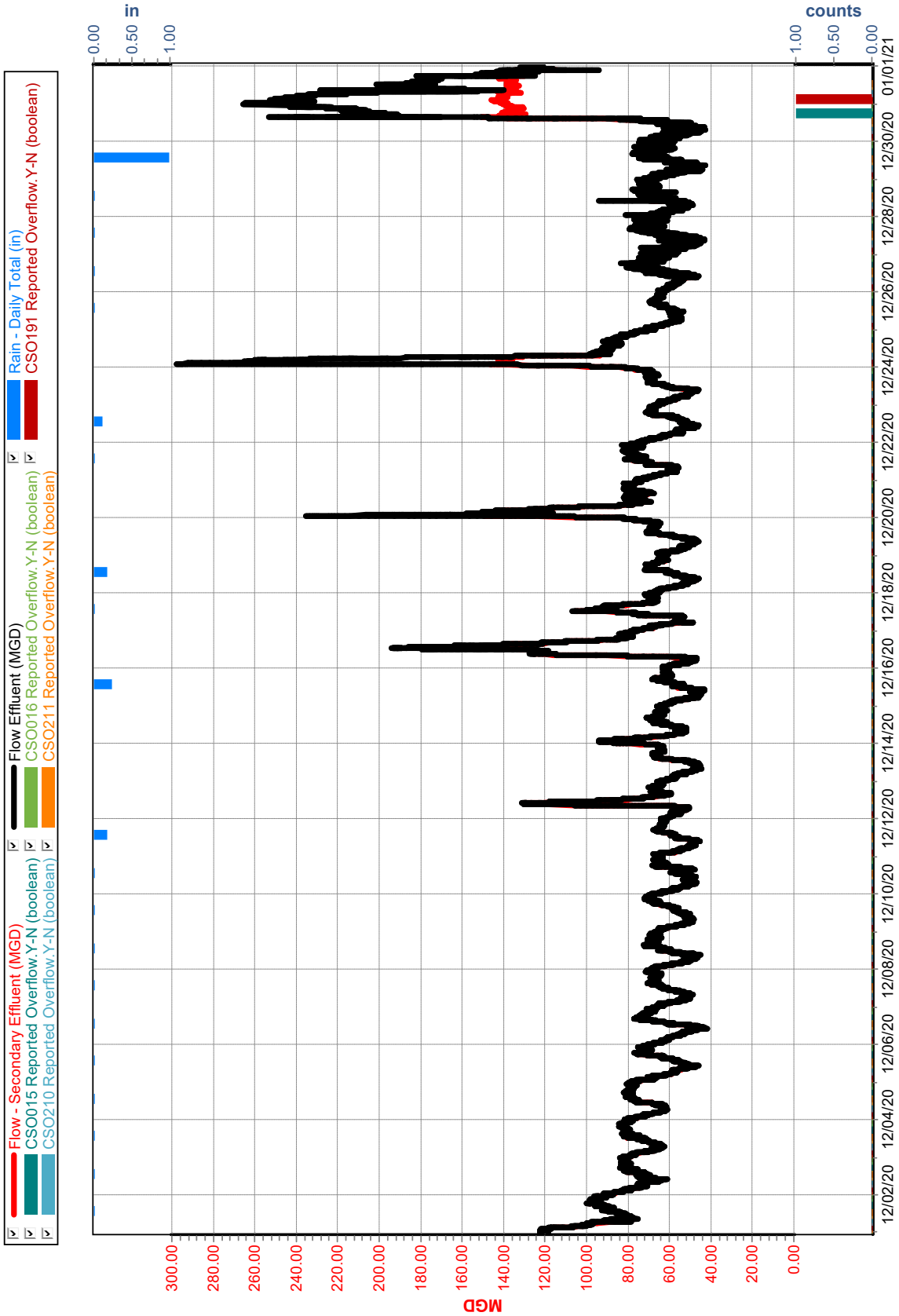
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CSO211 Reported Overflow.Y-N (boolean)
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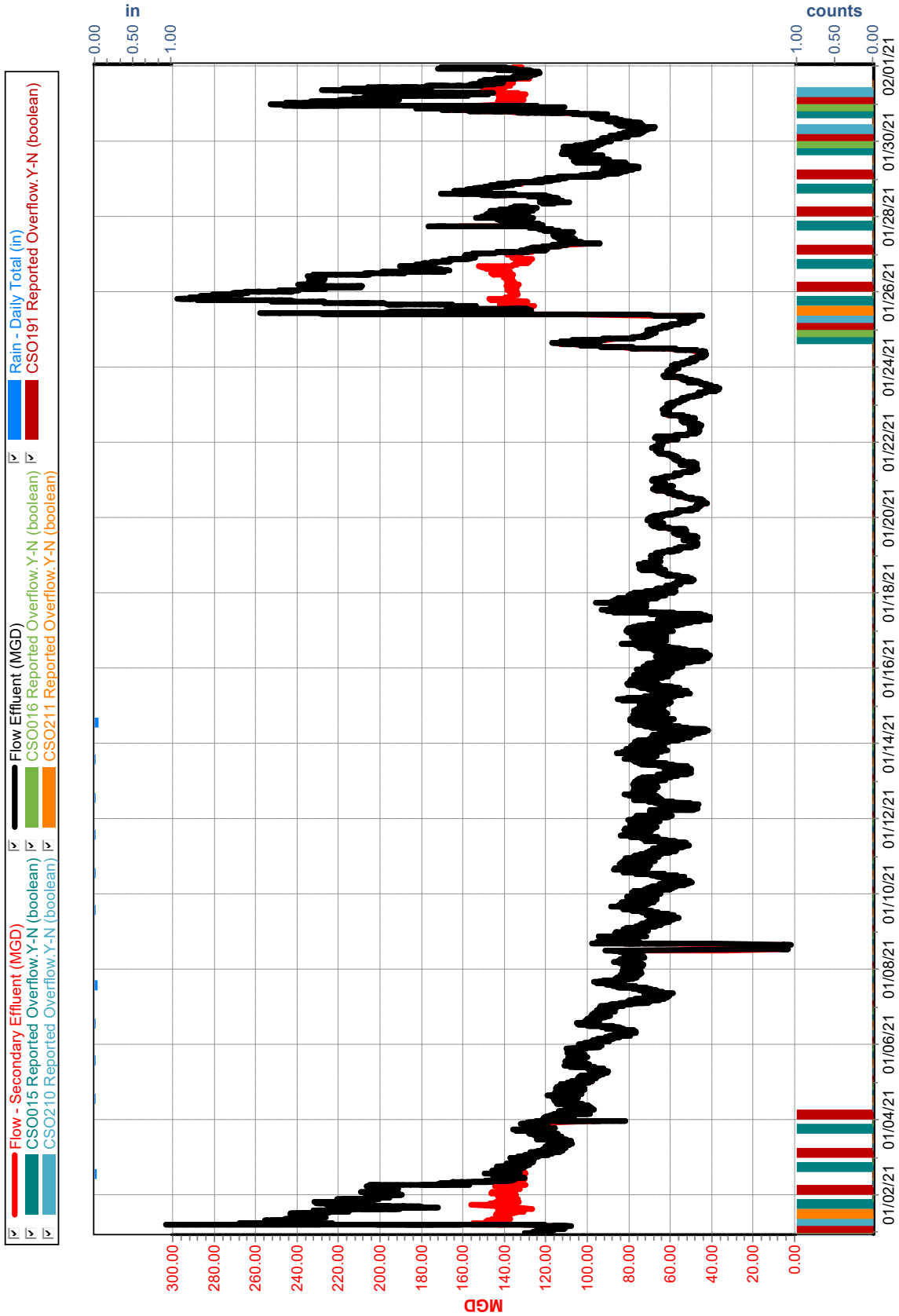
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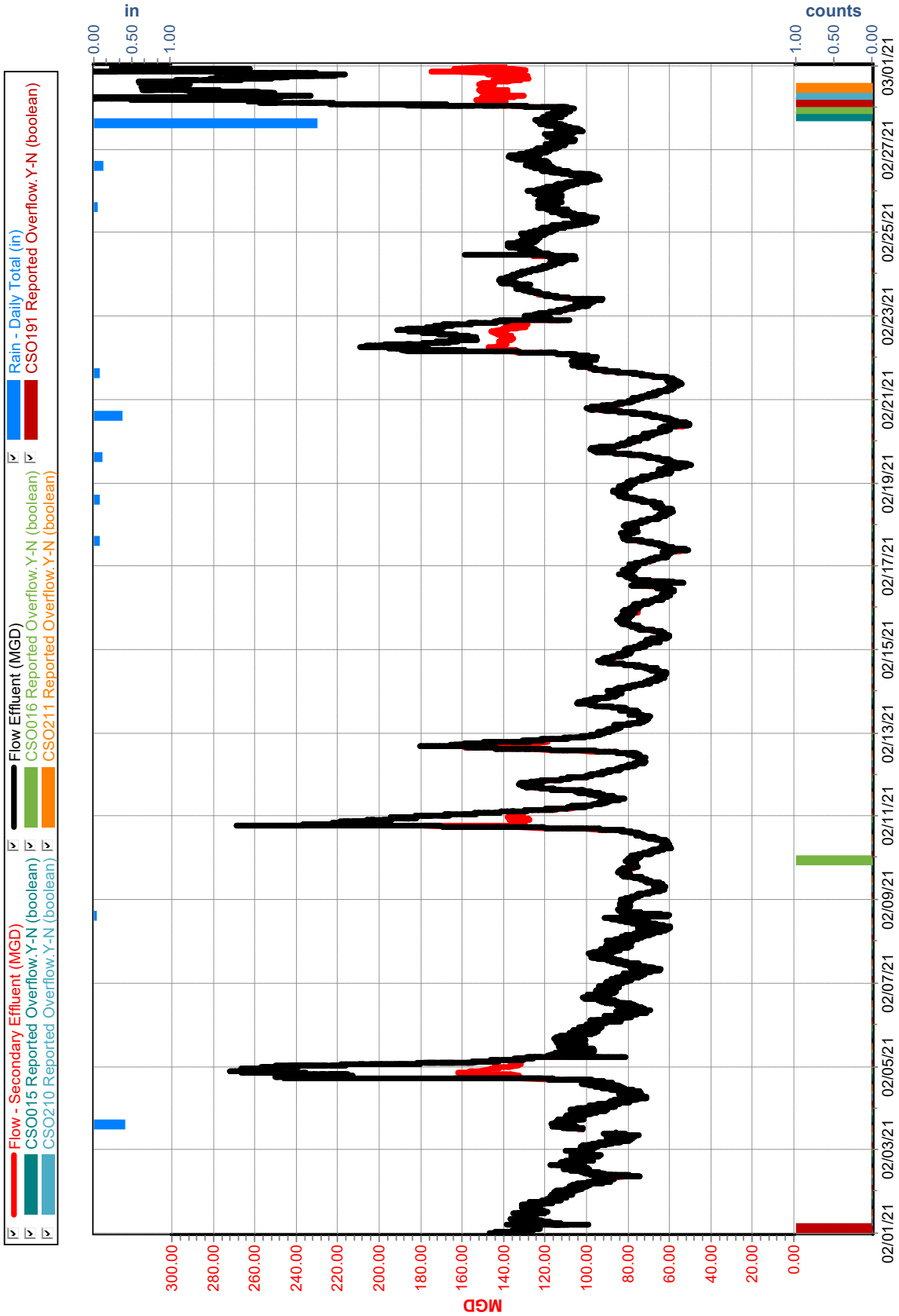
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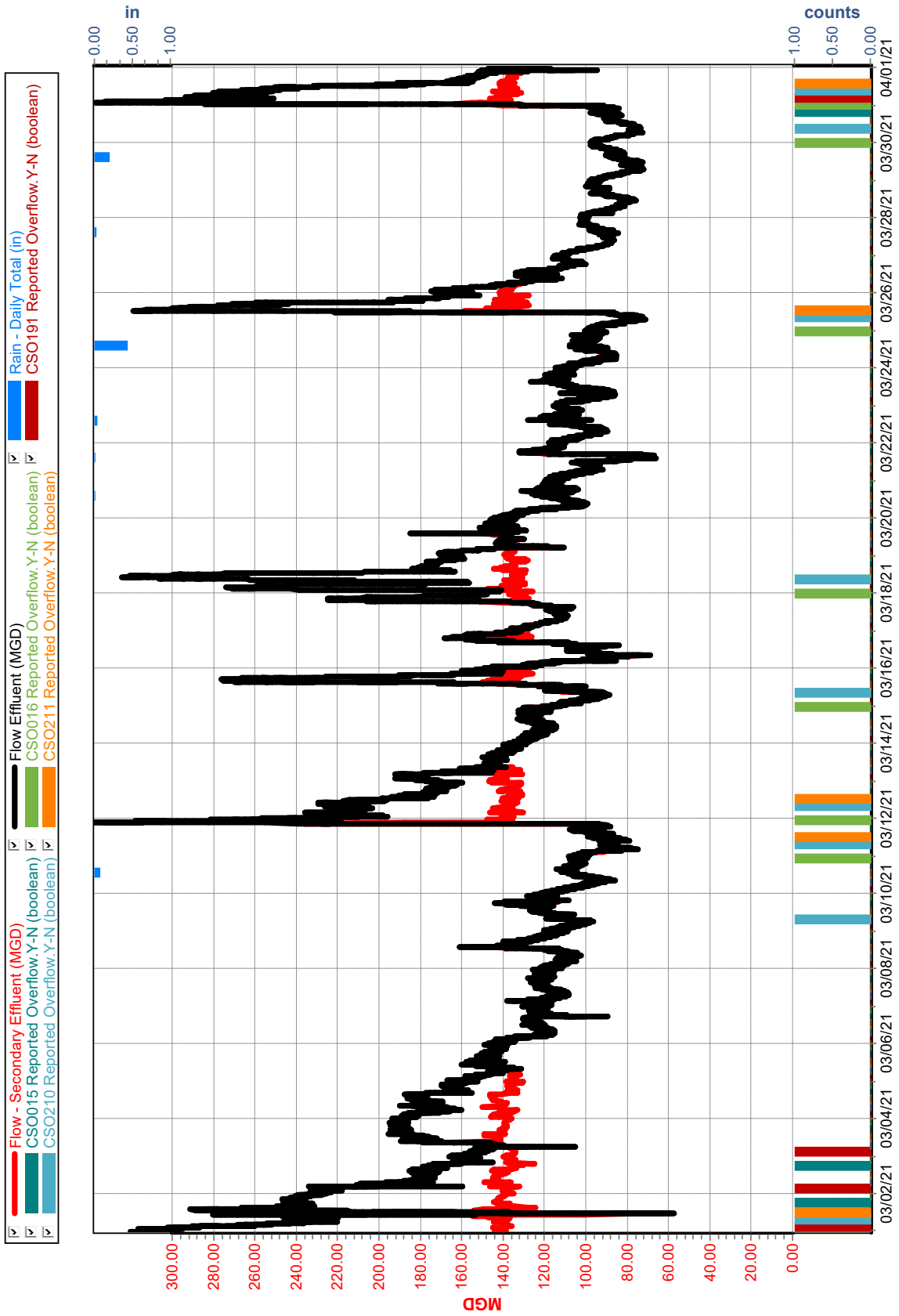
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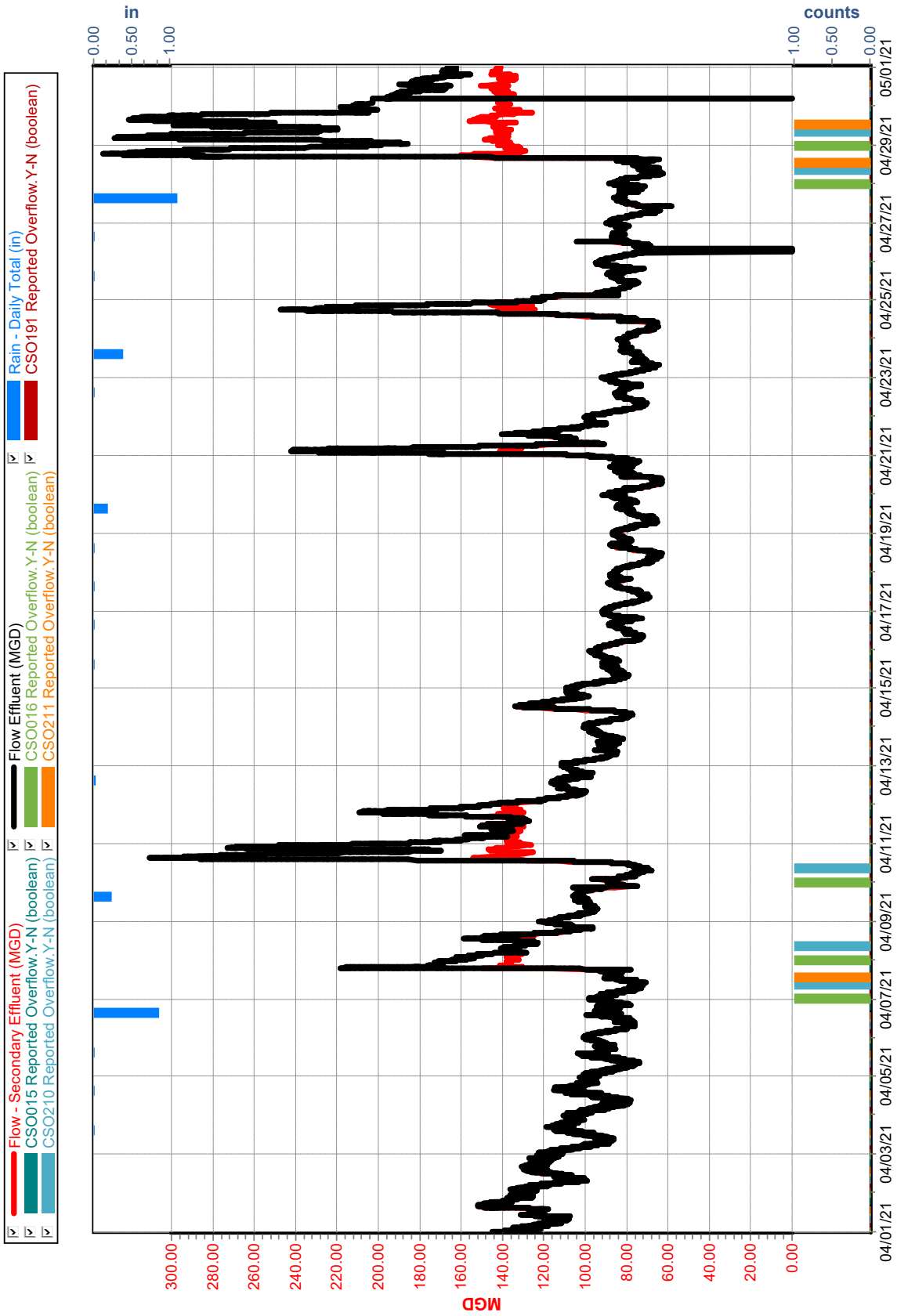
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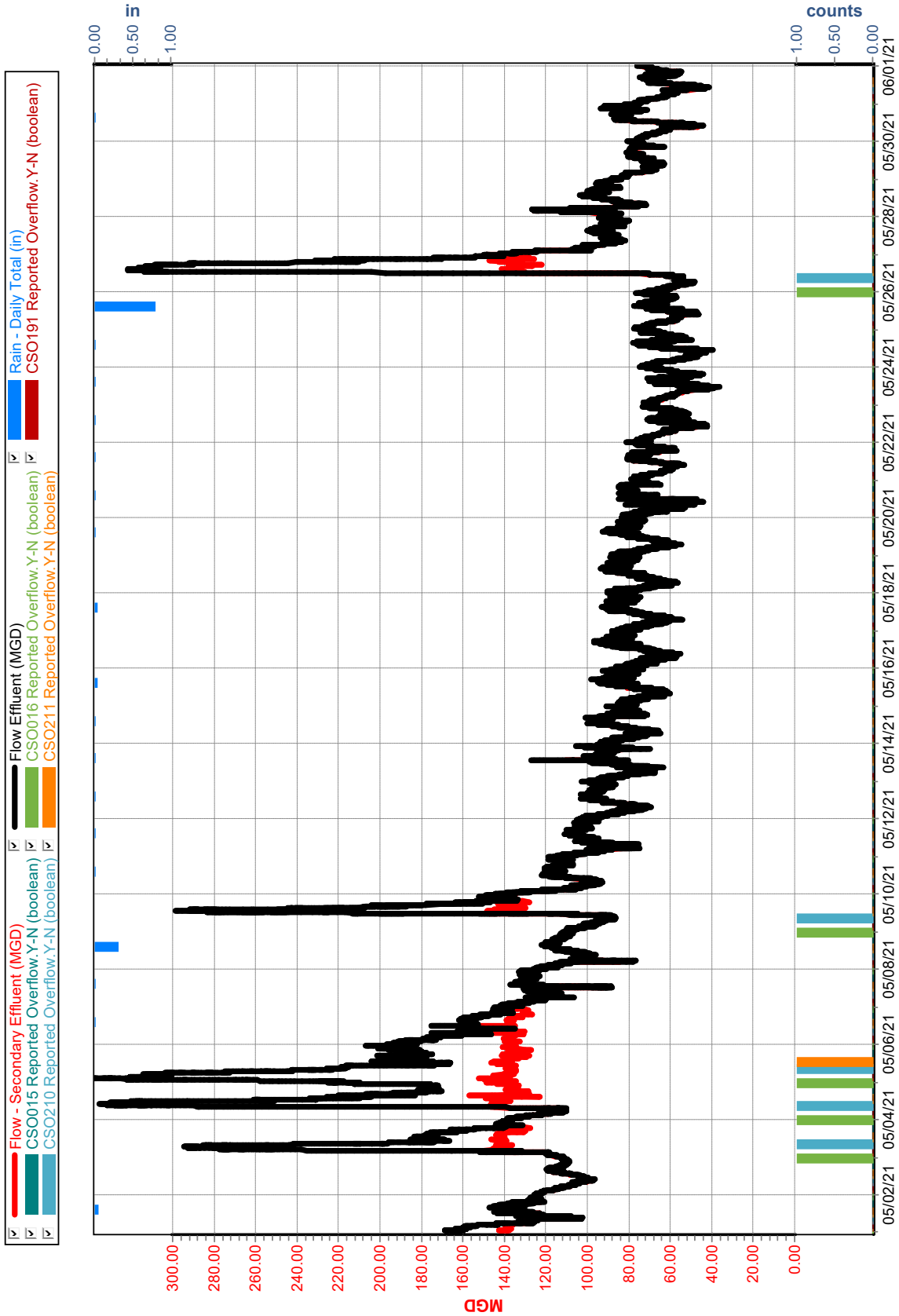
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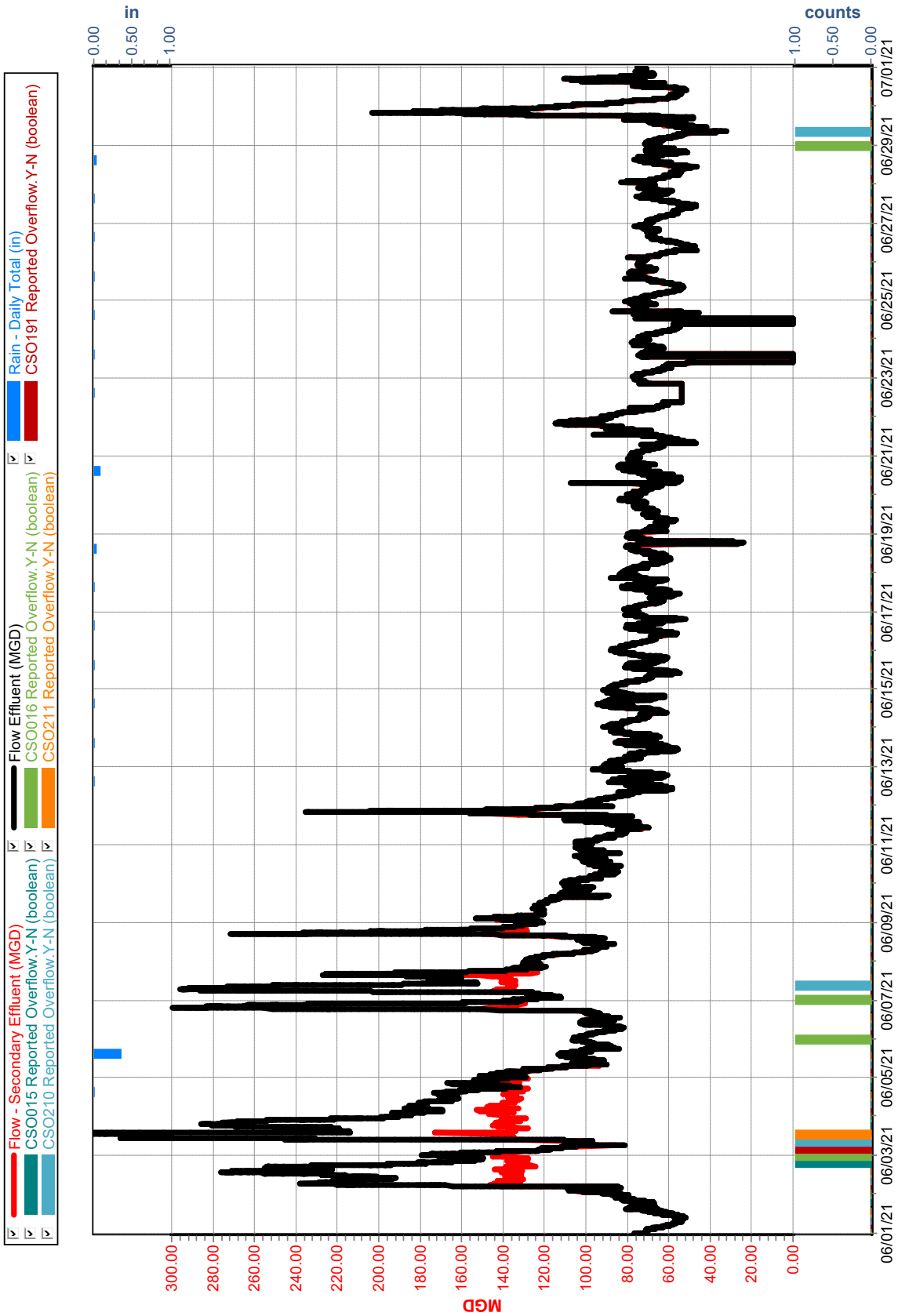
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07/01/21

APPENDIX K ORGANIZATIONAL CHART

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Louisville and Jefferson County
Metropolitan Sewer District

Organizational Chart
Effective 07/7/2021

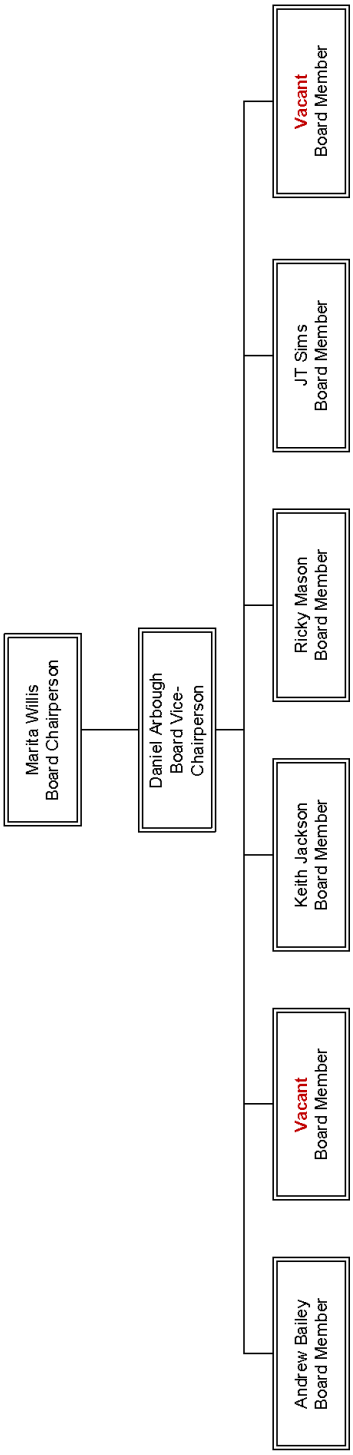
1

msd
Safe, clean waterways

Organizational Summary

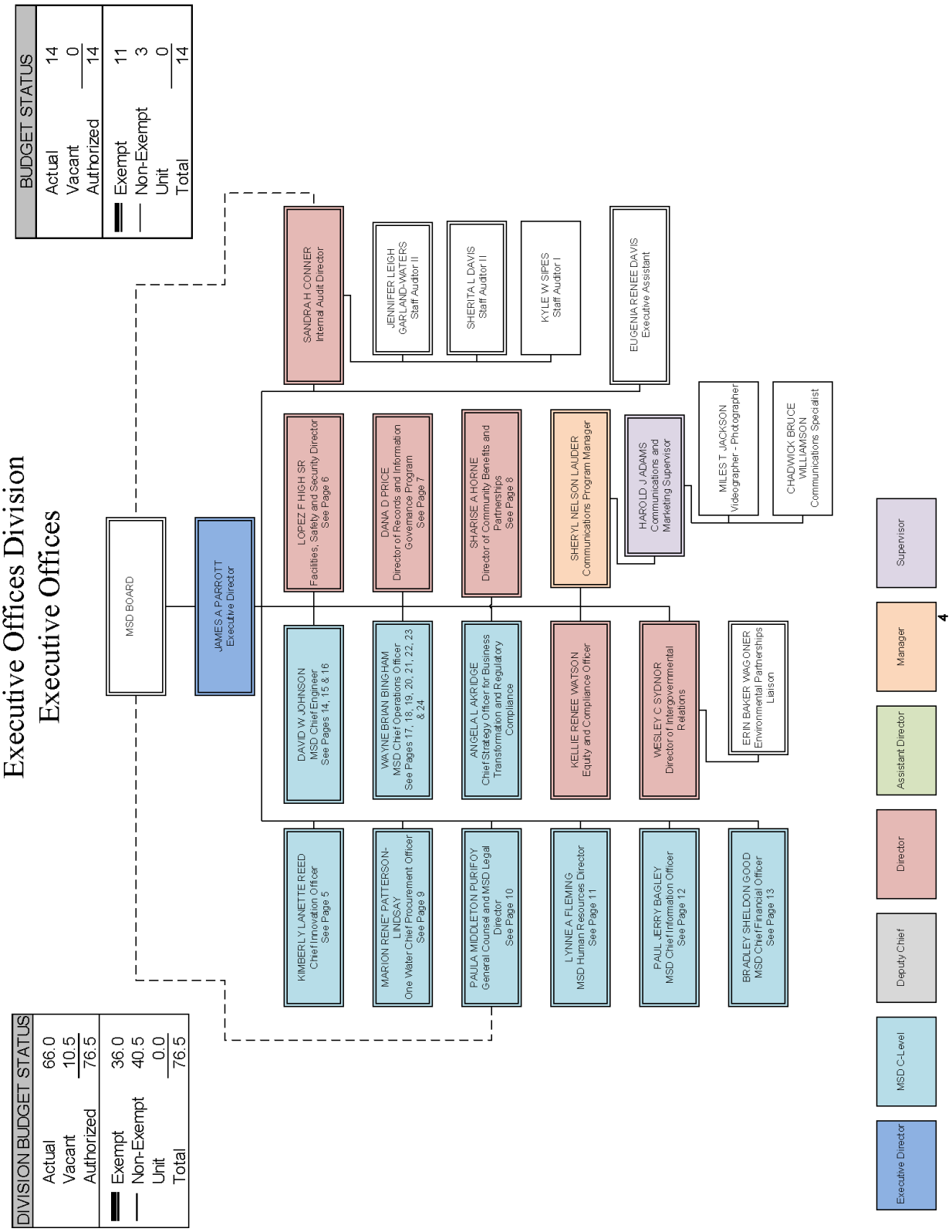
	Total Positions	Current Actual	Vacant (Budgeted)	New/Unbudgeted (Vacant)	Exempt	Non-Exempt	Union	Net Overbudget
Executive Offices Division								
Executive Offices	14	14	0	0	11	3	0	0
Innovation, Customer Relations and Dispatch	25	21	4	0	6	19	0	0
Facilities, Safety & Security	21.5	19	2.5	0	12	9.5	0	0
Records and Information Governance	9	8	1	0	3	6	0	0
Community Benefits and Partnerships	7	4	3	0	4	3	0	0
Supply Chain and Economic Inclusion Division	23	17	6	0	11	12	0	0
Legal Division	10	8	2	0	8	2	0	0
Human Resources Division	19	17	2	0	12	7	0	0
Information Technology Division	32	30	2	0	27	5	0	0
Finance Division	19	17	2	0	6	13	0	0
Engineering Division								
Eng Admin, Reg Compliance, Records & GIS	17	16	1	0	11	6	0	0
Engineering Technical Services	46.5	42	4.5	0	24	22.5	0	0
Development & Stormwater Services	31	30	1	0	20	11	0	0
Operations Division								
Administration	3	2	1	0	2	1	0	0
Collections System and Flood Protection	76	64	12	0	17	15	44	0
Treatment Facilities	88	77	11	0	19	15	54	0
Treatment Facilities (Maintenance)	41	37	4	0	5	2	34	0
Support Services	38	27	11	0	13	25	0	0
Wastewater and Drainage	128	122	6	0	15	13	100	0
Wastewater and Drainage (Sanitary)	77	72	5	0	11	0	66	0
Fleet Services	19	19	0	0	4	1	14	0
DISTRICT TOTAL	**744**	**663**	**81**	**0**	**241**	**191**	**312**	**0**

Board Members



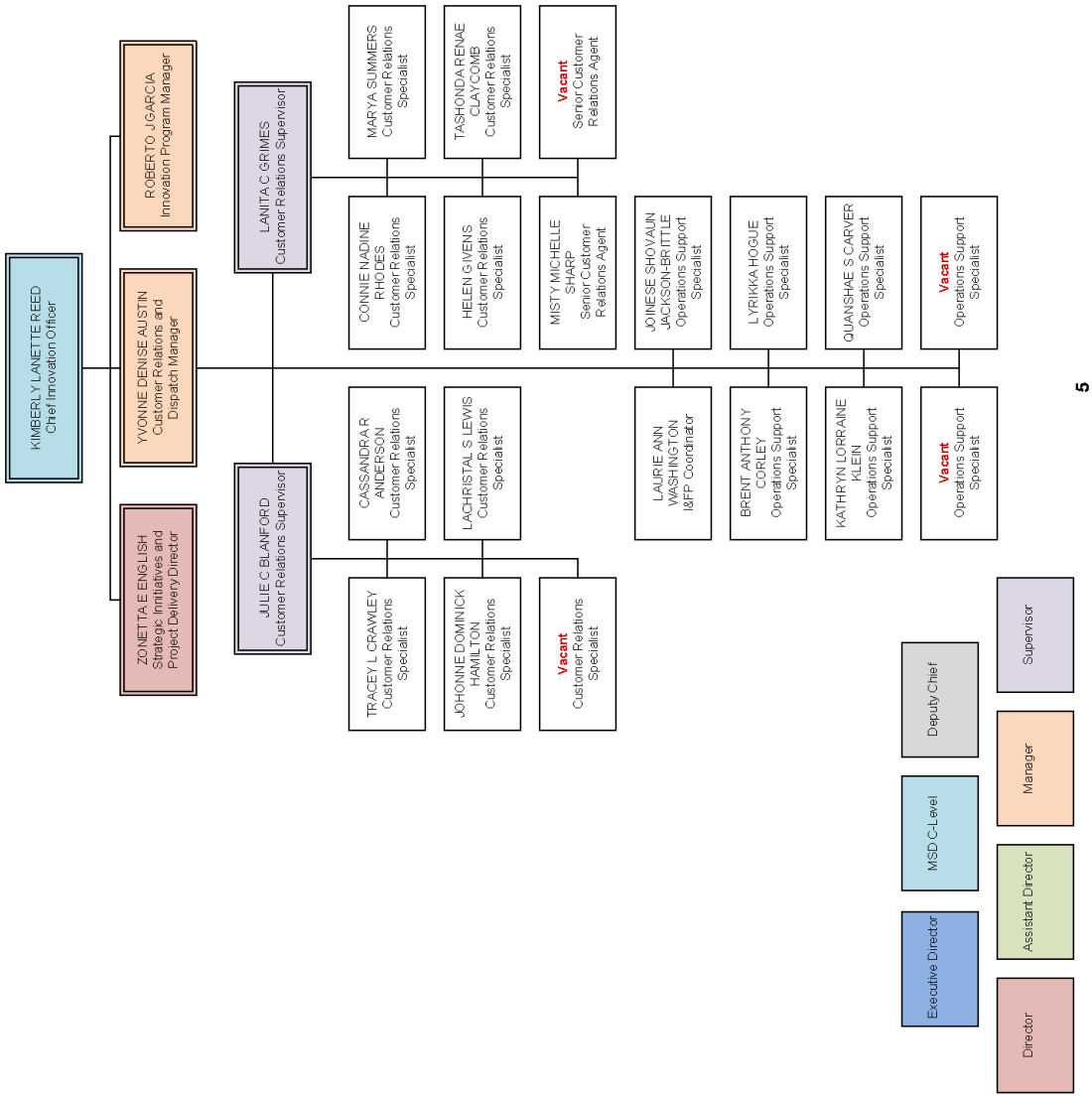
3

Executive Offices Division
Executive Offices



Executive Offices Division
Innovation, Customer Relations & Dispatch

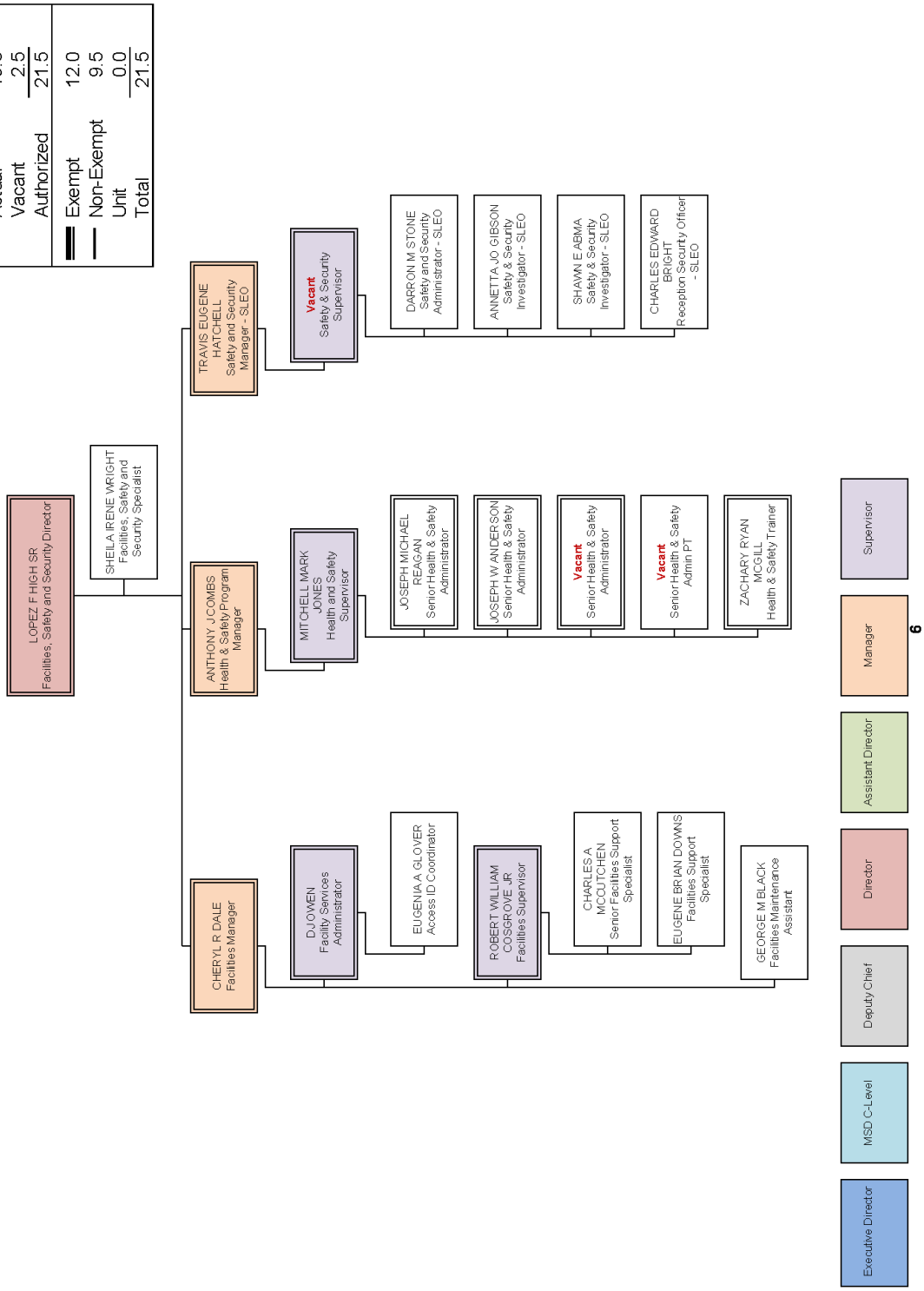
BUDGET STATUS	
Actual	21
Vacant	4
Authorized	25
Exempt	6
Non-Exempt	19
Unit	0
Total	25



5

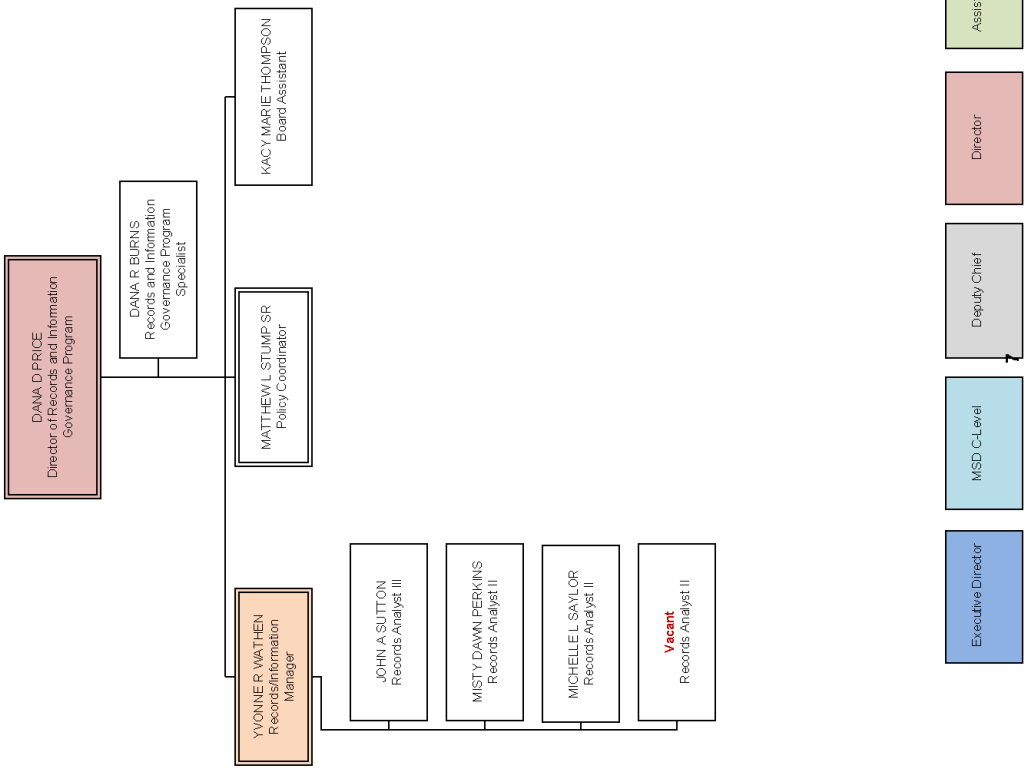
Executive Offices Division
Facilities, Safety & Security

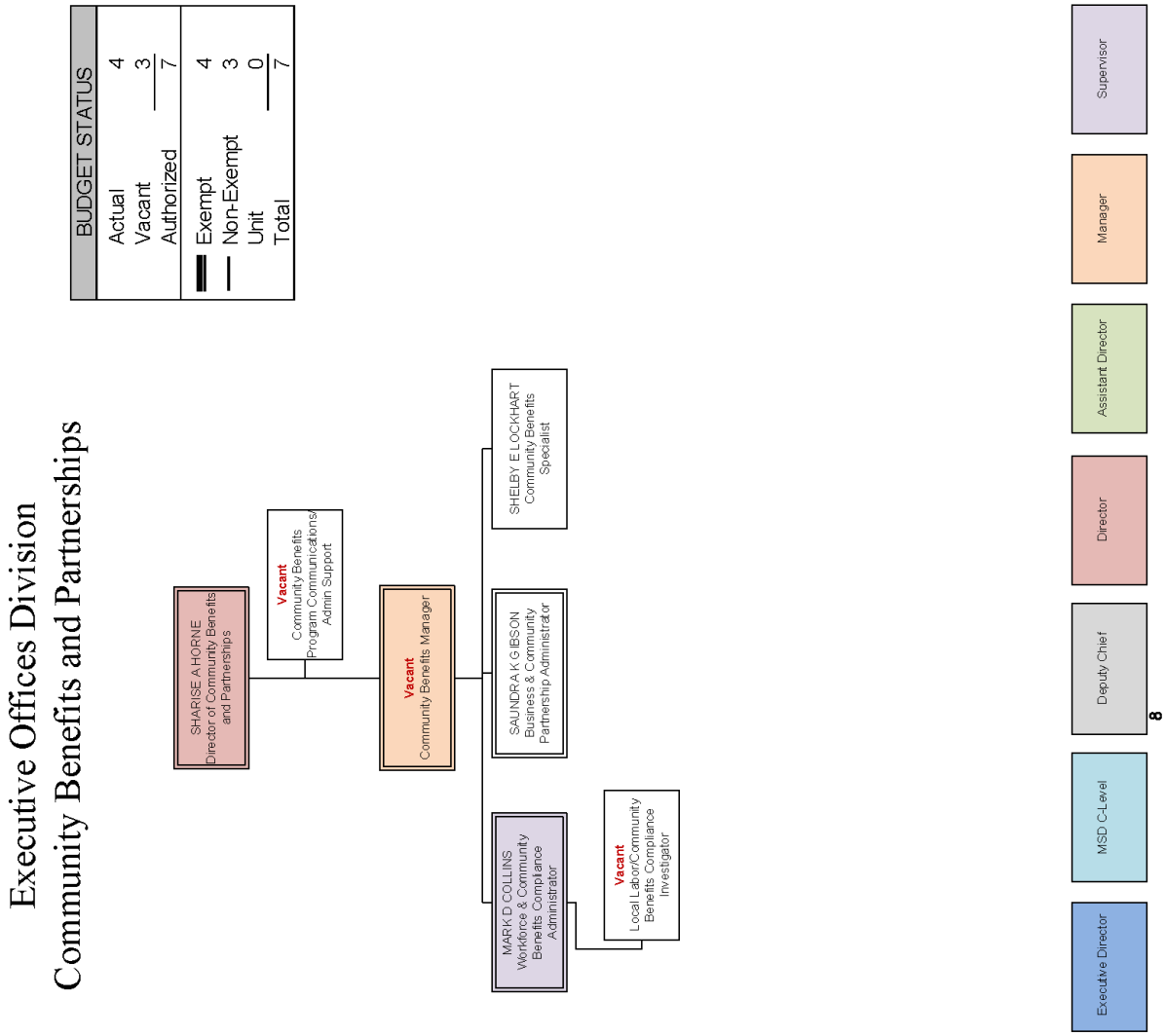
BUDGET STATUS	
Actual	19.0
Vacant	2.5
Authorized	21.5
Exempt	12.0
Non-Exempt	9.5
Unit	0.0
Total	21.5



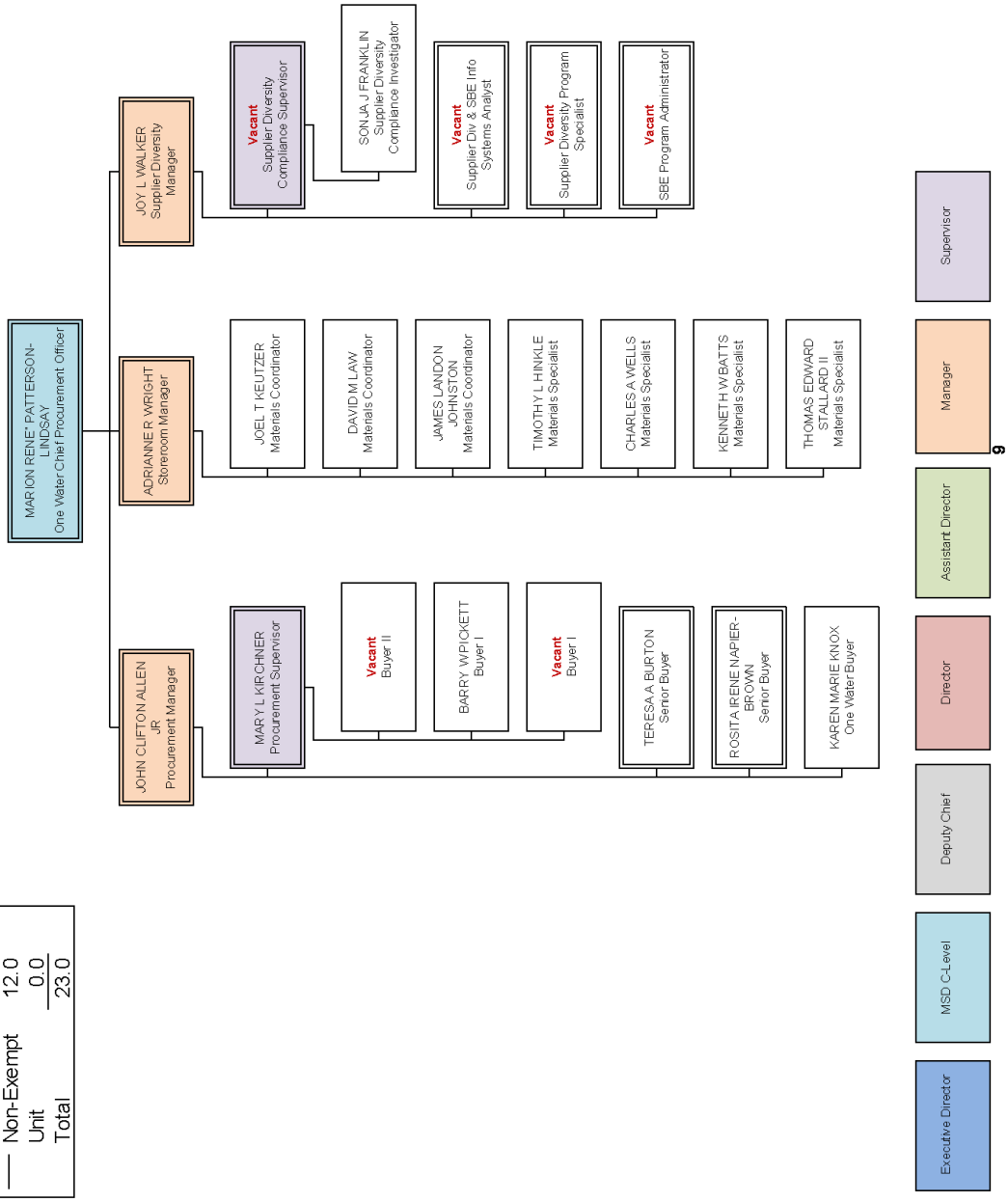
Executive Offices Division
Records and Information Governance

BUDGET STATUS	
Actual	8
Vacant	1
Authorized	9
Exempt	3
Non-Exempt	6
Unit	0
Total	9

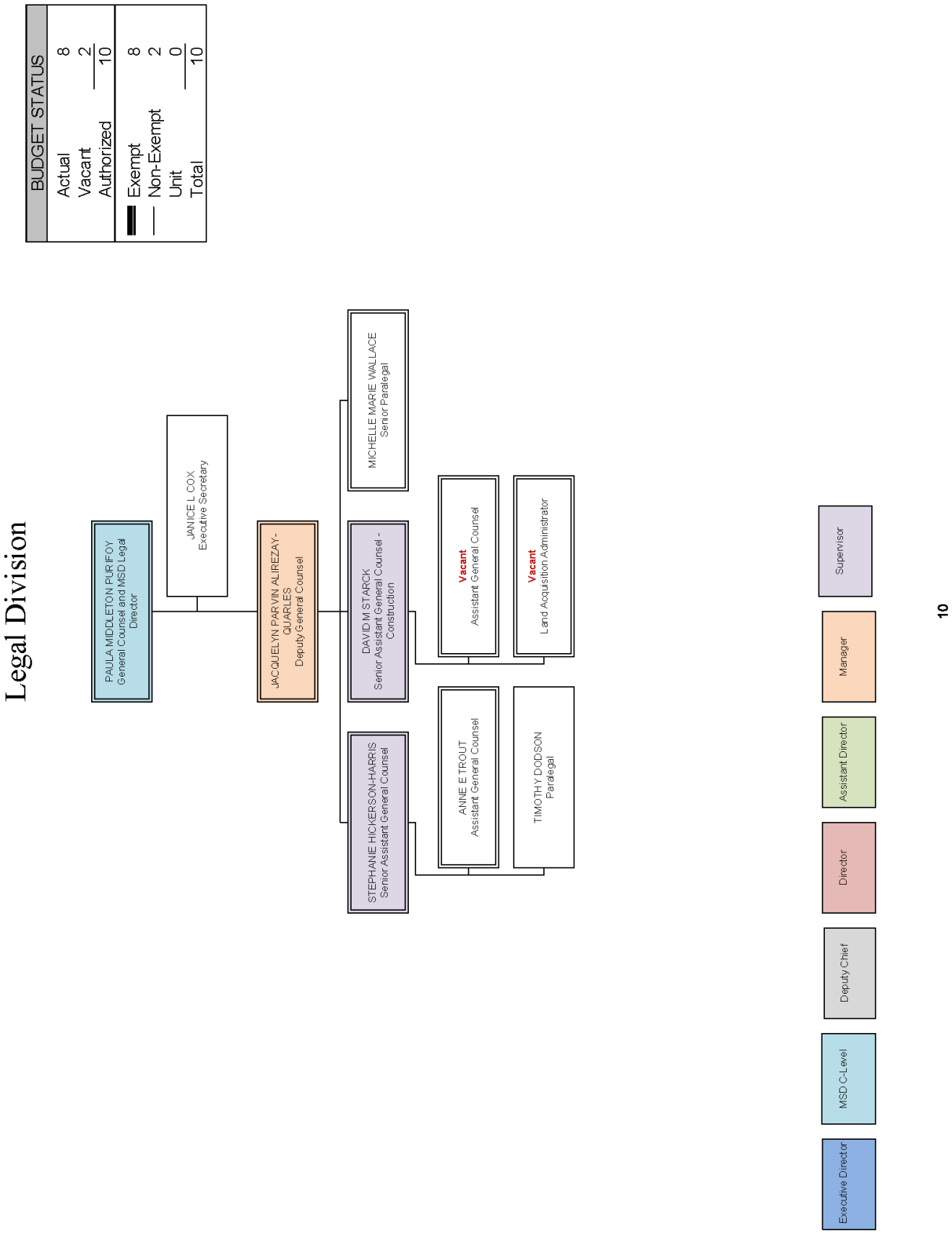


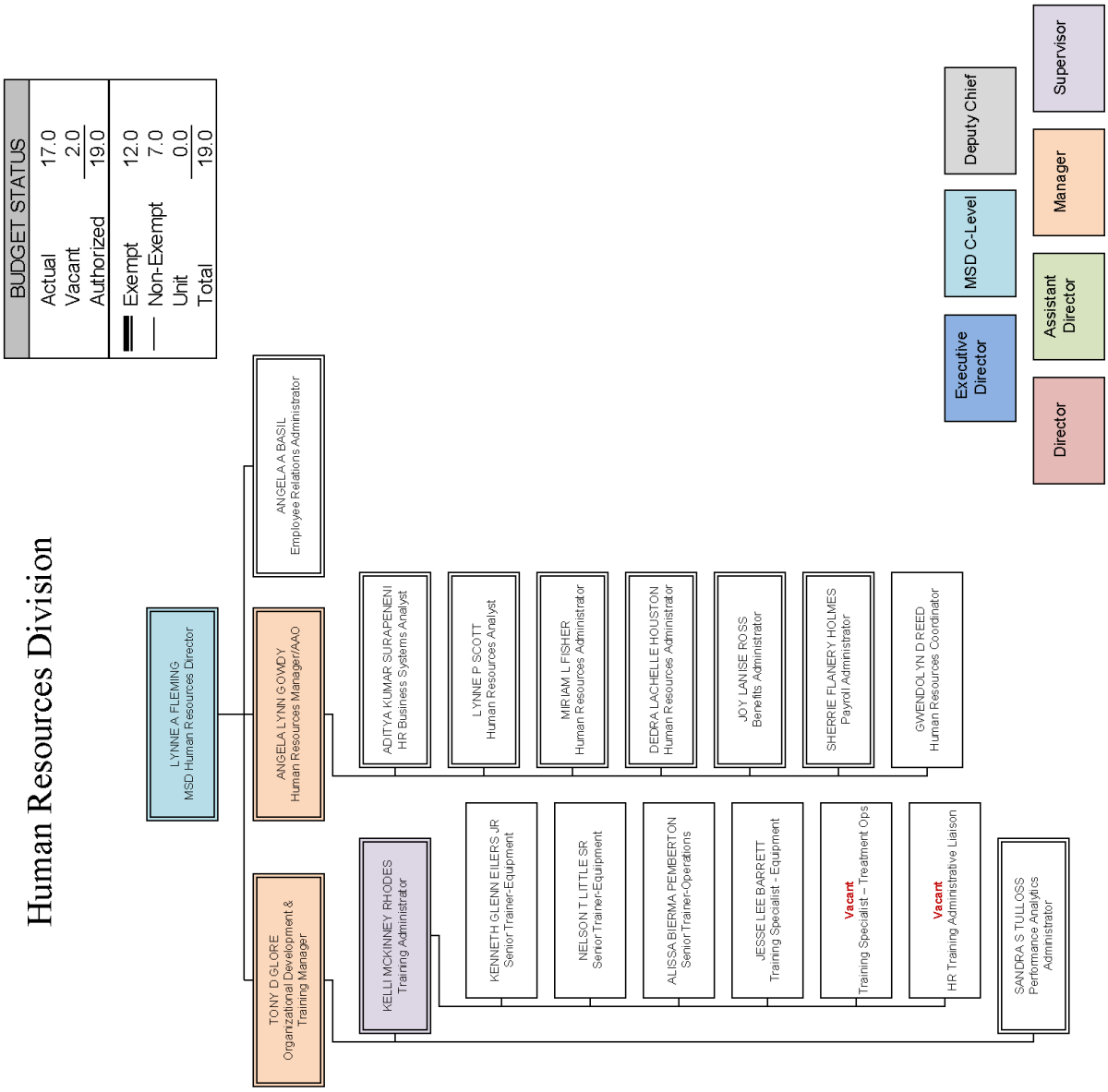

Executive Offices Division
Community Benefits and Partnerships
BUDGET STATUS
Actual 4
Vacant 3
Authorized 7
Exempt 4
Non-Exempt 3
Unit 0
Total 7
SHARISE A HORNE
Director of Community Benefits and Partnerships
Vacant
Community Benefits Program Communications/ Admin Support
Vacant
Community Benefits Manager
SHELBY E LOCKHART
Community Benefits Specialist
SAUNDRA K GIBSON
Business & Community Partnership Administrator
MARK D COLLINS
Workforce & Community Benefits Compliance Administrator
Vacant
Local Labor/Community Benefits Compliance Investigator
Executive Director
MSD C-Level
Deputy Chief
Director
Assistant Director
Manager
Supervisor

Supply Chain and Economic Inclusion Division
Procurement, Storeroom & Supplier Diversity

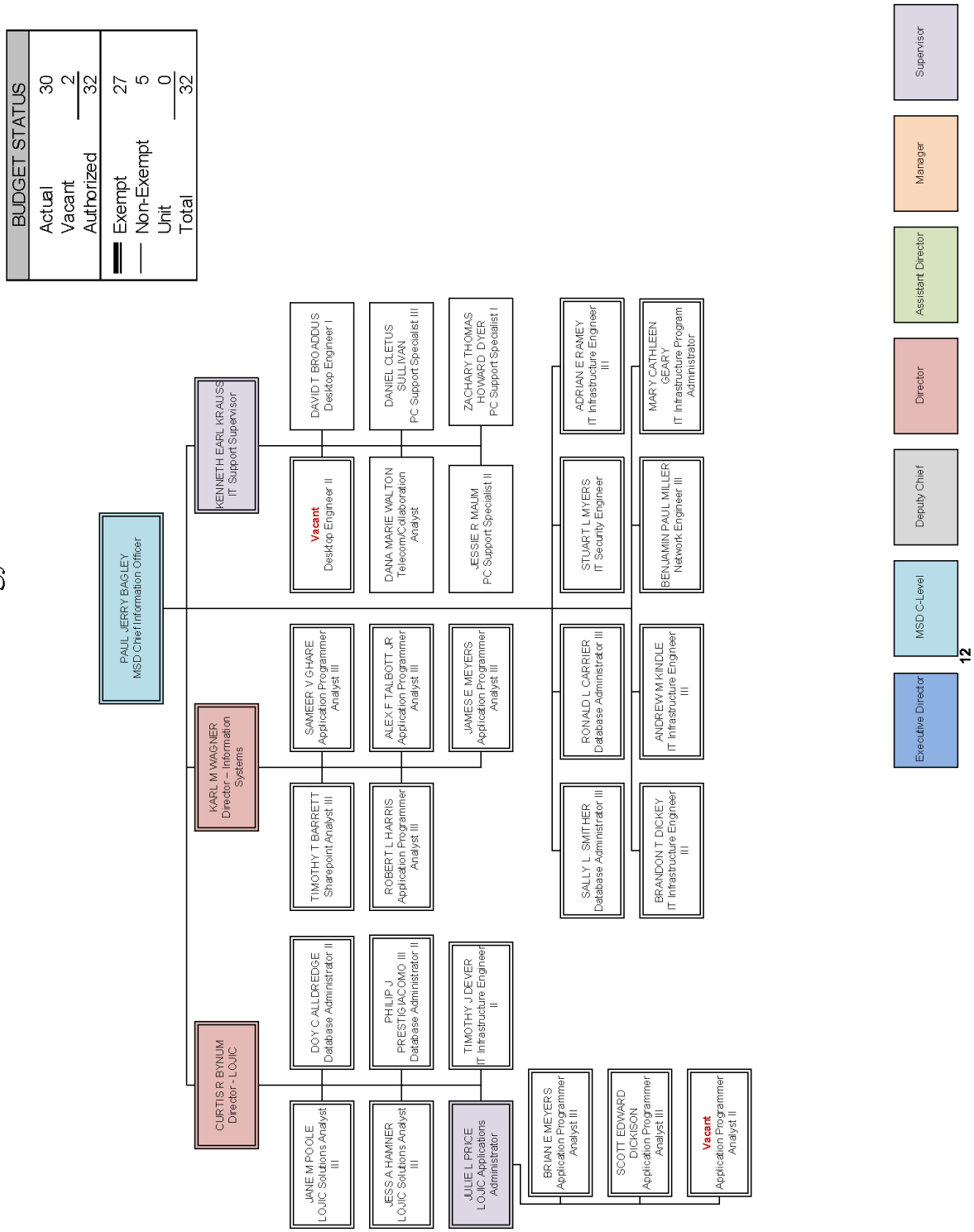


DIVISION BUDGET STATUS	
Actual	17.0
Vacant	6.0
Authorized	23.0
Exempt	11.0
Non-Exempt	12.0
Unit	0.0
Total	23.0

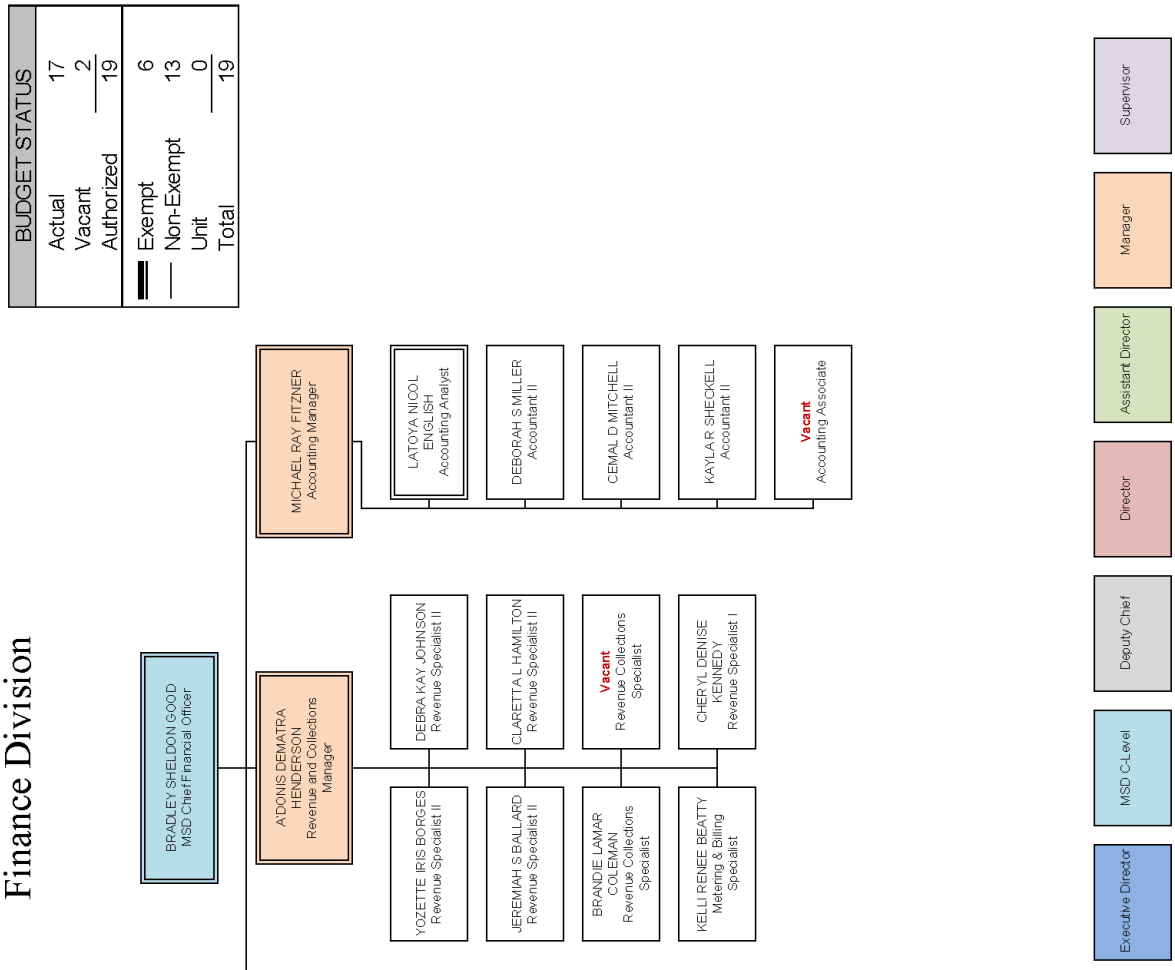

Legal Division
BUDGET STATUS
Actual 8
Vacant 2
Authorized 10
Exempt 8
Non-Exempt 2
Unit 0
Total 10
PAULA MIDDLETON PURIFOY
General Counsel and MSD Legal Director
JANICE L COX
Executive Secretary
JACQUELYN PARVIN ALIREZAY-QUARLES
Deputy General Counsel
MICHELLE MARIE WALLACE
Senior Paralegal
DAVID M STARCK
Senior Assistant General Counsel - Construction
Vacant
Assistant General Counsel
Vacant
Land Acquisition Administrator
STEPHANIE HICKERSON-HARRIS
Senior Assistant General Counsel
ANNE E TROUT
Assistant General Counsel
TIMOTHY DODSON
Paralegal
Supervisor
Manager
Assistant Director
Director
Deputy Chief
MSD C-Level
Executive Director
10


Human Resources Division
BUDGET STATUS
Actual 17.0
Vacant 2.0
Authorized 19.0
Exempt 12.0
Non-Exempt 7.0
Unit 0.0
Total 19.0
LYNNE A FLEMING
MSD Human Resources Director
ANGELA A BASIL
Employee Relations Administrator
ANGELA LYNN GOWDY
Human Resources Manager/AAO
ADITYA KUMAR SURAPENENI
HR Business Systems Analyst
LYNNE P SCOTT
Human Resources Analyst
MIRIAM L FISHER
Human Resources Administrator
DEDRA LACHELLE HOUSTON
Human Resources Administrator
JOY LANISE ROSS
Benefits Administrator
SHERRIE FLANERY HOLMES
Payroll Administrator
GWENDOLYN D REED
Human Resources Coordinator
TONY D GLORE
Organizational Development & Training Manager
KELLI MCKINNEY RHODES
Training Administrator
KENNETH GLENN EILERS JR
Senior Trainer-Equipment
NELSON T LITTLE SR
Senior Trainer-Equipment
ALISSA BIERMA PEMBERTON
Senior Trainer-Operations
JESSE LEE BARRETT
Training Specialist - Equipment
Vacant
Training Specialist – Treatment Ops
Vacant
HR Training Administrative Liaison
SANDRA S TULLOSS
Performance Analytics Administrator
Executive Director
MSD C-Level
Deputy Chief
Director
Assistant Director
Manager
Supervisor
11

Information Technology Division



Finance Division



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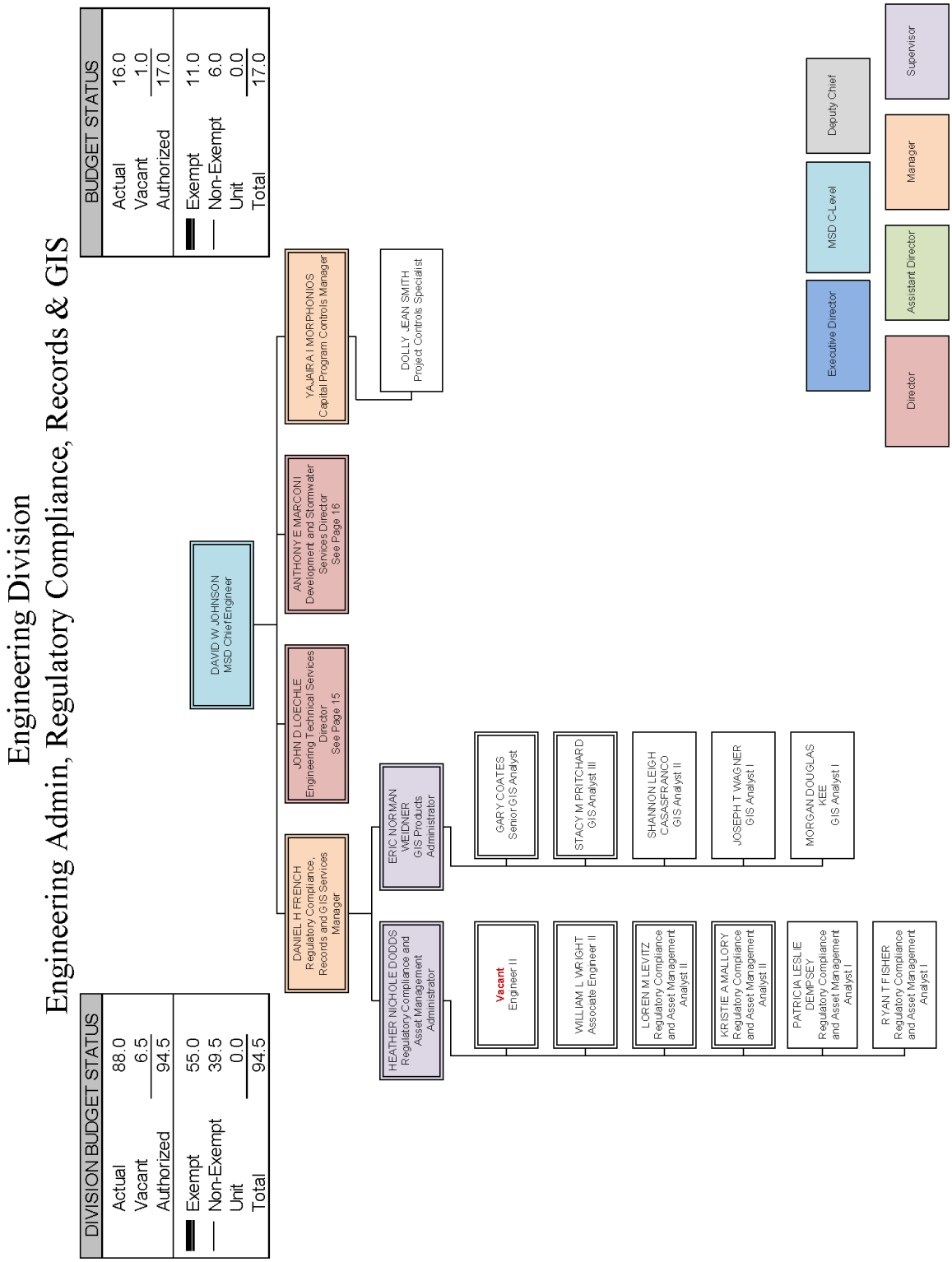
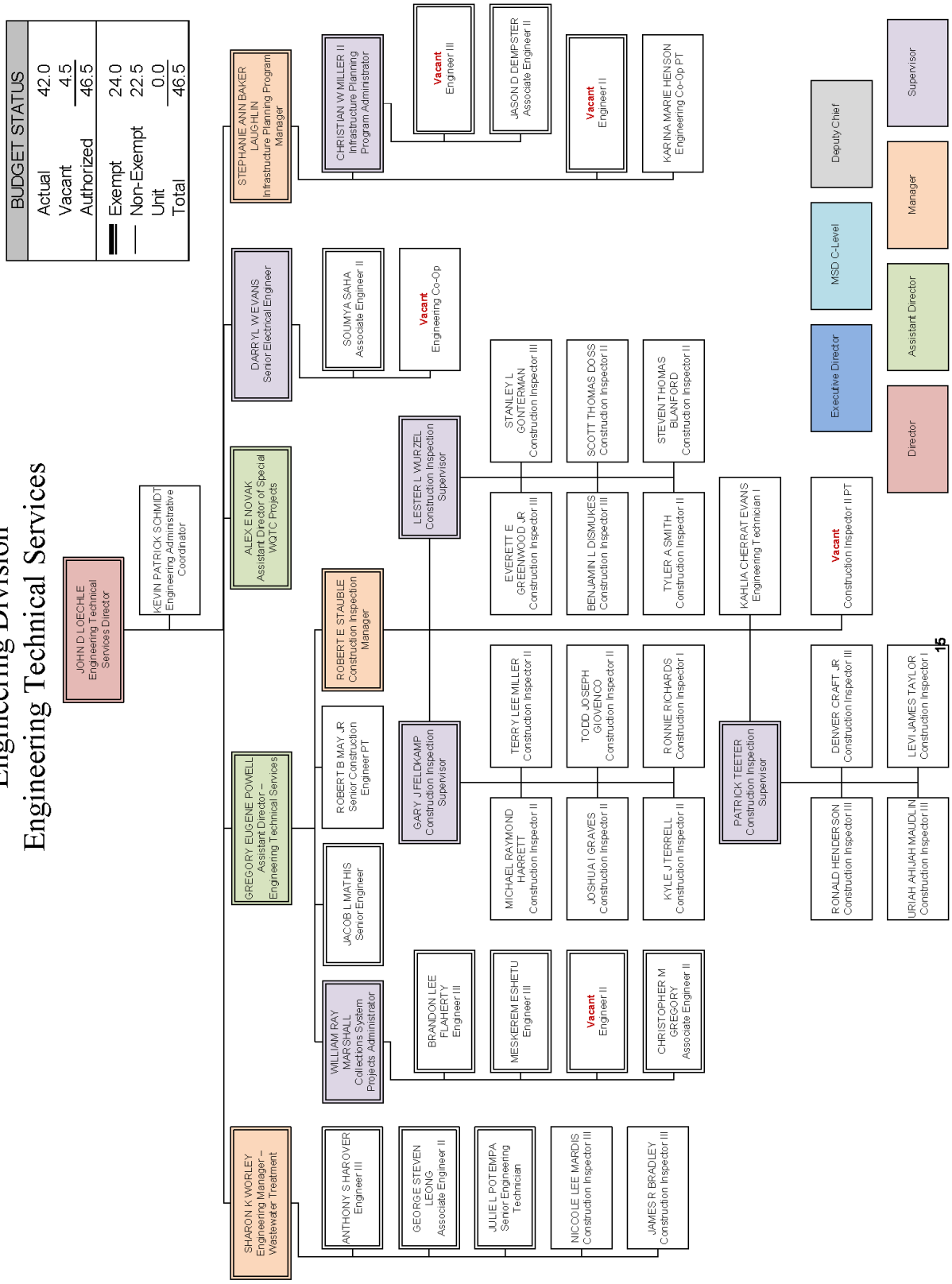
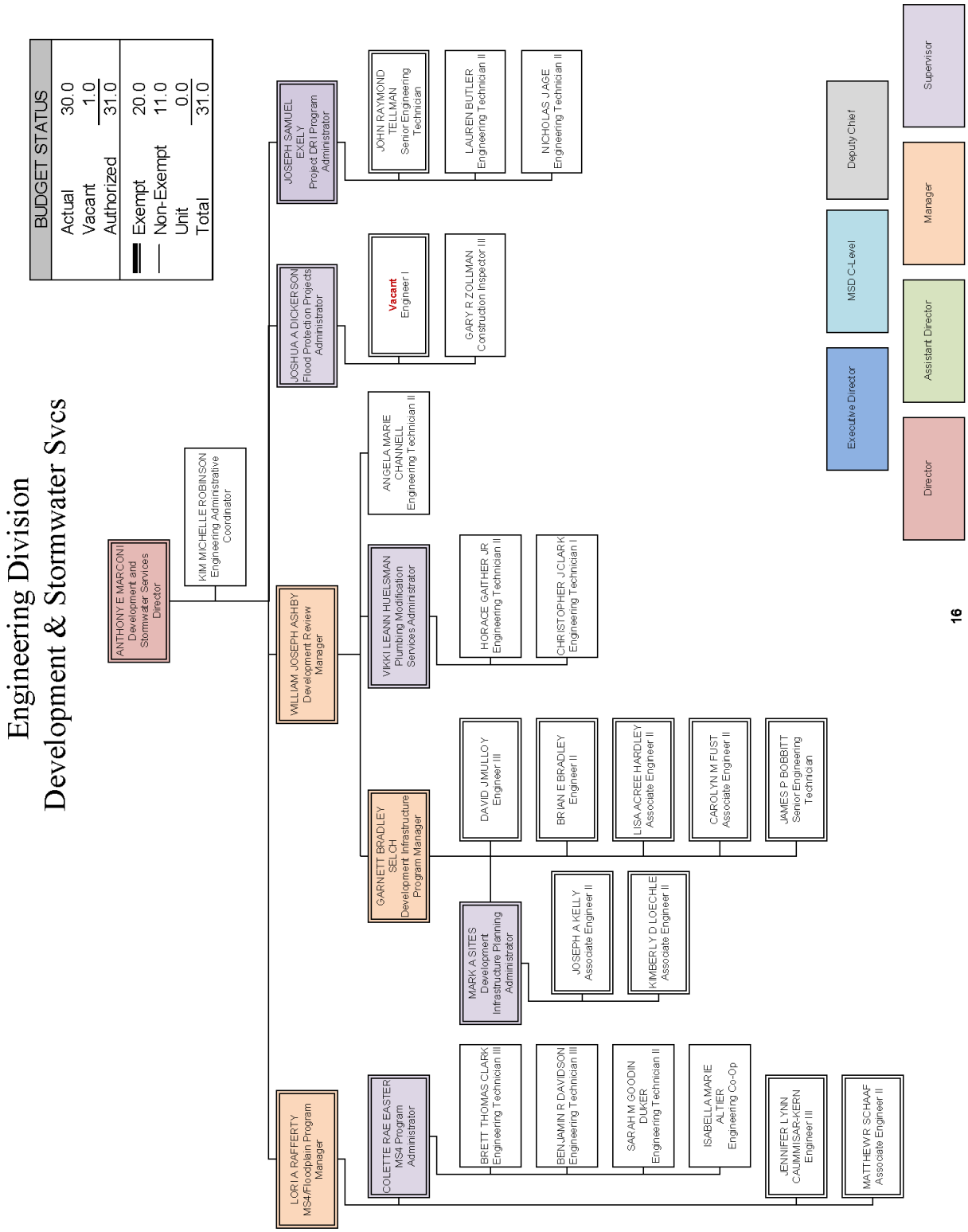
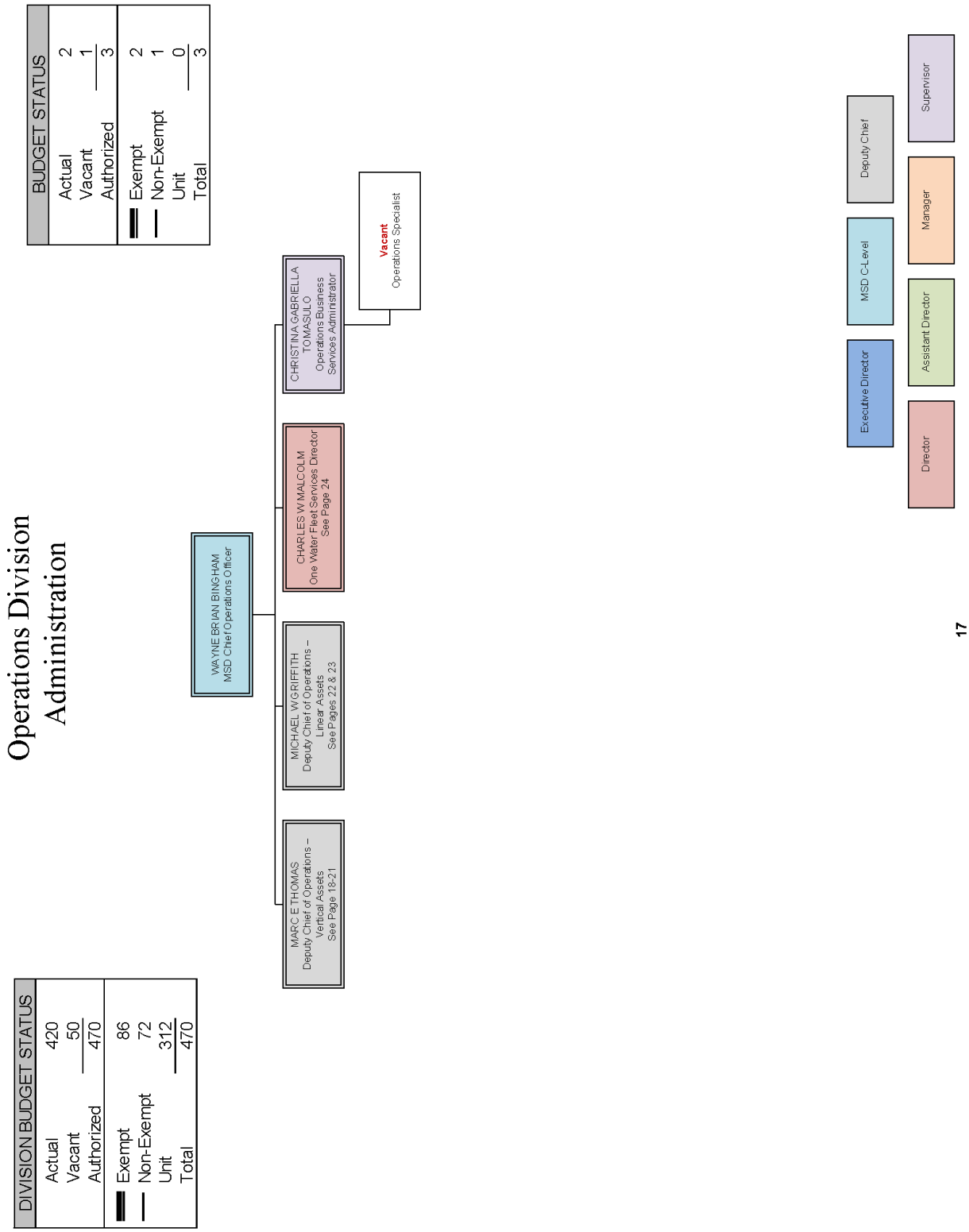

Engineering Division
Engineering Admin, Regulatory Compliance, Records & GIS
DIVISION BUDGET STATUS
Actual 88.0
Vacant 6.5
Authorized 94.5
Exempt 55.0
Non-Exempt 39.5
Unit 0.0
Total 94.5
BUDGET STATUS
Actual 16.0
Vacant 1.0
Authorized 17.0
Exempt 11.0
Non-Exempt 6.0
Unit 0.0
Total 17.0
DAVID W JOHNSON
MSD Chief Engineer
JOHN D LOECHLE
Engineering Technical Services Director
See Page 15
ANTHONY E MARCONI
Development and Stormwater Services Director
See Page 16
YAJAIRA I MORPHONIOS
Capital Program Controls Manager
DOLLY JEAN SMITH
Project Controls Specialist
DANIEL H FRENCH
Regulatory Compliance, Records and GIS Services Manager
ERIC NORMAN WEIDNER
GIS Products Administrator
GARY COATES
Senior GIS Analyst
STACY M PRITCHARD
GIS Analyst III
SHANNON LEIGH CASASFRANCO
GIS Analyst II
JOSEPH T WAGNER
GIS Analyst I
MORGAN DOUGLAS KEE
GIS Analyst I
HEATHER NICHOLE DODDS
Regulatory Compliance and Asset Management Administrator
Vacant
Engineer II
WILLIAM L WRIGHT
Associate Engineer II
LOREN M LEVITZ
Regulatory Compliance and Asset Management Analyst II
KRISTIE A MALLORY
Regulatory Compliance and Asset Management Analyst II
PATRICIA LESLIE DEMPSEY
Regulatory Compliance and Asset Management Analyst I
RYAN T FISHER
Regulatory Compliance and Asset Management Analyst I
Executive Director
MSD C-Level
Deputy Chief
Director
Assistant Director
Manager
Supervisor
14

Engineering Division
Engineering Technical Services

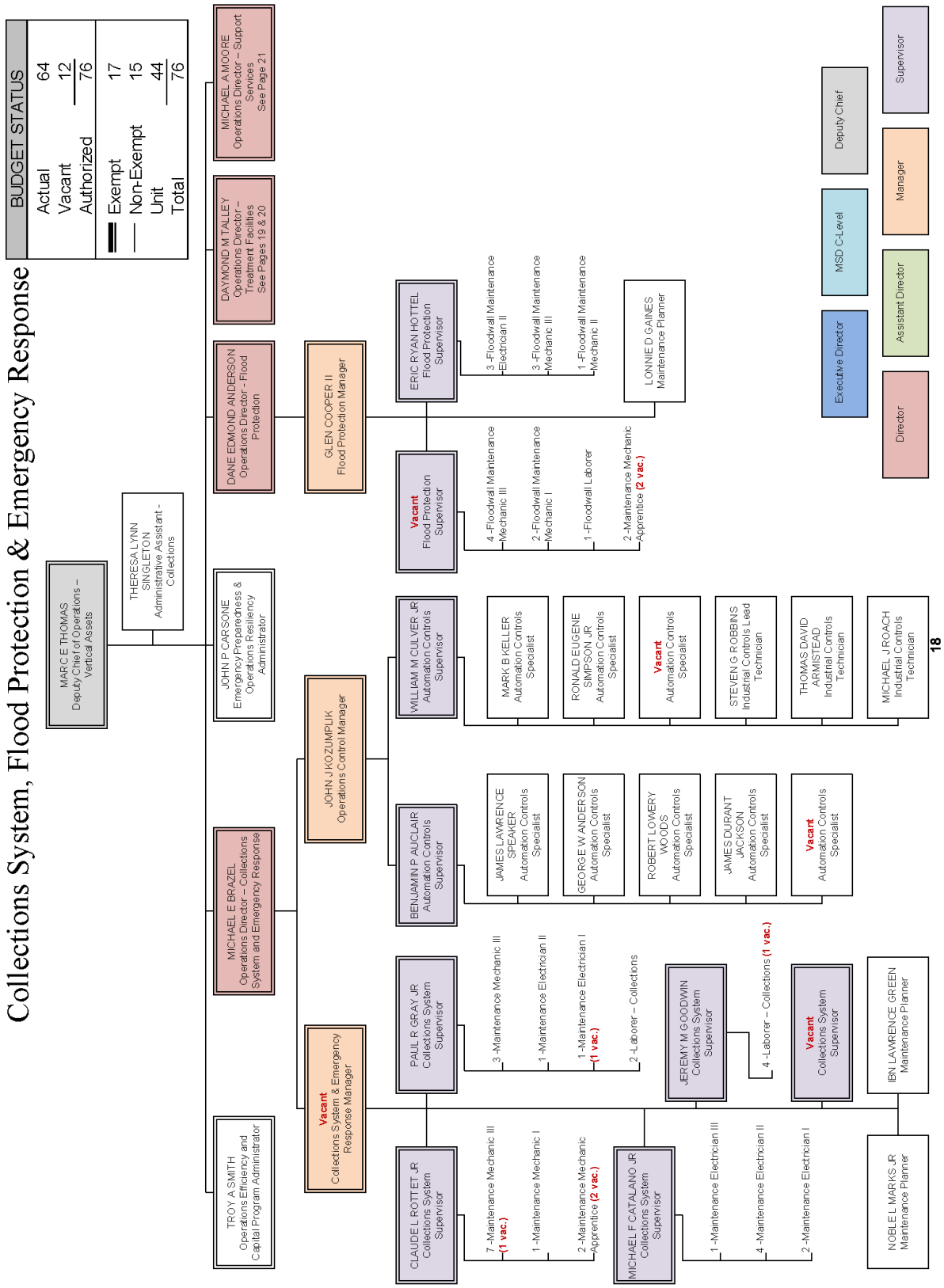


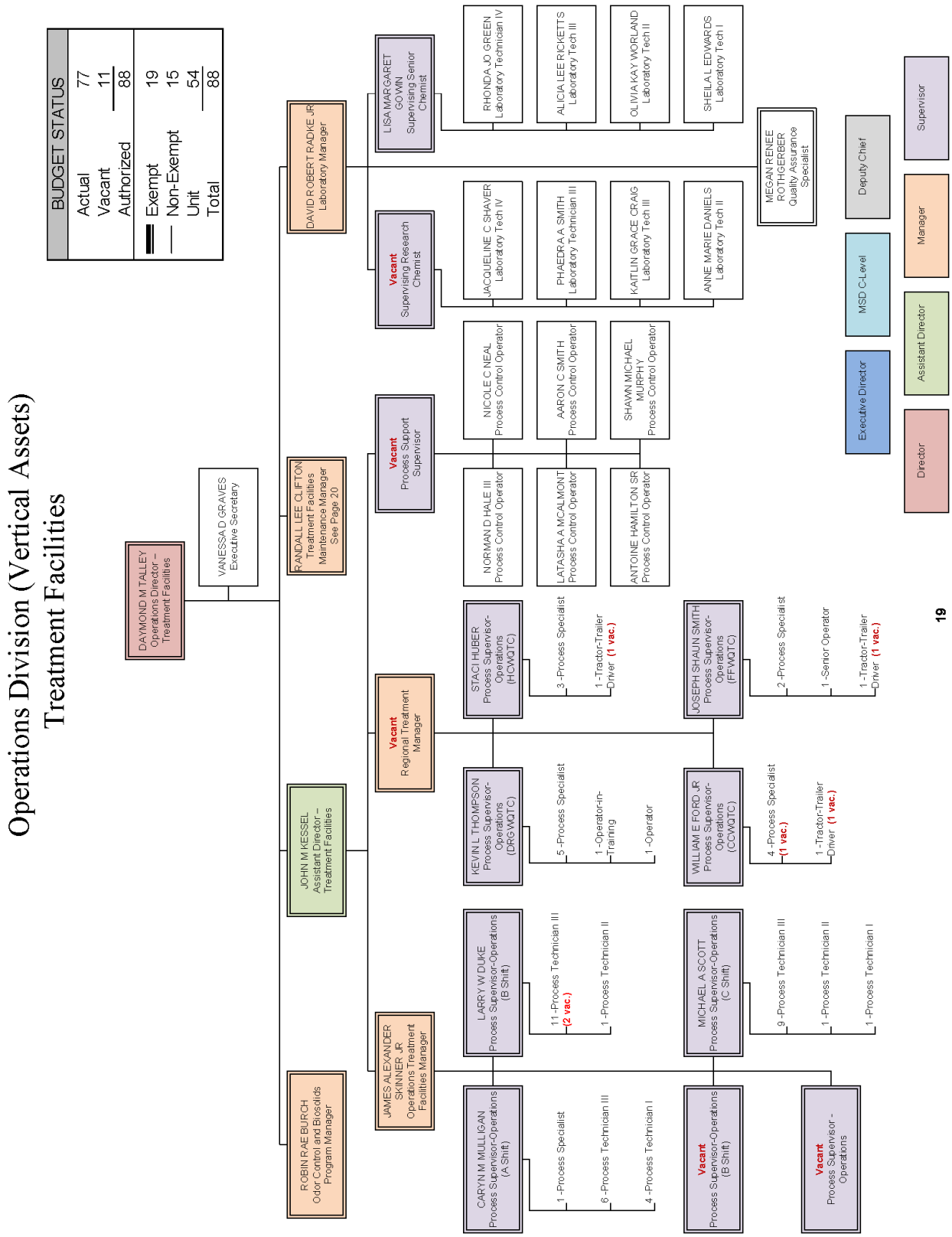

Engineering Division
Development & Stormwater Svcs
BUDGET STATUS
Actual 30.0
Vacant 1.0
Authorized 31.0
Exempt 20.0
Non-Exempt 11.0
Unit 0.0
Total 31.0
ANTHONY E MARCONI Development and Stormwater Services Director
KIM MICHELLE ROBINSON Engineering Administrative Coordinator
JOSEPH SAMUEL EXELY Project DRI Program Administrator
JOHN RAYMOND TELLMAN Senior Engineering Technician
LAUREN BUTLER Engineering Technician II
NICHOLAS JAGE Engineering Technician II
JOSHUA A DICKERSON Flood Protection Projects Administrator
Vacant Engineer I
GARY R ZOLLMAN Construction Inspector III
WILLIAM JOSEPH ASHBY Development Review Manager
ANGELA MARIE CHANNELL Engineering Technician II
VIKKI LEANN HUELSMAN Plumbing Modification Services Administrator
HORACE GAITHER JR Engineering Technician II
CHRISTOPHER J CLARK Engineering Technician I
GARNETT BRADLEY SELCH Development Infrastructure Program Manager
DAVID J MULLOY Engineer III
BRIAN E BRADLEY Engineer II
LISA ACREE HARDLEY Associate Engineer II
CAROLYN M FUST Associate Engineer II
JAMES P BOBBITT Senior Engineering Technician
MARK A SITES Development Infrastructure Planning Administrator
JOSEPH A KELLY Associate Engineer II
KIMBERLY D LOECHLE Associate Engineer II
LORI A RAFFERTY MS4/Floodplain Program Manager
COLETTE RAE EASTER MS4 Program Administrator
BRETT THOMAS CLARK Engineering Technician III
BENJAMIN R DAVIDSON Engineering Technician III
SARAH M GOODIN DUKER Engineering Technician II
ISABELLA MARIE ALTIER Engineering Co-Op
JENNIFER LYNN CAUMMISAR-KERN Engineer III
MATTHEW R SCHAAF Associate Engineer II
Deputy Chief
Supervisor
MSD C-Level
Manager
Executive Director
Assistant Director
Director
16


Operations Division
Administration
BUDGET STATUS
Actual 2
Vacant 1
Authorized 3
Exempt 2
Non-Exempt 1
Unit 0
Total 3
DIVISION BUDGET STATUS
Actual 420
Vacant 50
Authorized 470
Exempt 86
Non-Exempt 72
Unit 312
Total 470
WAYNE BRIAN BINGHAM
MSD Chief Operations Officer
MARC E THOMAS
Deputy Chief of Operations – Vertical Assets
See Page 18-21
MICHAEL W GRIFFITH
Deputy Chief of Operations – Linear Assets
See Pages 22 & 23
CHARLES W MALCOLM
One Water Fleet Services Director
See Page 24
CHRISTINA GABRIELLA TOMASULO
Operations Business Services Administrator
Vacant
Operations Specialist
Executive Director
MSD C-Level
Deputy Chief
Director
Assistant Director
Manager
Supervisor

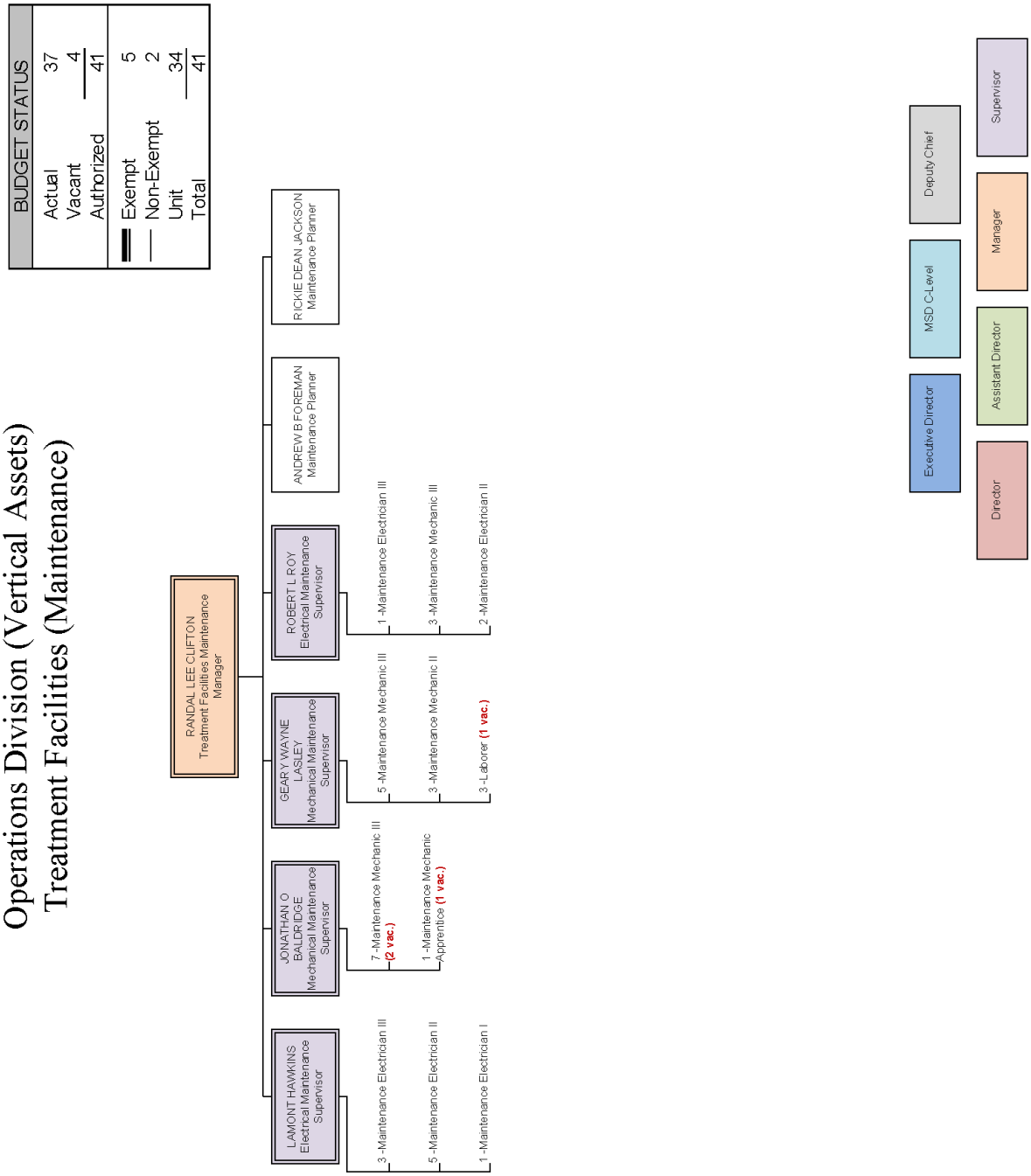
17

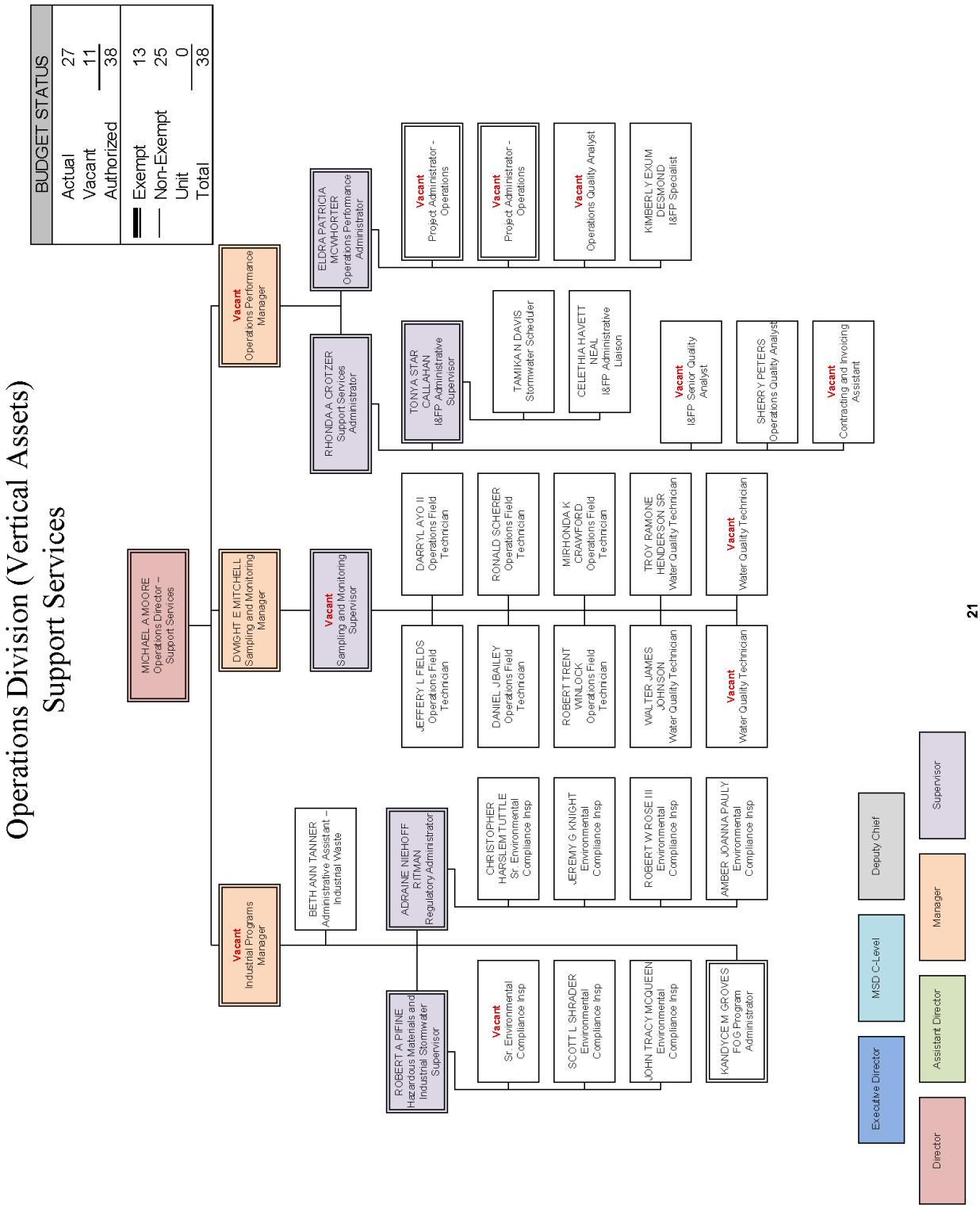
Operations Division (Vertical Assets)
Collections System, Flood Protection & Emergency Response



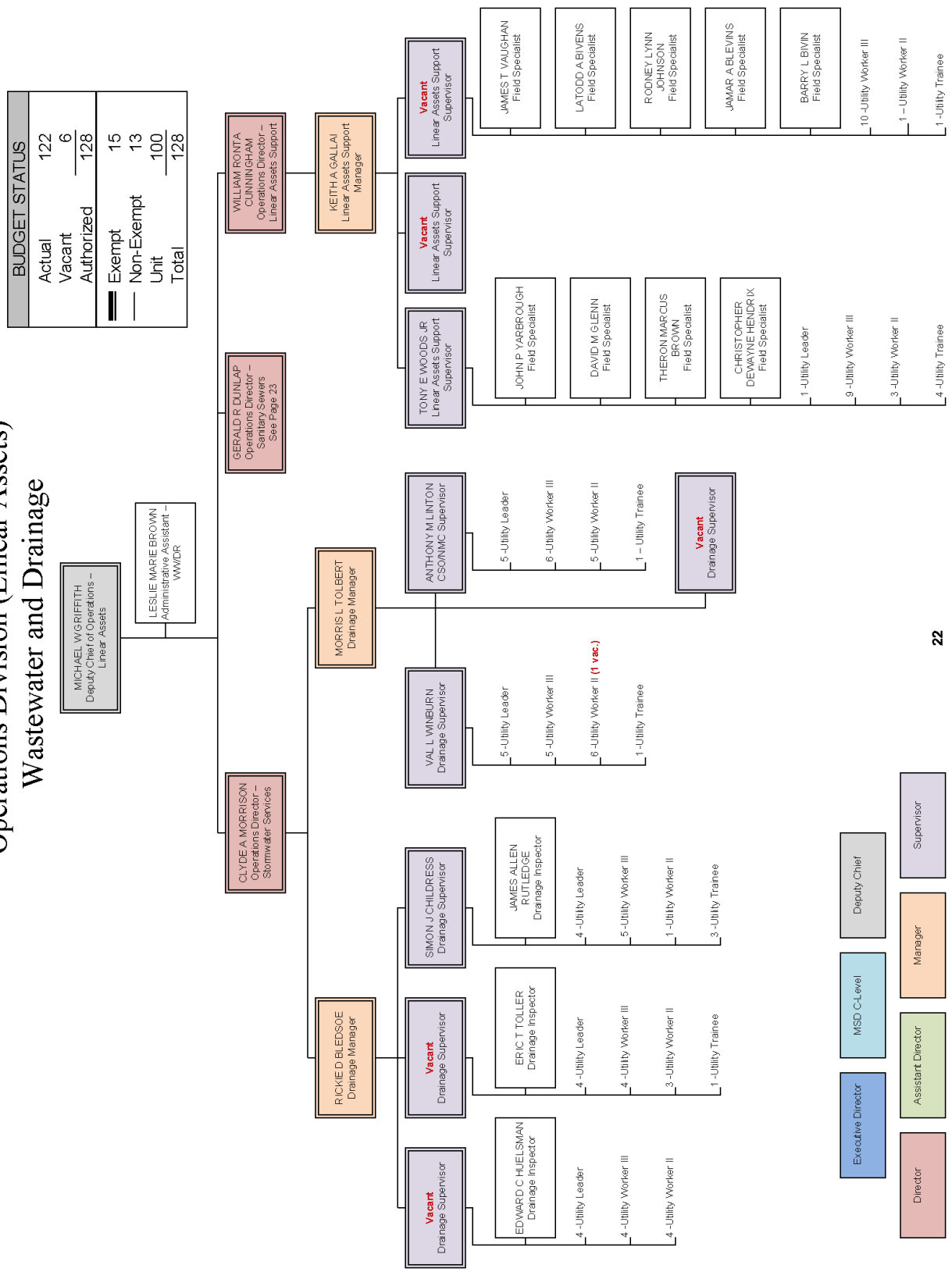

Operations Division (Vertical Assets)
Treatment Facilities
BUDGET STATUS
Actual 77
Vacant 11
Authorized 88
Exempt 19
Non-Exempt 15
Unit 54
Total 88
DAYMOND M TALLEY Operations Director – Treatment Facilities
VANESSA D GRAVES Executive Secretary
DAVID ROBERT RADKE JR Laboratory Manager
LISA MARGARET GOWN Supervising Senior Chemist
RHONDA JO GREEN Laboratory Technician IV
ALICIA LEE RICKETTS Laboratory Tech III
OLIVIA KAY WORLAND Laboratory Tech II
SHEILA L EDWARDS Laboratory Tech I
MEGAN RENEE ROTHGERBER Quality Assurance Specialist
Vacant Supervising Research Chemist
JACQUELINE C SHAVER Laboratory Tech IV
PHAEDRA A SMITH Laboratory Technician III
KAITLIN GRACE CRAIG Laboratory Tech III
ANNE MARIE DANIELS Laboratory Tech II
RANDALL LEE CLIFTON Treatment Facilities Maintenance Manager See Page 20
Vacant Process Support Supervisor
NICOLE C NEAL Process Control Operator
AARON C SMITH Process Control Operator
SHAWN MICHAEL MURPHY Process Control Operator
NORMAN D HALE III Process Control Operator
LATASHA A MCALMONT Process Control Operator
ANTOINE HAMILTON SR Process Control Operator
JOHN M KESSEL Assistant Director – Treatment Facilities
Vacant Regional Treatment Manager
STACI HUBER Process Supervisor-Operations (HCWQTC)
3 -Process Specialist
1 -Tractor-Trailer Driver (1 vac.)
JOSEPH SHAUN SMITH Process Supervisor-Operations (FFWQTC)
2 -Process Specialist
1 -Senior Operator
1 -Tractor-Trailer Driver (1 vac.)
KEVIN L THOMPSON Process Supervisor-Operations (DRGWQTC)
5 -Process Specialist
1 -Operator-in-Training
1 -Operator
WILLIAM E FORD JR Process Supervisor-Operations (CCWQTC)
4 -Process Specialist (1 vac.)
1 -Tractor-Trailer Driver (1 vac.)
ROBIN RAE BURCH Odor Control and Biosolids Program Manager
JAMES ALEXANDER SKINNER JR Operations Treatment Facilities Manager
LARRY W DUKE Process Supervisor-Operations (B Shift)
11 -Process Technician III (2 vac.)
1 -Process Technician II
MICHAEL A SCOTT Process Supervisor-Operations (C Shift)
9 -Process Technician III
1 -Process Technician II
1 -Process Technician I
CARYN M MULLIGAN Process Supervisor-Operations (A Shift)
1 -Process Specialist
6 -Process Technician III
4 -Process Technician I
Vacant Process Supervisor-Operations (B Shift)
Vacant Process Supervisor - Operations
Executive Director
MSD C-Level
Deputy Chief
Director
Assistant Director
Manager
Supervisor
19

Operations Division (Vertical Assets)
Treatment Facilities (Maintenance)



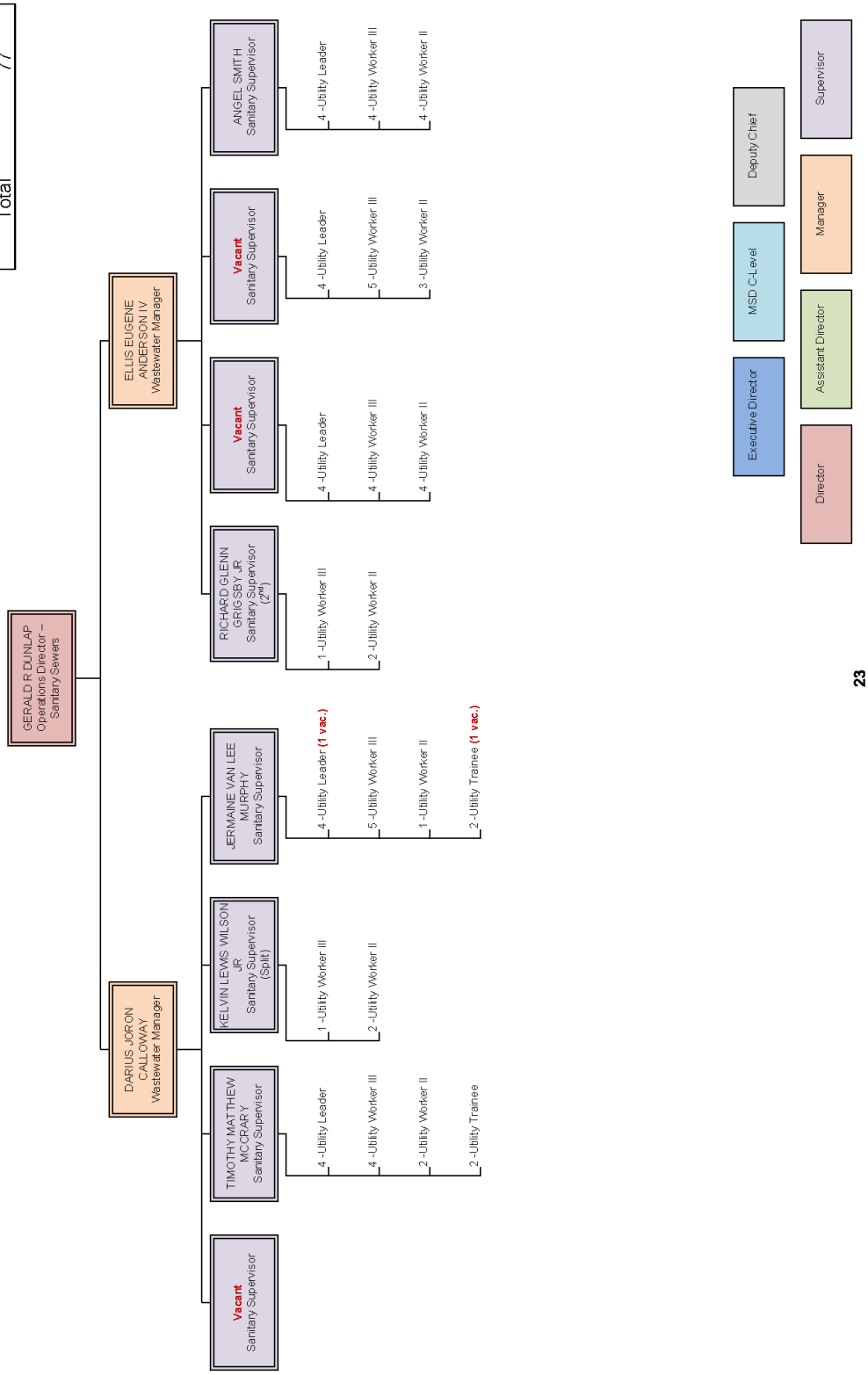

Operations Division (Vertical Assets)
Support Services
BUDGET STATUS
Actual 27
Vacant 11
Authorized 38
Exempt 13
Non-Exempt 25
Unit 0
Total 38
MICHAEL A MOORE Operations Director – Support Services
Vacant Operations Performance Manager
ELDRA PATRICIA MCWHORTER Operations Performance Administrator
Vacant Project Administrator - Operations
Vacant Project Administrator - Operations
Vacant Operations Quality Analyst
KIMBERLY EXUM DESMOND I&FP Specialist
RHONDA A CROTZER Support Services Administrator
TONYA STAR CALLAHAN I&FP Administrative Supervisor
TAMIKA N DAVIS Stormwater Scheduler
CELETHIA HAVETT NEAL I&FP Administrative Liaison
Vacant I&FP Senior Quality Analyst
SHERRY PETERS Operations Quality Analyst
Vacant Contracting and Invoicing Assistant
DWIGHT E MITCHELL Sampling and Monitoring Manager
Vacant Sampling and Monitoring Supervisor
DARRYL AYO II Operations Field Technician
RONALD SCHERER Operations Field Technician
MIRHONDA K CRAWFORD Operations Field Technician
TROY RAMONE HENDERSON SR Water Quality Technician
Vacant Water Quality Technician
JEFFERY L FIELDS Operations Field Technician
DANIEL J BAILEY Operations Field Technician
ROBERT TRENT WINLOCK Operations Field Technician
WALTER JAMES JOHNSON Water Quality Technician
Vacant Water Quality Technician
Vacant Industrial Programs Manager
BETH ANN TANNER Administrative Assistant – Industrial Waste
ADRAINE NIEHOFF RITMAN Regulatory Administrator
CHRISTOPHER HARSLEM TUTTLE Sr. Environmental Compliance Insp
JEREMY G KNIGHT Environmental Compliance Insp
ROBERT W ROSE III Environmental Compliance Insp
AMBER JOANNA PAULY Environmental Compliance Insp
ROBERT A PIFINE Hazardous Materials and Industrial Stormwater Supervisor
Vacant Sr. Environmental Compliance Insp
SCOTT L SHRADER Environmental Compliance Insp
JOHN TRACY MCQUEEN Environmental Compliance Insp
KANDYCE M GROVES FOG Program Administrator
Deputy Chief
Supervisor
MSD C-Level
Manager
Executive Director
Assistant Director
Director
21

Operations Division (Linear Assets) Wastewater and Drainage



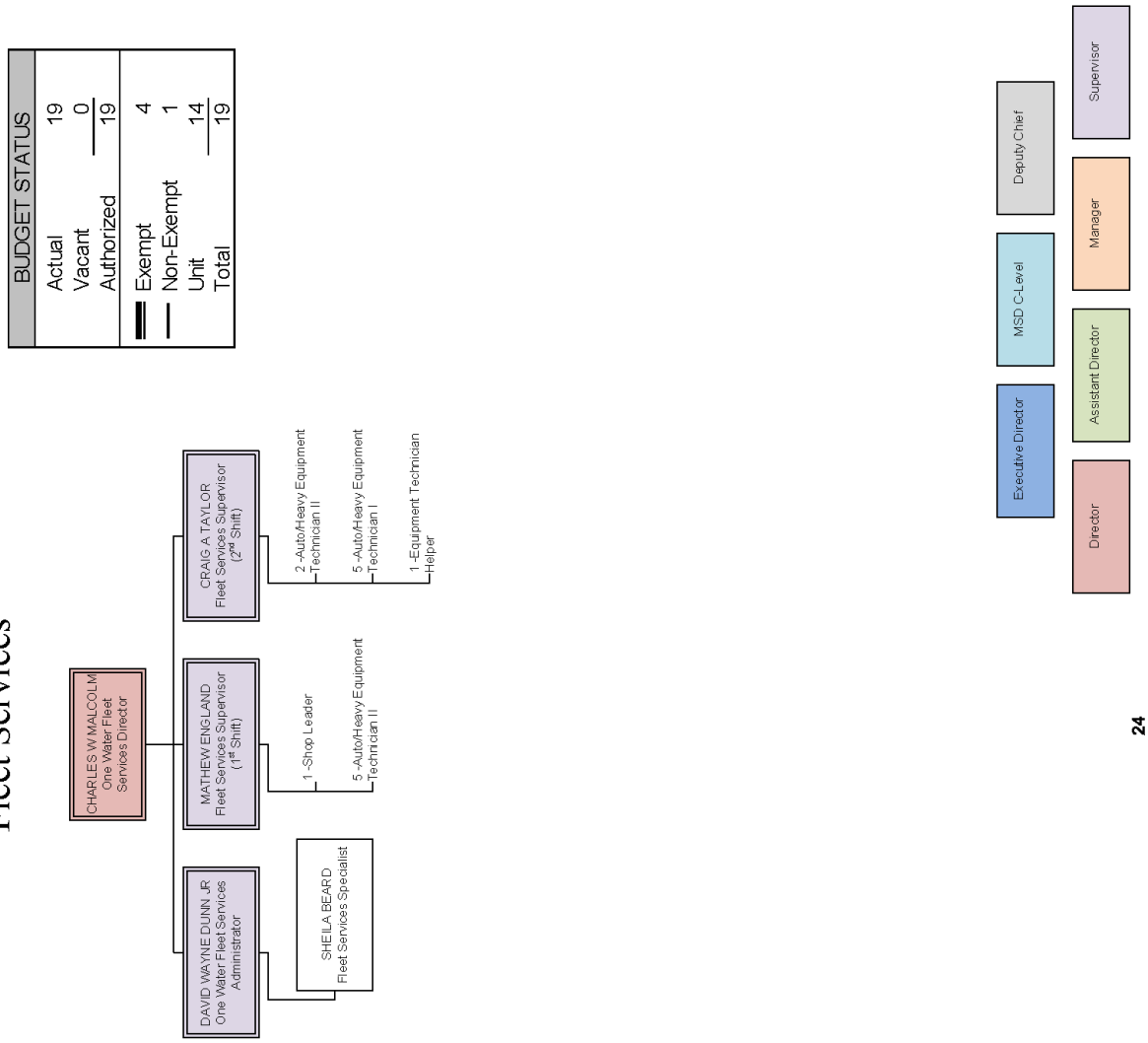
Operations Division (Linear Assets)
Wastewater and Drainage (Sanitary)

BUDGET STATUS	
Actual	72
Vacant	5
Authorized	77
Exempt	11
Non-Exempt	0
Unit	66
Total	77



23

Operations Division
Fleet Services



24

Appendix L SCAP Balance

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SECOND AMENDED CONSENT DECREE
ANNUAL REPORT FY21
JULY 1, 2020 - JUNE 30, 2021

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
CCREEK	11/1/2008	235533	MAINTENANCE WORK FY06 AUG-FY09 NOV - CEDAR CREEK	SCAPCREDIT		6,521
	12/31/2008	362688	MAINTENANCE WORK FY09A - CEDAR CREEK	SCAPCREDIT		5
	6/5/2009	236380	FAIRMOUNT ROAD MH REHAB	SCAPCREDIT		10,734
	6/30/2009	362689	MAINTENANCE WORK FY09B - CEDAR CREEK	SCAPCREDIT		201
	12/31/2009	SC1011254	MAINTENANCE WORK FY10A - CEDAR CREEK	SCAPCREDIT		347
	6/30/2010	SC1011255	MAINTENANCE WORK FY10B - CEDAR CREEK	SCAPCREDIT		194
	12/31/2010	SC1011259	MAINTENANCE WORK FY11A - CEDAR CREEK	SCAPCREDIT		1,720
	6/30/2011	SC1011262	MAINTENANCE WORK FY11B - CEDAR CREEK	SCAPCREDIT		934
	12/31/2011	SC1011264	MAINTENANCE WORK FY12A - CEDAR CREEK	SCAPCREDIT		269
	6/30/2012	SC1011267	MAINTENANCE WORK FY12B - CEDAR CREEK	SCAPCREDIT		814
	9/10/2012	SC1005519	CONTRACTED WORK FY12 - CEDAR CREEK	SCAPCREDIT		21,321
	9/27/2012	320989	LITTLE CEDAR CREEK I/I REHABIL	SCAPCREDIT		652,907
	11/30/2012	263934	ST JAMES CROSSINGS	LAT EXT	9000	(19,575)
	12/5/2012	196927	SONIC SPRINGS	LAT EXT	3600	(7,830)
	1/29/2013	350057	FMC EAST LOUISVILLE #1673-3	LAT EXT	3400	(7,395)
	6/30/2013	SC1074160	MAINTENANCE WORK FY13 JAN-JUN - CEDAR CREEK	SCAPCREDIT		4,443
	8/19/2013	SC1005524	CONTRACTED WORK FY13 - CEDAR CREEK	SCAPCREDIT		425
	12/31/2013	14SC1000	MAINTENANCE WORK FY13A - CEDAR CREEK	SCAPCREDIT		2,220
		SC1082184	MAINTENANCE WORK FY14 JUL-DEC - CEDAR CREEK	SCAPCREDIT		1,482
	6/30/2014	SC1082223	MAINTENANCE WORK FY14 JAN-JUN- CEDAR CREEK	SCAPCREDIT		4,729
	12/30/2014	SC1082493	MAINTENANCE WORK FY15 JUL-DEC-CEDAR CREEK	SCAPCREDIT		4,583
	1/26/2015	239030	POPLAR LAKES PH 1	LAT EXT	18000	(39,150)
	5/26/2015	13LE1003	Bardstown Woods Sec 6	LAT EXT	5200	(11,310)
	6/30/2015	SC1082496	MAINTENANCE WORK FY15 JAN-JUN-CEDAR CREEK	SCAPCREDIT		21
	9/14/2015	LE916330	Altawood Development	LAT EXT	1600	(3,480)
	9/25/2015	SC1003694	CONTRACTED WORK FY16 - CEDAR CREEK	SCAPCREDIT		328
		SC1006188	CONTRACTED WORK FY15 - CEDAR CREEK	SCAPCREDIT		1
	12/30/2015	SC1082497	MAINTENANCE WORK FY16 JUL-DEC-CEDAR CREEK	SCAPCREDIT		16
	5/25/2016	LE915727	BARDSTOWN WOODS SEC 7	LAT EXT	4400	(9,570)
	6/30/2016	SC1082498	MAINTENANCE WORK FY16 JAN-JUN-CEDAR CREEK	SCAPCREDIT		169
	10/26/2016	SC1006171	CONTRACTED WORK FY14 - CEDAR CREEK	SCAPCREDIT		45,900
	12/30/2016	SC1082499	MAINTENANCE WORK FY17 JUL-DEC-CEDAR CREEK	SCAPCREDIT		2,396
	6/30/2017	SC1082500	MAINTENANCE WORK FY17 JAN-JUN-CEDAR CREEK	SCAPCREDIT		3,464
	7/13/2017	SC1097042	Cedar Creek I&I Rehab FY17	SCAPCREDIT		309
	8/14/2017	LE983107	Poplar Lakes Phase 3	LAT EXT	12000	(26,100)
	10/24/2017	LE971176	Cedar Ridge	LAT EXT	18800	(40,890)
	12/30/2017	SC1082501	MAINTENANCE WORK FY18 JUL-DEC-CEDAR CREEK	SCAPCREDIT		3,067
	7/23/2019	LE1048252	Landherr Estates Phase II	LAT EXT	17600	(38,280)

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	9/12/2019	LE1015579	Glenmary Commons	LAT EXT	8800	(19,140)
		LE1049657	Little Spring Farm, Section 4B	LAT EXT	14000	(30,450)
	10/2/2019	LE978334	Houchens Industries	LAT EXT	780	(1,697)
	1/30/2020	LE1049477	Hearthstone Meadows	LAT EXT	14400	(31,320)
	2/27/2020	LE1085520	Jefferson Trace Blvd. Sewer Extension	LAT EXT	400	(870)
	9/10/2020	LE1099947	Cedar Creek Subdivision - Section 1	LAT EXT	16000	(34,800)
CCREEK Total						447,663
FFORK	11/1/2008	235557	MAINTENANCE WORK FY06 AUG-FY09 NOV - FLOYDS FORK	SCAPCREDIT		14,540
	12/31/2008	362638	MAINTENANCE WORK FY09A - FLOYDS FORK	SCAPCREDIT		1
	6/30/2009	362647	MAINTENANCE WORK FY09B - FLOYDS FORK	SCAPCREDIT		4
	12/31/2009	362651	MAINTENANCE WORK FY10A - FLOYDS FORK	SCAPCREDIT		524
	1/5/2010	230379	SHAKES RUN SECTION 4	LAT EXT	3770	(8,200)
	6/30/2010	362655	MAINTENANCE WORK FY10B - FLOYDS FORK	SCAPCREDIT		82
	12/31/2010	362661	MAINTENANCE WORK FY11A - FLOYDS FORK	SCAPCREDIT		14,163
	6/30/2011	362669	MAINTENANCE WORK FY11B - FLOYDS FORK	SCAPCREDIT		22,707
	10/12/2011	309608	BLANKENBAKER TRAIL OFFICE LN-B	LAT EXT	2880	(6,264)
	10/17/2011	242480	CLAIBOURNE CROSSINGS PHASE 2	LAT EXT	0	-
	12/31/2011	359320	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		362674	MAINTENANCE WORK FY12A - FLOYDS FORK	SCAPCREDIT		317
	3/13/2012	319027	PREMIER SURGERY CENTER	LAT EXT	5740	(12,485)
	6/30/2012	362678	MAINTENANCE WORK FY12B - FLOYDS FORK	SCAPCREDIT		338
	10/26/2012	315945	BROOKFIELD SEC 3	LAT EXT	12800	(27,840)
	12/18/2012	361689	LAKE FOREST REHAB PH1	SCAPCREDIT		174,769
	12/31/2012	362683	MAINTENANCE WORK FY13A - FLOYDS FORK	SCAPCREDIT		10
	5/8/2013	331397	BROOKFIELD SEC 2A	LAT EXT	14400	(31,320)
	6/30/2013	13SC1000	FY14 STARVIEW REHABILITATION	SCAPCREDIT		14,183
		SC1082514	MAINTENANCE WORK FY13 JAN-JUN-FLOYDS FORK	SCAPCREDIT		161
	12/30/2013	SC1082517	MAINTENANCE WORK FY14 JUL-DEC-FLOYDS FORK	SCAPCREDIT		991
	6/30/2014	SC1082518	MAINTENANCE WORK FY14 JAN-JUN-FLOYDS FORK	SCAPCREDIT		662
	12/30/2014	SC1082519	MAINTENANCE WORK FY15 JUL-DEC-FLOYDS FORK	SCAPCREDIT		1,318
	2/18/2015	13LE1062	SPEEDWAY #9451	LAT EXT	540	(1,175)
	6/30/2015	SC1003809	BERRYTOWN WQTC I/I REMEDIATION FY14	SCAPCREDIT		116,834
		SC1082520	MAINTENANCE WORK FY15 JAN-JUN-FLOYDS FORK	SCAPCREDIT		661
	11/6/2015	SC1003723	MIDDLETOWN SSR P2S2 I/I REMEDIATION	SCAPCREDIT		102
	12/30/2015	SC1082521	MAINTENANCE WORK FY16 JUL-DEC-FLOYDS FORK	SCAPCREDIT		659
	1/7/2016	LE941673	Locust Creek Section 8B	LAT EXT	2000	(4,350)
	6/30/2016	SC1082523	MAINTENANCE WORK FY16 JAN-JUN-FLOYDS FORK	SCAPCREDIT		3,578
	7/7/2016	SC1003331	CONTRACTED WORK FY16 - FLOYDS FORK	SCAPCREDIT		35

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	9/20/2016	LE932677	Shakes Run Sec 9	LAT EXT	12000	(26,100)
	12/30/2016	SC1082524	MAINTENANCE WORK FY17 JUL-DEC-FLOYDS FORK	SCAPCREDIT		1,804
	1/4/2017	LE945783	Urton Woods, Section 2B	LAT EXT	17200	(37,410)
	1/6/2017	LE983784	Catalpa Farms Subdivision	LAT EXT	16000	(34,800)
	2/27/2017	LE971261	Notting Hills Section 4 and Clubhouse	LAT EXT	10400	(22,620)
	6/30/2017	SC1082525	MAINTENANCE WORK FY17 JAN-JUN-FLOYDS FORK	SCAPCREDIT		1,320
	12/30/2017	SC1082526	MAINTENANCE WORK FY18 JUL-DEC-FLOYDS FORK	SCAPCREDIT		6,158
	1/7/2019	LE1039193	Glen Lakes Section 4 - Phase 3	LAT EXT	16400	(35,670)
	10/21/2019	LE1050932	Courtyard at Curry Farms Section 1	LAT EXT	17000	(36,975)
FFORK Total						94,712
HCREEK	5/15/2006	SC1006307	CONTRACTED WORK FY06 - HITE CREEK	SCAPCREDIT		656
	11/1/2008	235561	MAINTENANCE WORK FY06 AUG-FY09 NOV - HITE CREEK	SCAPCREDIT		6,404
	12/31/2008	362641	MAINTENANCE WORK FY09A - HITE CREEK	SCAPCREDIT		2
	6/1/2009	SC1006214	CONTRACTED WORK FY09 - HITE CREEK	SCAPCREDIT		328
	6/30/2009	362648	MAINTENANCE WORK FY09B - HITE CREEK	SCAPCREDIT		7
	12/31/2009	362652	MAINTENANCE WORK FY10A - HITE CREEK	SCAPCREDIT		10
	6/30/2010	362657	MAINTENANCE WORK FY10B - HITE CREEK	SCAPCREDIT		332
	12/17/2010	320906	FLOYDSBURG ROAD I/I REHABILITA	SCAPCREDIT		28,437
	12/31/2010	362662	MAINTENANCE WORK FY11A - HITE CREEK	SCAPCREDIT		9
	6/30/2011	362670	MAINTENANCE WORK FY11B - HITE CREEK	SCAPCREDIT		9
	9/7/2011	SC1011058	Meadow Stream Pump Station & Force Main Expansion	SCAPCREDIT		2,304,000
	9/28/2011	246638	CHAPMAN COURT S/S	LAT EXT	800	(1,740)
	12/31/2011	362675	MAINTENANCE WORK FY12A - HITE CREEK	SCAPCREDIT		340
	6/30/2012	362679	MAINTENANCE WORK FY12B - HITE CREEK	SCAPCREDIT		5,007
	8/31/2012	290181	CAMDEN WOOD APARTMENTS	LAT EXT	12400	(26,970)
	12/1/2012	304536	MAGNOLIA SPRINGS EAST PRIV P/S	LAT EXT	9500	(20,663)
	12/7/2012	335610	ROCK SPRINGS FARM SEC 4B	LAT EXT	6400	(13,920)
	12/31/2012	362684	MAINTENANCE WORK FY13A - HITE CREEK	SCAPCREDIT		7
	4/11/2013	SC1005530	CONTRACTED WORK FY13 - HITE CREEK	SCAPCREDIT		1,442
	6/30/2013	SC1082527	MAINTENANCE WORK FY13 JAN-JUN-HITE CREEK	SCAPCREDIT		967
	12/30/2013	SC1082528	MAINTENANCE WORK FY14 JUL-DEC-HITE CREEK	SCAPCREDIT		3,211
	6/30/2014	SC1082529	MAINTENANCE WORK FY14 JAN-JUNE-HITE CREEK	SCAPCREDIT		2,207
	12/30/2014	SC1082530	MAINTENANCE WORK FY15 JUL-DEC-HITE CREEK	SCAPCREDIT		360
	1/27/2015	SC1006178	CONTRACTED WORK FY14 - HITE CREEK	SCAPCREDIT		77,660
	3/13/2015	SC983697	MEADOWSTREAM REHABILITATION - FY13	SCAPCREDIT		448,447
	6/30/2015	SC1082531	MAINTENANCE WORK FY15 JAN-JUN-HITE CREEK	SCAPCREDIT		124
	12/30/2015	SC1082532	MAINTENANCE WORK FY16 JUL-DEC-HITE CREEK	SCAPCREDIT		1,191
	6/30/2016	SC1082533	MAINTENANCE WORK FY16 JAN-JUN-HITE CREEK	SCAPCREDIT		336

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	9/13/2016	LE943178	Rock Springs Farm Section 5A	LAT EXT	6800	(14,790)
	10/26/2016	SC1006192	CONTRACTED WORK FY15 - HITE CREEK	SCAPCREDIT		1
	12/30/2016	SC1082534	MAINTENANCE WORK FY17 JUL-DEC-HITE CREEK	SCAPCREDIT		3,599
	3/17/2017	LE971406	Old Henry Business Park	LAT EXT	930	(2,023)
	6/30/2017	SC1082535	MAINTENANCE WORK FY17 JAN-JUN-HITE CREEK	SCAPCREDIT		4,109
	12/30/2017	SC1082536	MAINTENANCE WORK FY18 JUL-DEC-HITE CREEK	SCAPCREDIT		6,823
HCREEK Total						2,815,919
JTOWN	11/1/2008	235563	MAINTENANCE WORK FY06 AUG-FY09 NOV - JEFFERSONTOWN	SCAPCREDIT		6,203
	12/31/2008	359323	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		4,000
	8/10/2010	254871	LAKESIDE BAPT CHURCH PRIV PS	LAT EXT	2500	(5,438)
	8/11/2011	340213	JEFFERSONTOWN ENG REHAB	SCAPCREDIT		997,448
	12/31/2011	359324	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		4,000
	12/31/2012	14SC1002	MAINTENANCE WORK FY13A - JEFFERSONTOWN	SCAPCREDIT		3,490
	5/28/2013	337261	SINGLE FAMILY 2909 PELHAM CT	LAT EXT	400	(870)
	6/28/2013	13LE1010	SWOPE HR & TRAINING BLDG	LAT EXT	400	(870)
	10/25/2013	13LE1092	BALE EQUIPMENT	LAT EXT	450	(979)
	2/27/2014	13LE1098	UNIPAK	LAT EXT	720	(1,566)
	12/31/2014	13LE1067	PARK COMMUNITY	LAT EXT	2200	(4,785)
	2/1/2016	14LE1149	Grand Lakes Section 3	LAT EXT	5600	(12,180)
	3/10/2016	LE924049	Blankenbaker Road S/S	LAT EXT	9010	(19,597)
	5/4/2016	326360	WATTERSON TRAIL CENTER	LAT EXT	2745	(5,970)
	6/21/2016	LE930127	Vantage Point Sec 3B	LAT EXT	7200	(15,660)
	7/28/2016	13LE1158	GOODWILL INDUSTRIES OF KENTUCKY	LAT EXT	400	(870)
	11/8/2016	14LE1148	Grand Lakes Section 2	LAT EXT	4400	(9,570)
	3/23/2017	LE926081	Monticello Manors Sec 2	LAT EXT	0	-
	3/31/2017	LE967619	Louis F. Zoeller, Jr Minor Plat	LAT EXT	400	(870)
JTOWN Total						935,916
MCREEK	12/31/2005	359380	CALENDAR 2005 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
	12/31/2007	359381	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		24,000
	11/1/2008	235568	MAINTENANCE WORK FY06 AUG-FY09 NOV - MILL CREEK	SCAPCREDIT		51,530
	12/31/2008	359382	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		16,000
		362642	MAINTENANCE WORK FY09A - MILL CREEK	SCAPCREDIT		93
	6/30/2009	362649	MAINTENANCE WORK FY09B - MILL CREEK	SCAPCREDIT		1,507
	9/9/2009	236614	DEVEROES	LAT EXT	960	(2,088)
	12/31/2009	359383	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		32,000
		362653	MAINTENANCE WORK FY10A - MILL CREEK	SCAPCREDIT		25,272
	1/6/2010	253586	KINGSFORD RETAIL CENTER	LAT EXT	480	(1,044)
	4/28/2010	238421	6840 DIXIE HWY OUTLOT	LAT EXT	2100	(4,568)

SECOND AMENDED CONSENT DECREE
ANNUAL REPORT FY21
JULY 1, 2020 - JUNE 30, 2021

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	6/30/2010	362658	MAINTENANCE WORK FY10B - MILL CREEK	SCAPCREDIT		6,216
	7/2/2010	259408	FAMILY DOLLAR 5105 DIXIE	LAT EXT	1200	(2,610)
	7/23/2010	264294	SAINT PETER THE APOSTLE CATHOL	LAT EXT	2000	(4,350)
	10/12/2010	276215	FAMILY DOLLAR - KRISTIN WAY	LAT EXT	400	(870)
	12/31/2010	359325	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		8,000
		359384	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		362664	MAINTENANCE WORK FY11A - MILL CREEK	SCAPCREDIT		22,745
	6/30/2011	320916	SONNE AVE PS REHABILITATION -	SCAPCREDIT		120,800
		362671	MAINTENANCE WORK FY11B - MILL CREEK	SCAPCREDIT		11,745
	10/4/2011	299399	FAMILY DOLLAR - GREENWOOD RD	LAT EXT	800	(1,740)
	11/9/2011	309018	PRP PERFORMING ARTS ADDITION	LAT EXT	1134	(2,466)
	12/31/2011	359326	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		359385	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
		362676	MAINTENANCE WORK FY12A - MILL CREEK	SCAPCREDIT		4,800
	1/19/2012	318096	CRACKER BARREL OLD COUNTRY	LAT EXT	6000	(13,050)
	3/16/2012	SC1005678	CONTRACTED WORK FY12 - MILL CREEK	SCAPCREDIT		22
	5/21/2012	262545	DIXIE MANOR SHOPPING CENTER	LAT EXT	965	(2,099)
	6/26/2012	300374	FORT KNOX FEDERAL CREDIT UNION	LAT EXT	400	(870)
	6/30/2012	361693	FY12 MILL CREEK REHAB	SCAPCREDIT		81,675
		362680	MAINTENANCE WORK FY12B - MILL CREEK	SCAPCREDIT		4,133
	7/24/2012	231800	PIONEER MOBILE HOME PARK	LAT EXT	11200	(24,360)
	9/18/2012	237457	WAVERLY HILLS	LAT EXT	400	(870)
	10/19/2012	341883	NHK SPRING PRECISION	LAT EXT	17800	(38,715)
	12/5/2012	334997	BEECHLAND BAPTIST CHURCH	LAT EXT	2715	(5,905)
	12/31/2012	359327	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		148,000
		359386	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		362685	MAINTENANCE WORK FY13A - MILL CREEK	SCAPCREDIT		22,996
	1/18/2013	343763	SOUTHEAST CHRISTIAN CHURCH SW	LAT EXT	6000	(13,050)
	3/20/2013	224875	ASHBY GREEN APARTMENT HOMES	LAT EXT	36400	(79,170)
	6/6/2013	265944	RIVERPORT PHASE 4A - MICHELIN	LAT EXT	400	(870)
	6/30/2013	SC1082559	MAINTENANCE WORK FY13 JAN-JUN-MILL CREEK	SCAPCREDIT		32,425
	9/10/2013	314887	DAYTON FREIGHT	LAT EXT	1200	(2,610)
	9/26/2013	13LE1014	LOUISVILLE FREE PUBLIC LIBRARY SOUTHWEST	LAT EXT	2400	(5,220)
	10/3/2013	357140	FAMILY DOLLAR CANE RUN ROAD	LAT EXT	832	(1,810)
	12/30/2013	SC1082560	MAINTENANCE WORK FY14 JUL-DEC-MILL CREEK	SCAPCREDIT		11,451
	1/29/2014	13LE1171	SINGLE FAMILY HOME 3700 ROMANIA DR	LAT EXT	400	(870)
	6/30/2014	SC1082562	MAINTENANCE WORK FY14 JAN-JUN-MILL CREEK	SCAPCREDIT		7,753
	12/30/2014	SC1082563	MAINTENANCE WORK FY15 JUL-DEC-MILL CREEK	SCAPCREDIT		4,491

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	3/10/2015	SC1005536	ROSA TERRACE I/I REHABILITATION FY13	SCAPCREDIT		156,635
	6/30/2015	SC1082564	MAINTENANCE WORK FY15 JAN-JUN-MILL CREEK	SCAPCREDIT		4,861
	7/31/2015	SC1003690	CONTRACTED WORK FY15 - MILL CREEK	SCAPCREDIT		58
	12/30/2015	SC1082565	MAINTENANCE WORK FY16 JUL-DEC-MILL CREEK	SCAPCREDIT		6,692
	6/30/2016	SC1082566	MAINTENANCE WORK FY16 JAN-JUN-MILL CREEK	SCAPCREDIT		3,523
	7/28/2016	LE944727	Britz Deer Hollow Lane	LAT EXT	800	(1,740)
	12/30/2016	SC1082567	MAINTENANCE WORK FY17 JUL-DEC-MILL CREEK	SCAPCREDIT		12,857
	6/30/2017	SC1082568	MAINTENANCE WORK FY17 JAN-JUN-MILL CREEK	SCAPCREDIT		5,103
	12/30/2017	SC1082569	MAINTENANCE WORK FY18 JUL-DEC-MILL CREEK	SCAPCREDIT		27,293
	4/10/2019	LE995375	1105 Dorsey lane	LAT EXT	10300	(22,403)
	10/31/2019	LE1039415	Delcour Multi-Family Apartments	LAT EXT	60400	(131,370)
MCREEK Total						533,958
MFORK	12/31/2007	359328	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		20,000
		359400	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		84,000
	11/1/2008	235566	MAINTENANCE WORK FY06 AUG-FY09 NOV - MOIDDLE FORK	SCAPCREDIT		43,779
	12/31/2008	359329	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		8,000
		SC1011287	MAINTENANCE WORK FY09A - MIDDLE FORK	SCAPCREDIT		13
	1/16/2009	236517	ANCHOR ESTATES MH REHAB	SCAPCREDIT		15,552
	3/30/2009	217235	SINKING FORK ICA PHASE I REHAB	SCAPCREDIT		437,967
	5/15/2009	235376	MIDDLE FORK INT REHAB PH1	SCAPCREDIT		487,744
	5/26/2009	179246	SHADY GLEN OF LYNDON PERSONAL	LAT EXT	-500	1,088
	6/30/2009	SC1011288	MAINTENANCE WORK FY09B - MIDDLE FORK	SCAPCREDIT		4,208
	11/4/2009	250572	1316 WITAWANGA AVE	LAT EXT	400	(870)
	12/31/2009	359331	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		24,000
		359401	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		SC1011290	MAINTENANCE WORK FY10A - MIDDLE FORK	SCAPCREDIT		50
	3/16/2010	197432	ALMOST HOME KENNELS - ALL PET	LAT EXT	3700	(8,048)
	4/15/2010	260064	OXMOOR GOLF FRONT 9	LAT EXT	400	(870)
		260065	OXMOOR GOLF BACK 9	LAT EXT	400	(870)
	4/27/2010	229834	THE BROOK HOS- DUPONT ADDITION	LAT EXT	1763	(3,835)
	6/30/2010	SC1011292	MAINTENANCE WORK FY10B - MIDDLE FORK	SCAPCREDIT		1,113
	7/2/2010	265723	Z-XPRESS CAR WASH	LAT EXT	5449	(11,852)
	7/14/2010	255792	HERR LANE APARTMENTS - 8 PLEX	LAT EXT	2400	(5,220)
		255793	HERR LANE APARTMENTS - 4 PLEX	LAT EXT	1200	(2,610)
	9/9/2010	274303	FARM CREDIT SERVICES	LAT EXT	525	(1,142)
	12/15/2010	278015	METROPOLITAN UROLOGY	LAT EXT	400	(870)
	12/31/2010	359333	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		359402	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		8,000

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
		SC1011293	MAINTENANCE WORK FY11A - MIDDLE FORK	SCAPCREDIT		1,205
	1/20/2011	285637	SHELBYHURST OFFICE BUILDING 1	LAT EXT	6600	(14,355)
	1/27/2011	313465	DORSEY POINTE/CODOMINIUMS 8-13	LAT EXT	2400	(5,220)
	4/14/2011	291263	BROWNS LANE BUILDING	LAT EXT	400	(870)
	6/14/2011	293400	FOUR PLEX APARTMENTS	LAT EXT	1200	(2,610)
	6/30/2011	SC1011294	MAINTENANCE WORK FY11B - MIDDLE FORK	SCAPCREDIT		7,183
	8/11/2011	330019	FY11 ANCHOR ESTATES REHAB	SCAPCREDIT		1,359
	10/31/2011	310046	EL NAPEL - MCMAHAN CENTER	LAT EXT	3100	(6,743)
	11/29/2011	314591	CHOCOLATE MARTINI BAR/REST	LAT EXT	3275	(7,123)
	12/27/2011	320983	HURSTBOURNE I/I INVESTIGATION	SCAPCREDIT		1,408,279
	12/31/2011	359335	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		16,000
		SC1011295	MAINTENANCE WORK FY12A - MIDDLE FORK	SCAPCREDIT		919
	2/15/2012	321228	SINGLE FAMILY UNIT	LAT EXT	400	(870)
	3/16/2012	SC1005671	CONTRACTED WORK FY12 - MIDDLE FORK	SCAPCREDIT		7,305
	3/27/2012	321647	SINGLE FAMILY	LAT EXT	400	(870)
	6/22/2012	328074	SINGLE FAMILY-703 FOUNTAIN AVE	LAT EXT	400	(870)
	6/30/2012	SC1011297	MAINTENANCE WORK FY12B - MIDDLE FORK	SCAPCREDIT		949
	8/20/2012	193195	CEDAR LAKE LODGE WASHBURN	LAT EXT	1900	(4,133)
	8/23/2012	320923	ST MATTHEWS I/I REHABILITATION	SCAPCREDIT		20,841
	9/5/2012	337796	CHAMPPS	LAT EXT	635	(1,381)
	12/28/2012	347126	ADVANCE PRODUCTION SYSTEMS	LAT EXT	400	(870)
	12/31/2012	14SC1003	MAINTENANCE WORK FY13A - MIDDLE FORK	SCAPCREDIT		3,309
		359336	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		92,000
	1/4/2013	339367	BAPTIST RADIATION ONCOLOGY	LAT EXT	1500	(3,263)
	1/16/2013	340778	PANDA RESTAURANT	LAT EXT	1725	(3,752)
	2/4/2013	328659	SINGLE FAMILY HOME - 6911 AMBR	LAT EXT	400	(870)
	2/20/2013	352805	POOL HOUSE 9213 REIGATE COURT	LAT EXT	200	(435)
	3/19/2013	14LE1001	MIRANDA LAGRANGE RD	LAT EXT	400	(870)
	3/20/2013	350246	SINGLE FAMILY - 218 BLISS AVE	LAT EXT	400	(870)
	3/26/2013	349974	SINGLE FAMILY 205 N WATTERSON	LAT EXT	400	(870)
	4/15/2013	342433	SHELBYHURST 700 OFFICE BLDG	LAT EXT	7500	(16,313)
	4/16/2013	350340	JARED THE GALLERY OF JEWELRY	LAT EXT	770	(1,675)
	5/30/2013	SC1005532	CONTRACTED WORK FY13 - MIDDLE FORK	SCAPCREDIT		6,480
	6/7/2013	13LE1009	Single family 11716 Wetherby Ave	LAT EXT	400	(870)
	6/30/2013	SC1082545	MAINTENANCE WORK FY13 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		6,989
	8/28/2013	13LE1001	Single Family 835 Fountain Ave	LAT EXT	400	(870)
	9/10/2013	355162	PROPOSED RESTAURANT	LAT EXT	7540	(16,400)
	9/30/2013	13LE1045	SINGLE FAMILY 8325 WHIPPS MILL RD	LAT EXT	400	(870)

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	10/22/2013	319292	WATERMARK ON HURSTBOURNE	LAT EXT	71600	(155,730)
	10/28/2013	331542	DENTAL/MEDICAL OFFICE BLDG	LAT EXT	400	(870)
	11/5/2013	13LE1128	SINGLE FAMILY HOME 1327 ETAWAH AVE	LAT EXT	400	(870)
		13LE1144	SINGLE FAMILY 1329 ETAWAH AVE	LAT EXT	400	(870)
	11/25/2013	13LE1165	SINGLE FAMILY 8504 LORE LANE	LAT EXT	400	(870)
	11/26/2013	13LE1146	CITY OF ST MATTHEWS COMMUNITY CTR PARK RESTROOM	LAT EXT	1500	(3,263)
	12/11/2013	13LE1099	NICKLIES - ST MATTHEWS	LAT EXT	1920	(4,176)
	12/18/2013	353963	DORSEY COMMONS TRACTS 1,2,3	LAT EXT	1960	(4,263)
	12/30/2013	SC1082546	MAINTENANCE WORK FY14 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		91,183
	12/31/2013	352026	MCMAHAN PLAZA PHASE II BLDG B	LAT EXT	766	(1,666)
	4/10/2014	13LE1117	THE VININGS	LAT EXT	850	(1,849)
	6/30/2014	14LE1128	WALDORF SCHOOL OF LOUISVILLE	LAT EXT	400	(870)
		SC1082547	MAINTENANCE WORK FY14 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		4,404
	12/30/2014	SC1082548	MAINTENANCE WORK FY15 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		3,664
	2/10/2015	SC1006201	GOOSE CREEK PLANTATION I/I REHABILITATION FY14	SCAPCREDIT		163,919
	2/11/2015	SC1006179	CONTRACTED WORK FY14 - MIDDLE FORK	SCAPCREDIT		15,043
	6/30/2015	SC1082549	MAINTENANCE WORK FY15 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		2,568
	12/30/2015	SC1082550	MAINTENANCE WORK FY16 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		15,216
	6/8/2016	LE939199	Westport Road Apartments	LAT EXT	62800	(136,590)
	6/30/2016	SC1082552	MAINTENANCE WORK FY16 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		3,573
	8/30/2016	LE971405	Lyndon Lane Office Condos	LAT EXT	2652	(5,768)
	10/18/2016	SC1003387	CONTRACTED WORK FY16 - MIDDLE FORK	SCAPCREDIT		91,264
	10/24/2016	SC1006194	CONTRACTED WORK FY15 - MIDDLE FORK	SCAPCREDIT		3
	12/20/2016	LE938563	The Paddock at Sawyer Park	LAT EXT	99800	(217,065)
	12/30/2016	SC1082554	MAINTENANCE WORK FY17 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		2,385
	5/9/2017	LE1005641	City of Anchorage Sewer Extension	LAT EXT	800	(1,740)
	6/30/2017	SC1082555	MAINTENANCE WORK FY17 JAN-JUN-MIDDLE FORK BEARGRAS	SCAPCREDIT		3,799
	12/30/2017	SC1082557	MAINTENANCE WORK FY18 JUL-DEC-MIDDLE FORK BEARGRAS	SCAPCREDIT		5,851
	2/19/2018	LE1017531	526 & 528 Fountain Ave	LAT EXT	800	(1,740)
	9/7/2018	166053	616 & 618 FOUNTAIN AVE S/S	LAT EXT	400	(870)
	7/26/2019	LE1020250	LFPL - Northeast Regional Library	LAT EXT	800	(1,740)
		LE1024084	Morat Avenue Apartments	LAT EXT	62250	(135,394)
	11/4/2019	LE1083952	1700 Cold Spring Rd & 12004 Osage Rd	LAT EXT	800	(1,740)
	4/24/2020	LE1059259	904 Browns Lane	LAT EXT	1600	(3,480)
	8/28/2020	LE1010450	Ormsby Lane Senior Apartments	LAT EXT	11900	(25,883)
	10/5/2020	LE1090567	4229 Taylorsville Road	LAT EXT	11200	(24,360)
MFORK Total						2,265,507
NDITCH	12/31/2007	359404	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		28,000

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	11/1/2008	235569	MAINTENANCE WORK FY06 AUG-FY09 NOV - NORTHERN DIT	SCAPCREDIT		11,147
	11/25/2008	236363	NORTHERN DITCH INT REHAB PH1	SCAPCREDIT		108,760
	12/31/2008	SC1011338	MAINTENANCE WORK FY09A - NORTHERN DITCH	SCAPCREDIT		11
	6/30/2009	SC1011339	MAINTENANCE WORK FY09B - NORTHERN DITCH	SCAPCREDIT		1,884
	12/31/2009	359339	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		SC1011340	MAINTENANCE WORK FY10A - NORTHERN DITCH	SCAPCREDIT		1,177
	3/5/2010	234678	THE LIGHTHOUSE PROMISE COMPLEX	LAT EXT	2825	(6,144)
	6/30/2010	SC1011343	MAINTENANCE WORK FY10B - NORTHERN DITCH	SCAPCREDIT		2,532
	12/21/2010	284728	SUBWAY - NEW CUT RD	LAT EXT	1314	(2,858)
	12/31/2010	359340	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		SC1011344	MAINTENANCE WORK FY11A - NORTHERN DITCH	SCAPCREDIT		2,456
	6/28/2011	320908	PARKVIEW ESTATES REHABILITATIO	SCAPCREDIT		36
	6/30/2011	SC1011345	MAINTENANCE WORK FY11B - NORTHERN DITCH	SCAPCREDIT		1,989
	11/11/2011	312810	WILLOW PLACE APT COMMUNITY CEN	LAT EXT	400	(870)
	12/31/2011	359341	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		24,000
		359405	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
		SC1011346	MAINTENANCE WORK FY12A - NORTHERN DITCH	SCAPCREDIT		911
	1/26/2012	315723	JCPS EARLY CHILDHOOD DEVELOP	LAT EXT	6000	(13,050)
	3/21/2012	312057	DOLLAR GENERAL - MEDALLION CT	LAT EXT	400	(870)
	6/30/2012	SC1011336	MAINTENANCE WORK FY12B - NORTHERN DITCH	SCAPCREDIT		7,893
	8/20/2012	312659	KROGER L-350 FUEL STATION	LAT EXT	400	(870)
	12/31/2012	14SC1004	MAINTENANCE WORK FY13A - NORTHERN DITCH	SCAPCREDIT		4,239
		359343	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		24,000
	6/30/2013	SC1082570	MAINTENANCE WORK FY13 JAN-JUN-NORTH DITCH	SCAPCREDIT		6,459
	12/5/2013	13LE1147	CARLON ROOFING	LAT EXT	992	(2,158)
	12/12/2013	13LE1126	JENNINGS CROSSING TRACT 3	LAT EXT	2100	(4,568)
	12/30/2013	SC1082571	MAINTENANCE WORK FY14 JUL-DEC-NORTH DITCH	SCAPCREDIT		2,707
	6/30/2014	SC1082572	MAINTENANCE WORK FY14 JAN-JUN-NORTH DITCH	SCAPCREDIT		9,044
	10/21/2014	SC1006180	CONTRACTED WORK FY14 - NORTHERN DITCH	SCAPCREDIT		5
	12/30/2014	SC1082573	MAINTENANCE WORK FY15 JUL-DEC-NORTH DITCH	SCAPCREDIT		8,330
	6/30/2015	SC1082575	MAINTENANCE WORK FY15 JAN-JUN-NORTH DITCH	SCAPCREDIT		5,564
	12/30/2015	SC1082576	MAINTENANCE WORK FY16 JUL-DEC-NORTH DITCH	SCAPCREDIT		6,074
	6/30/2016	SC1082577	MAINTENANCE WORK FY16 JAN-JUN-NORTH DITCH	SCAPCREDIT		5,519
	12/30/2016	SC1082578	MAINTENANCE WORK FY17 JUL-DEC-NORTH DITCH	SCAPCREDIT		9,266
	6/30/2017	SC1082579	MAINTENANCE WORK FY17 JAN-JUN-NORTH DITCH	SCAPCREDIT		6,441
	12/30/2017	SC1082580	MAINTENANCE WORK FY18 JUL-DEC-NORTH DITCH	SCAPCREDIT		7,810
NDITCH Total						274,866
ORFM	12/31/2007	359344	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		4,000

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
		359433	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		56,000
	11/1/2008	235572	MAINTENANCE WORK FY06 AUG-FY09 NOV - ORFM	SCAPCREDIT		19,826
	12/31/2008	362643	MAINTENANCE WORK FY09A - ORFM	SCAPCREDIT		2
	6/30/2009	362650	MAINTENANCE WORK FY09B - ORFM	SCAPCREDIT		3,835
	12/31/2009	362654	MAINTENANCE WORK FY10A - ORFM	SCAPCREDIT		7,330
	5/18/2010	263548	SINGLE FAMILY CONNECTION	LAT EXT	400	(870)
	6/28/2010	213488	NORTHEAST CHRISTIAN CHURCH	LAT EXT	10000	(21,750)
	6/30/2010	362660	MAINTENANCE WORK FY10B - ORFM	SCAPCREDIT		6,773
	8/30/2010	254919	TRILOGY HEALTH SERVICES, LLC	LAT EXT	8200	(17,835)
	12/31/2010	362665	MAINTENANCE WORK FY11A - ORFM	SCAPCREDIT		181
	6/30/2011	362672	MAINTENANCE WORK FY11B - ORFM	SCAPCREDIT		4,139
	9/20/2011	280837	SPRINGHURST TOWNE CTR LOT C	LAT EXT	400	(870)
	9/30/2011	320920	SHADOW WOOD I/I REHABILITATION	SCAPCREDIT		14,279
	10/14/2011	311412	SPRINGHURST CHEVROLET	LAT EXT	855	(1,860)
	12/31/2011	359345	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		16,000
		359434	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		16,000
		362677	MAINTENANCE WORK FY12A - ORFM	SCAPCREDIT		7,268
	3/1/2012	320921	DERINGTON COURT I/I REHABILITA	SCAPCREDIT		56,208
	3/5/2012	187028	GLENVIEW PARK SUBD SECTION 1	LAT EXT	4400	(9,570)
		213450	GLENVIEW PARK SUB, SEC 2	LAT EXT	5600	(12,180)
	3/12/2012	322455	FIRST LADY NAILS	LAT EXT	400	(870)
	6/30/2012	362681	MAINTENANCE WORK FY12B - ORFM	SCAPCREDIT		19,941
		SC1011315	MAINTENANCE WORK FY12B - ORFM	SCAPCREDIT		19,941
	7/5/2012	292239	SPRINGHURST RESTAURANT/ RETAIL	LAT EXT	3440	(7,482)
	12/11/2012	323821	TIRE DISCOUNTERS WESTPORT RD	LAT EXT	400	(870)
	12/18/2012	341319	RAISING CANES RETAIL CENTER	LAT EXT	1225	(2,664)
		363238	FY13 PROSPECT MANHOLE REHAB	SCAPCREDIT		72,703
	12/31/2012	359346	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		24,000
		362686	MAINTENANCE WORK FY13A - ORFM	SCAPCREDIT		1,161
		363235	FY13 MUDDY FORK MH REHAB	SCAPCREDIT		41,653
	3/12/2013	322458	KROGER L-707 STORE EXPANSION	LAT EXT	400	(870)
	5/13/2013	360262	SINGLE FAMILY 3419 HILLVALE RD	LAT EXT	400	(870)
	6/21/2013	343729	RETAIL & RESTAURANT	LAT EXT	3500	(7,613)
	6/30/2013	SC1082581	MAINTENANCE WORK FY13 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		279
	11/7/2013	334154	GLENVIEW PARK SUBD SEC 4	LAT EXT	3600	(7,830)
	12/30/2013	SC1082582	MAINTENANCE WORK FY14 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		1,302
	12/31/2013	13LE1024	Overlook at Beech Spring Farm Sec 4	LAT EXT	5600	(12,180)
	3/11/2014	199896	SPRINGDALE OFFICE BUILDING	LAT EXT	4210	(9,157)

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	5/16/2014	225863	SPRING FARM LAKES SEC 1	LAT EXT	4800	(10,440)
	6/30/2014	SC1082583	MAINTENANCE WORK FY14 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		1,293
	9/22/2014	177756	SUMMIT GARDENS PHASE 1	LAT EXT	32000	(69,600)
	11/10/2014	14LE1121	Riverside Sewer Extension	LAT EXT	1200	(2,610)
	12/30/2014	SC1082584	MAINTENANCE WORK FY15 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		4,394
	12/31/2014	SC1006181	CONTRACTED WORK FY14 - ORFM	SCAPCREDIT		1,654
	1/16/2015	13LE1071	SPRING FARM LAKE SEC 2	LAT EXT	6000	(13,050)
	2/12/2015	352634	BAUER PROPERTY	LAT EXT	2920	(6,351)
	6/30/2015	SC1082585	MAINTENANCE WORK FY15 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		2,547
	7/12/2015	SC983704	PROSPECT I&I REHABILITATION - FY13 PHASE IA	SCAPCREDIT		1,034,758
	8/5/2015	SC1003730	RIVER ROAD I/I REMEDIATION	SCAPCREDIT		120,418
	10/21/2015	LE929244	Summit Gardens Phase 2	LAT EXT	18000	(39,150)
	11/19/2015	SC1006195	CONTRACTED WORK FY15 - ORFM	SCAPCREDIT		1
	12/14/2015	LE938166	Spring Farm Lake Section 3	LAT EXT	3200	(6,960)
	12/30/2015	SC1082586	MAINTENANCE WORK FY16 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		1,478
	6/30/2016	SC1082587	MAINTENANCE WORK FY16 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		460
		SC1082589	MAINTENANCE WORK FY17 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		3,171
	8/10/2016	SC1003696	CONTRACTED WORK FY16 - ORFM	SCAPCREDIT		17,566
	10/6/2016	SC1003728	PROSPECT I&I REHABILITATION - FY16 PHASE IB	SCAPCREDIT		199,036
	11/16/2016	LE923204	Indian Springs Hotel	LAT EXT	13000	(28,275)
	6/30/2017	SC1082590	MAINTENANCE WORK FY17 JAN-JUN-OHIO RIVER FORCE MAI	SCAPCREDIT		1,630
	12/30/2017	SC1082592	MAINTENANCE WORK FY18 JUL-DEC-OHIO RIVER FORCE MAI	SCAPCREDIT		3,330
	12/6/2019	LE971285	Cityscape - Simcoe Lane	LAT EXT	66700	(145,073)
	6/16/2020	LE937450	Poplar Hill Place	LAT EXT	4000	(8,700)
ORFM Total						1,339,007
PCREEK	11/1/2008	235574	MAINTENANCE WORK FY06 AUG-FY09 NOV - POND CREEK	SCAPCREDIT		71,782
	12/31/2008	359347	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359438	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
		SC1011298	MAINTENANCE WORK FY09A - POND CREEK	SCAPCREDIT		1,913
	6/30/2009	SC1011299	MAINTENANCE WORK FY09B - POND CREEK	SCAPCREDIT		6,403
	12/31/2009	359348	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359439	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		12,000
		SC1011305	MAINTENANCE WORK FY10A - POND CREEK	SCAPCREDIT		22,337
	2/17/2010	192513	BANNON CROSSINGS SECTION 3A-1	LAT EXT	800	(1,740)
	3/26/2010	219734	DSL LIFE LONG LEARNING CENTER	LAT EXT	900	(1,958)
	4/27/2010	261115	EMERGENCY RESTORATION	LAT EXT	400	(870)
	6/30/2010	SC1011307	MAINTENANCE WORK FY10B - POND CREEK	SCAPCREDIT		11,060
	10/13/2010	276977	DADISMAN BUILDERS-POPLAR TREE	LAT EXT	400	(870)

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	12/1/2010	266833	THORNTONS @ PRESTON HWY	LAT EXT	400	(870)
	12/29/2010	280751	NOTTINGTON HILLS SEC 1	LAT EXT	4400	(9,570)
	12/31/2010	359350	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		SC1011308	MAINTENANCE WORK FY11A - POND CREEK	SCAPCREDIT		19,773
	1/13/2011	187739	GLENGARRY INDUSTRIAL PARK	LAT EXT	4300	(9,353)
	3/21/2011	277777	TIRE DISCOUNTERS - BOERSTE WAY	LAT EXT	2960	(6,438)
	6/30/2011	SC1011309	MAINTENANCE WORK FY11B - POND CREEK	SCAPCREDIT		10,562
	9/14/2011	304408	UPS SUPPLY CHAIN SOLUTIONS #7	LAT EXT	2250	(4,894)
	9/27/2011	320918	EDSEL I/I REHABILITATION - FY1	SCAPCREDIT		106,700
	11/4/2011	313444	PLANET FITNESS - JEFF BLVD	LAT EXT	1600	(3,480)
	11/29/2011	312391	LONGHORN STEAKHOUSE RESTAURANT	LAT EXT	4840	(10,527)
	12/29/2011	320919	LANTANA I/I REHABILITATION - F	SCAPCREDIT		5,000
	12/31/2011	359351	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		20,000
		SC1011310	MAINTENANCE WORK FY12A - POND CREEK	SCAPCREDIT		5,380
	2/28/2012	310845	ZAXBY'S RESTAURANT	LAT EXT	3750	(8,156)
	3/13/2012	255044	ISA-RECYCLING CENTER	LAT EXT	400	(870)
	3/19/2012	312814	MILLER TRANSPORTATION	LAT EXT	1800	(3,915)
	4/16/2012	324554	NORTONS TEMPORARY OFFICE	LAT EXT	900	(1,958)
	6/19/2012	234102	ETHOS AT VALLEY FARM SR LIVING	LAT EXT	7050	(15,334)
	6/21/2012	322367	SHEPHERDS CARE MEMORY HOME	LAT EXT	2000	(4,350)
	6/30/2012	SC1011313	MAINTENANCE WORK FY12B - POND CREEK	SCAPCREDIT		3,877
	8/6/2012	307332	LOUISVILLE INDUSTRIAL BLDG B	LAT EXT	2520	(5,481)
	8/10/2012	279860	BANNON CROSSINGS SEC 3B-2	LAT EXT	9600	(20,880)
		SC1005684	CONTRACTED WORK FY12 - POND CREEK	SCAPCREDIT		3,812
	8/13/2012	312053	DOLLAR GENERAL - CLEARWATER FA	LAT EXT	400	(870)
	10/12/2012	343455	SINGLE FAMILY 1812 GREYLING DR	LAT EXT	400	(870)
	11/9/2012	243109	OVERBROOK APARTMENTS	LAT EXT	41200	(89,610)
	12/31/2012	14SC1005	MAINTENANCE WORK FY13A - POND CREEK	SCAPCREDIT		25,984
		359354	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		56,000
	2/20/2013	329624	COPART	LAT EXT	400	(870)
	5/2/2013	346082	ZAXBYS	LAT EXT	2065	(4,491)
	6/30/2013	320924	LEA ANN WAY INTERCEPTOR I&I RE	SCAPCREDIT		1,017,423
		SC1082593	MAINTENANCE WORK FY13 JAN-JUN-POND CREEK	SCAPCREDIT		41,995
	7/2/2013	335385	HARRISON LOW PRESSURE S/S	LAT EXT	1600	(3,480)
	7/12/2013	SC1005534	PICADILLY I/I REHABILITATION FY13	SCAPCREDIT		187,564
	8/16/2013	320940	4 RESIDENCE SFU 7821 MANSLICK	LAT EXT	400	(870)
	8/27/2013	SC1005538	CONTRACTED WORK FY13 - POND CREEK	SCAPCREDIT		18,958
	9/6/2013	324886	PNC BANK	LAT EXT	400	(870)

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
		361336	RENAISSANCE SOUTH BUSINESS	LAT EXT	540	(1,175)
	9/26/2013	13LE1083	SINGLE FAMILY HOME 5402 (H) E MANSLICK RD	LAT EXT	400	(870)
	11/12/2013	SC1005319	FEGENBUSH I/I REHABILITATION FY13	SCAPCREDIT		226,201
	12/9/2013	353125	PEGASUS TRANSPORTATION	LAT EXT	250	(544)
	12/10/2013	308206	APPLEGATE FARMS	LAT EXT	57200	(124,410)
		341439	PRESTON GARDENS APTS	LAT EXT	22200	(48,285)
	12/30/2013	SC1082594	MAINTENANCE WORK FY14 JUL-DEC-POND CREEK	SCAPCREDIT		19,491
	2/14/2014	13LE1179	TIMBERBEND SUBDIVISION SEC 5B	LAT EXT	6400	(13,920)
	4/10/2014	13LE1035	RENAISSANCE SOUTH BUSINESS PARK TRACT 4	LAT EXT	5415	(11,778)
	4/24/2014	348014	ASHTON PARK TOWN HOMES	LAT EXT	9000	(19,575)
	5/16/2014	280180	LOUISVILLE INDUSTRIAL CTR F	LAT EXT	2480	(5,394)
	5/28/2014	14LE1085	Williams Properties - Self Storage Facility	LAT EXT	400	(870)
	6/9/2014	13LE1034	6300 GEIL LANE WAREHOUSE	LAT EXT	720	(1,566)
	6/30/2014	SC1082595	MAINTENANCE WORK FY14 JAN-JUN-POND CREEK	SCAPCREDIT		14,457
	7/7/2014	284215	HURSTBOURNE POINTE APTS	LAT EXT	9600	(20,880)
	8/25/2014	344230	AUSTIN PARK APARTMENTS PH6	LAT EXT	27600	(60,030)
	8/29/2014	14LE1177	Valley Farm Subd.	LAT EXT	0	-
	11/13/2014	13LE1105	JEFFERSON COMMONS	LAT EXT	17075	(37,138)
	11/18/2014	SC1005323	FERN CREEK I/I REHABILITATION FY13	SCAPCREDIT		551,108
	12/30/2014	SC1082596	MAINTENANCE WORK FY15 JUL-DEC-POND CREEK	SCAPCREDIT		26,095
	1/13/2015	13LE1017	APEX ON PRESTON APT HOMES(Formally CITYSCAPE APTS	LAT EXT	84400	(183,570)
	3/10/2015	SC1005541	STONY BROOK I/I REHABILITATION FY13	SCAPCREDIT		345,397
	3/11/2015	SC995942	CAVEN AVE I/I REMEDIATION - FY13	SCAPCREDIT		225,645
	4/29/2015	354207	COOPER FARMS SEC 11B	LAT EXT	12400	(26,970)
		354209	COOPER FARMS SEC 11A	LAT EXT	13200	(28,710)
	6/30/2015	SC1082597	MAINTENANCE WORK FY15 JAN-JUN-POND CREEK	SCAPCREDIT		10,279
	8/25/2015	13LE1086	WOODS OF PENN RUN OFFSITE SS	LAT EXT	1000	(2,175)
	10/2/2015	13LE1140	JEFFERSON POST APARTMENTS	LAT EXT	28800	(62,640)
	12/30/2015	14LE1116	CATALPA SPRINGS	LAT EXT	2800	(6,090)
		SC1082598	MAINTENANCE WORK FY16 JUL-DEC-POND CREEK	SCAPCREDIT		13,994
	12/31/2015	SC939830	Lea Ann Way West Quad 1 & 2 Rehabilitation Project	SCAPCREDIT		445,911
	2/4/2016	13LE1056	MORNING POINTE AT HURSTBOURNE	LAT EXT	13000	(28,275)
	2/12/2016	358356	WOODS OF PENN RUN Section 1	LAT EXT	18800	(40,890)
	5/17/2016	SC1003699	CONTRACTED WORK FY16 - POND CREEK	SCAPCREDIT		36,063
	6/6/2016	LE936598	Jefferson Commerce Center Tract 1A	LAT EXT	5250	(11,419)
	6/21/2016	14LE1170	Austin Park Phase 7 & 8	LAT EXT	26400	(57,420)
		LE918484	AUSTIN PARK SS PHASE 8	LAT EXT	16800	(36,540)
	6/30/2016	SC1082599	MAINTENANCE WORK FY16 JAN-JUN-POND CREEK	SCAPCREDIT		12,650

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
	8/5/2016	SC1003087	HILLRIDGE I/I REMEDIATION	SCAPCREDIT		308,184
	8/31/2016	SC1003292	LEA ANN WAY WEST (LAWW) QUAD 3 I/I REMEDIATION	SCAPCREDIT		311,526
	10/24/2016	SC1006197	CONTRACTED WORK FY15 - POND CREEK	SCAPCREDIT		310
	10/26/2016	SC1006182	CONTRACTED WORK FY14 - POND CREEK	SCAPCREDIT		8,390
	10/31/2016	SC1005631	LEA ANN WAY WEST (LAWW) QUAD 4 I/I REHABILITATION	SCAPCREDIT		692,905
		SC1005639	SILVER HEIGHTS SEWER REHAB	SCAPCREDIT		284,936
	12/30/2016	SC1082601	MAINTENANCE WORK FY17 JUL-DEC-POND CREEK	SCAPCREDIT		14,699
	1/17/2017	LE942402	Preston Crossing Apartments	LAT EXT	46400	(100,920)
	2/2/2017	LE954229	Jeffeerson Commerce Center Bldg.2	LAT EXT	3150	(6,851)
	6/30/2017	SC1082602	MAINTENANCE WORK FY17 JAN-JUN-POND CREEK	SCAPCREDIT		14,076
	7/6/2017	LE967615	Cooper Farms Section 12	LAT EXT	21200	(46,110)
	12/30/2017	SC1082603	MAINTENANCE WORK FY18 JUL-DEC-POND CREEK	SCAPCREDIT		10,803
	6/30/2018	SC1096902	Admiral PS I/I Rehab FY17 FY18	SCAPCREDIT		977,768
	6/10/2019	LE1047077	Orell Station 1C	LAT EXT	10400	(22,620)
	7/10/2019	LE1053368	Ferndale Place Subdivision	LAT EXT	9600	(20,880)
	1/13/2020	LE1092680	Hidden Forest Section 2	LAT EXT	10000	(21,750)
PCREEK Total						4,959,701
SEDIV	12/31/2007	359355	CALENDAR 2007 SUMP PUMP CREDIT	SCAPCREDIT		8,000
		359440	CALENDAR 2007 DOWNSPOUT CREDIT	SCAPCREDIT		128,000
	11/1/2008	235575	MAINTENANCE WORK FY06 AUG-FY09 NOV - SE DIVERSION	SCAPCREDIT		71,472
	12/22/2008	236214	GOLDSMITH BUECHB ICA PHI REHAB	SCAPCREDIT		314,808
		236296	BEARGRASS INT REHAB PH1 SEDIV	SCAPCREDIT		122,688
	12/31/2008	359356	CALENDAR 2008 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359441	CALENDAR 2008 DOWNSPOUT CREDIT	SCAPCREDIT		16,000
		SC1011317	MAINTENANCE WORK FY09A - SE DIVERSION	SCAPCREDIT		1,555
	6/30/2009	SC1011318	MAINTENANCE WORK FY09B - SE DIVERSION	SCAPCREDIT		2,929
	10/20/2009	229854	TINY HANDS DAYCARE	LAT EXT	1225	(2,664)
	12/31/2009	359357	CALENDAR 2009 SUMP PUMP CREDIT	SCAPCREDIT		12,000
		359443	CALENDAR 2009 DOWNSPOUT CREDIT	SCAPCREDIT		8,000
		SC1011322	MAINTENANCE WORK FY10A - SE DIVERSION	SCAPCREDIT		16,974
	2/11/2010	235291	SULLIVAN COLLEGE OF TECHNOLOGY	LAT EXT	900	(1,958)
	3/1/2010	238328	LOUISVILLE COLLEGIATE SPORTS	LAT EXT	400	(870)
	3/5/2010	241759	FRISCHS BIG BOY RESTAURANT	LAT EXT	2400	(5,220)
	4/16/2010	257275	LOUISVILLE JUNIOR ACADEMY	LAT EXT	520	(1,131)
	6/30/2010	SC1011326	MAINTENANCE WORK FY10B - SE DIVERSION	SCAPCREDIT		10,739
	12/14/2010	320993	BEARGRASS CREEK PHASE II - FY1	SCAPCREDIT		10,368
	12/31/2010	359358	CALENDAR 2010 SUMP PUMP CREDIT	SCAPCREDIT		4,000
		359444	CALENDAR 2010 DOWNSPOUT CREDIT	SCAPCREDIT		24,000

CREDIT BASIN	RELEASE DATE	APPLICATION	APPLICATION NAME	TYPE	FLOW	SUM OF APPROVED CREDIT REQUIRED / FLOW REDUCTION
		SC1011328	MAINTENANCE WORK FY11A - SE DIVERSION	SCAPCREDIT		11,090
	2/16/2011	286513	GARDINER POINT RESIDENCE HALL	LAT EXT	10800	(23,490)
	5/6/2011	276378	TIRE DISCOUNTERS - BARDSTOWN	LAT EXT	1500	(3,263)
	5/30/2011	287888	BEVERAGE WAREHOUSE	LAT EXT	1180	(2,567)
	6/30/2011	SC1011330	MAINTENANCE WORK FY11B - SE DIVERSION	SCAPCREDIT		3,661
	7/1/2011	296295	KEN TOWERY -3800 S HURSTBOURNE	LAT EXT	400	(870)
	12/31/2011	359359	CALENDAR 2011 SUMP PUMP CREDIT	SCAPCREDIT		64,000
		359445	CALENDAR 2011 DOWNSPOUT CREDIT	SCAPCREDIT		8,000
		SC1011331	MAINTENANCE WORK FY12A - SE DIVERSION	SCAPCREDIT		5,071
	6/30/2012	SC1011316	MAINTENANCE WORK FY12B - SE DIVERSION	SCAPCREDIT		24,202
		SC1011333	MAINTENANCE WORK FY12B - SE DIVERSION	SCAPCREDIT		6,141
	8/10/2012	307018	HOOK PROPERTY FAMILY DOLLAR	LAT EXT	400	(870)
	12/31/2012	14SC1006	MAINTENANCE WORK FY13A - SE DIVERSION	SCAPCREDIT		24,202
		359361	CALENDAR 2012 SUMP PUMP CREDIT	SCAPCREDIT		68,000
		359446	CALENDAR 2012 DOWNSPOUT CREDIT	SCAPCREDIT		4,000
	3/11/2013	187741	BROOKSTONE SENIOR APARTMENTS	LAT EXT	16800	(36,540)
	6/14/2013	232601	RAINTREE/MARIAN CT P/S ELIM	LAT EXT	105800	(230,115)
	6/30/2013	SC1082605	MAINTENANCE WORK FY13 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		21,761
	9/18/2013	SC1005539	CONTRACTED WORK FY13 - SOUTHEAST DIVERSION	SCAPCREDIT		25,344
	11/26/2013	330437	COLLEGIATE ATHLETIC FIELD	LAT EXT	800	(1,740)
	12/30/2013	SC1082606	MAINTENANCE WORK FY14 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		19,491
	6/30/2014	SC1082607	MAINTENANCE WORK FY14 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		9,087
	12/30/2014	SC1082608	MAINTENANCE WORK FY15 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		15,321
	2/11/2015	SC1006185	CONTRACTED WORK FY14 - SOUTHEAST DIVERSION	SCAPCREDIT		187,478
	6/30/2015	SC1082610	MAINTENANCE WORK FY15 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		10,273
	10/20/2015	SC1006199	CONTRACTED WORK FY15 - SOUTHEAST DIVERSION	SCAPCREDIT		1
	12/22/2015	LE919560	Todd's Place Express Car Wash	LAT EXT	4830	(10,505)
	12/30/2015	SC1082611	MAINTENANCE WORK FY16 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		7,052
	2/16/2016	SC1003718	SOUTHEAST DIVERSION AREA G (SEDG) I/I REMEDIATION	SCAPCREDIT		75,998
	5/24/2016	SC1003704	CONTRACTED WORK FY16 - SOUTHEAST DIVERSION	SCAPCREDIT		66
	6/30/2016	SC1082612	MAINTENANCE WORK FY16 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		19,904
	7/28/2016	LE943171	Costco Wholesale and Fuel Facility	LAT EXT	8000	(17,400)
	12/30/2016	SC1082613	MAINTENANCE WORK FY17 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		5,812
	6/30/2017	SC1082614	MAINTENANCE WORK FY17 JAN-JUN-SOUTHEAST DIVERSION	SCAPCREDIT		6,961
	12/30/2017	SC1082615	MAINTENANCE WORK FY18 JUL-DEC-SOUTHEAST DIVERSION	SCAPCREDIT		14,909
SEDIV Total						1,054,155

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Louisville and Jefferson County Metropolitan Sewer District Second Amended Consent Decree Annual Report FY21

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Safe, clean waterways