

Daniella Levine Cava, Mayor

Water and Sewer
PO Box 330316 • 3071 SW 38 Avenue
Miami, Florida 33233-0316
T 305-665-7471

miamidade.gov

VIA ELECTRONIC CORRESPONDENCE

CCN: 65328

File No: 8.DC.20.34

March 1, 2024

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Tom Mariani
Washington, D.C. 20044-7611
RE: DOJ No. 90-5-1-1-4022/1
Tom.Mariani@usdoj.gov

Chief, Clean Water Enforcement Branch
Water Protection Division
Attn: Brad Ammons
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, Georgia 30303
Ammons.Brad@epa.gov

Rachael Amy Kamons
Environmental Enforcement Section
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station
Washington, D.C. 20044-7611
Rachael.Kamons@usdoj.gov

Florida Department of Environmental Protection
Southeast District – West Palm Beach
3301 Gun Club Road, MSC 7210-1
West Palm Beach, FL 33406
Attn: Compliance/Enforcement Section
Sirena.Davila@dep.state.fl.us

**RE: Consent Decree (Case: No. 1:12-cv-24400-FAM),
Reference DOJ Case No. 90-5-1-1-4022/1,
Section IX – Reporting Requirements, Paragraph 34 – Annual Reports – 2023 Annual Report**

Dear Sir or Madam:

In accordance with the provisions of Paragraph 34 of the above referenced Consent Decree, on behalf of Miami-Dade County, the Water and Sewer Department (WASD) submits to both the United States Environmental Protection Agency (EPA) and the State of Florida Department of Environmental Protection (FDEP) the 2023 Annual Report. The 2023 Annual Report covers the period of time from January 1, 2023 through December 31, 2023.

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



Should you have any questions regarding this matter, please call me at (786) 552-8894.

Sincerely,



Marisela J. Aranguiz-Cueto, P.E.
Deputy Director
Miami-Dade Water and Sewer Department

cc:

Anita Patel
Senior Assistant Attorney General, Complex Litigation
Office of the Attorney General
PL 01 The Capitol
Tallahassee, FL 32399-1050
(850) 414-3694
anita.patel@myfloridalegal.com

Elizabeth Teegen
Chief Assistant Attorney General, Complex Litigation
Office of the Attorney General
PL-01, The Capitol
Tallahassee, FL 32399-1050
850-414-3808
Elizabeth.Teegen@myfloridalegal.com

Florida Department of Environmental Protection
Southeast District – West Palm Beach
3301 Gun Club Road, MSC 7210-1
West Palm Beach, FL 33406
Attn: Compliance/Enforcement Section
Lisa.M.Self@dep.state.fl.us
Bridjette.Bucell@FloridaDEP.gov
Sed.wastewater@dep.state.fl.us
Chase.Osborn@floridaDEP.gov
Guy.Cappello@floridaDEP.gov

Jairo Castillo-Valenzuela
Dennis Sayre
Wastewater Enforcement Section
Water Enforcement Branch
Enforcement & Compliance Assurance Division
USEPA Region 461 Forsyth Street. S.W.
Atlanta, GA 30303
Castillo.Jairo@epa.gov
Gunderson.andrew@epa.gov

Paul Schwartz
Associate Regional Counsel
U.S. EPA, Region 4
61 Forsyth Street, SW
Atlanta, Georgia 30303
Schwartz.Paul@epa.gov

Madame Mayor Daniella Levine-Cava
Miami-Dade County
111 NW First Street 29th Floor
Miami, Florida 33128
Daniella.Cava@miamidade.gov

Jimmy Morales, Office of the Mayor
Miami-Dade County Chief Operations Officer
111 NW 1st Street 29th Floor
Miami, FL 33128
Jimmy.Morales2@miamidade.gov

Roy Coley, Director
Miami-Dade Water and Sewer Department
3071 SW 38th Avenue
Miami, Florida 33146
Roy.Coley@miamidade.gov

Sarah Davis
Miami-Dade Assistant County Attorney
Miami-Dade County Attorney's Office
111 NW First Street Suite 2810
Miami, Florida 33128
Sarah.Davis@miamidade.gov

Amanda Kinnick (WASD)
Billie Jo McCarley (WASD)
Frances G. Morris (WASD)
James B. Ferguson (WASD)
Juan Curiel (WASD)
Thomas Pfiester (WASD)
Oscar Vasquez (WASD)
Carlos A. Castro (WASD)
Robert Esperon (WASD)
Rolando Roque (WASD)
Ana Caveda (WASD)
Cynthia Doyon (WASD)
Katherine Sanchez (CAO)

Rashid Istambouli (RER-DERM)

Roger Williams (CD PMCM)



2023 Annual Report

(Tenth Annual Report)

January 1, 2023 through December 31, 2023

Prepared for
United States Environmental Protection Agency and
Florida Department of Environmental Protection

Consent Decree

Case: No. 1:12-cv-24400-FAM

Prepared by
Miami-Dade County, Miami-Dade Water and Sewer Department and
the Consent Decree Program Management Construction Management
Team



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Acronyms and Abbreviations

AC	Asbestos Cement
BCC	Board of County Commissioners
BOD	Biological Oxygen Demand
BODR	Basis of Design Report
CMOM	Capacity, Management, Operations, and Maintenance
CD	Consent Decree
CDWWTP	Central District Wastewater Treatment Plant
CIP	Capital Improvement Project
CIPP	Cured in Place Pipe
CMOM	Capacity, Management, Operations and Maintenance
DIW	Deep Injection Well
EFT	Electronic Funds Transfer
EPA	United States Environmental Protection Agency
FOG	Fats, Oils, and Grease
FDEP	Florida Department of Environmental Protection
FSE	Food Service Establishment
GDO	Grease Discharge Operations
GPD	Gallons per Day
GPM	Gallons per Minute
GIS	Geographic Information Systems
GSSOMP	Gravity Sewer System Operations and Maintenance Program

Acronyms and Abbreviations (continued)

I/I	Inflow/Infiltration
IMS	Information Management System
LF	Linear Foot
MGD	Million Gallons per Day
MS	Metropolitan Services
NDWWTP	North District Wastewater Treatment Plant
NPDES	National Pollutant Discharge Elimination System
N/A	Not Applicable
OOL	Ocean Outfall Legislation
PCCP	Pre-stressed Concrete Cylinder Pipe
PDR	Public Document Repository
PS	Pump Station
PSOPMP	Pump Station Operations and Preventative Maintenance Program
RER-DERM	Department of Regulatory and Economic Resources-Division of Environmental Resources Management
RTC	Real Time Control
RTU	Remote Telemetry Unit
R & R	Repair and Replacement
SDWWTP	South District Wastewater Treatment Plant
SSO	Sanitary Sewer Overflow
SEP	Supplemental Environmental Project
SORP	Sewer Overflow Response Plan

Acronyms and Abbreviations (continued)

SCADA	Supervisory Control and Data Acquisition
SSAMP	Sewer System Asset Management Program
TSS	Total Suspended Solids
VFD	Variable Frequency Drive
VSCO	Volume Sewer Customer Ordinance
WASD	Water and Sewer Department
WCTL	Wastewater Collection and Transmission Line
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

1.0 Introduction

Miami-Dade County ("County") submits this Annual Report ("Report") to the Environmental Protection Agency ("EPA") and the State of Florida Department of Environmental Protection ("FDEP") for review and comment in accordance with the requirements of Paragraph 34 of the Consent Decree ("CD"). This Report includes a narrative of progress made, including key accomplishments and significant activities, under the CMOM Programs implemented or modified pursuant to the CD for the most recent Calendar Year (January 1, 2023 through December 31, 2023), and provides a trends analysis of the number, volume, average duration, and cause of Miami-Dade's SSOs for the previous two (2) Calendar Years.

On May 21, 2013, the County approved a Consent Decree (CD) with the United States of America, the State of Florida Department of Environmental Protection, and the State of Florida, in the case styled *United States of America et. al. v. Miami-Dade County, Florida*, No. 1:12-cv-24400-FAM. On June 6, 2013, the CD was lodged with the United States District Court for the Southern District of Florida ("Court"). The Effective Date of the CD is December 6, 2013 (six (6) months after the date of lodging). On April 9, 2014, the Court approved the CD with the United States of America, the State of Florida Department of Environmental Protection, and the State of Florida.

2.0 Requirements

Beginning two (2) months after the first full Calendar Year following the Effective Date of the CD, and two (2) months after each subsequent Calendar Year until termination of the CD, Miami-Dade shall submit to EPA/FDEP for review and comment an Annual Report. Each Annual Report shall cover the most recent applicable Calendar Year and shall include, at a minimum:

1. "A narrative summary of progress made, including key accomplishments and significant activities, under the CMOM Programs implemented or modified pursuant to this Consent Decree for the most recent Calendar Year."
2. "A trends analysis of the number, volume, average duration, and cause of Miami-Dade's SSOs for the previous two (2) Calendar Years."

3.0 Implementation Progress (January 1, 2023 - December 31, 2023)

3.1 CD Reporting

The County submitted four (4) quarterly reports covering the most recent Calendar Year (January 1, 2023 through December 31, 2023). Quarterly reports include the date, time, location, source, estimated duration, estimated volume, receiving water (if any), and cause of all SSOs occurring during the reporting period.

Two (2) semi-annual reports were submitted covering the most recent Calendar Year (January 1, 2023 through December 31, 2023). Semi-annual reports contain a Gantt chart with a description of projects and activities completed and milestones achieved during the reporting period, and those anticipated in the successive reporting period. The semi-annual reports include a description of the status of compliance or non-compliance with the requirements of this CD and, if applicable, the reasons for non-compliance. Also, the semi-annual reports contain the amount, recipient and the date of transfer or use during the reporting period of funds obtained by the County from the collection of sewer rates for any purpose not related to the management, operation or maintenance of the Sewer System or to any capital improvement needs of the Sewer System that is required to be tracked and reported pursuant to the Financial Analysis Program set forth in Subparagraph 19(j)(v) of the CD.

On March 18, 2014, the County approved a resolution of commitment not to transfer funds from the collection of sewer rates for purposes not related to the management, operation, or maintenance of the Sewer System or its capital improvement needs. During this reporting period, there were no transfers of funds from the Miami-Dade Water and Sewer Department (“WASD”) that are required to be tracked and reported by Paragraph 19(j)(v) of the CD and the Policy Resolutions.

3.2 Continuation of CMOM Programs of the First Partial Consent Decree and Second and Final Consent Decree Paragraph 18

Refer to Table A-1 (Appendix A) for significant activities and key accomplishments on the Continuing CMOM Programs during the most recent Calendar Year. Below are descriptions and background for each program.

Adequate Pumping, Transmission and Treatment Capacity Program

The Adequate Pumping, Transmission and Treatment Capacity Program ensures adequate transmission capacity for its pump stations and adequate treatment capacity for its Wastewater Treatment Plants. Pursuant to Paragraph 18(a) of the CD, the County has incorporated the criteria in Appendix A of the CD into Section 24-42.3 of the Code of Miami-Dade County. The amendment was submitted to EPA/FDEP on May 20, 2014; ahead of the CD compliance date of June 4, 2014. This program remains in compliance with the requirements of the CD and Section 24-42.3 of the Code of Miami-Dade County.

Pursuant to Appendix A of the CD, certifications are performed by the Department of Regulatory and Economic Resources-Division of Environmental Resources Management (“RER-DERM”) and kept on file by WASD. The EPA can have access to these reports upon request. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Pump Station Remote Monitoring Program

The Pump Station Remote Monitoring Program involves the installation and operation of remote monitoring equipment in all Wastewater Collection and Transmission System (WCTS) pump stations within six (6) months after the County becomes operationally responsible for a pump station. The pump station monitoring system shall continuously monitor, report, and transmit data.

Pump station remote monitoring equipment is installed during the pump station construction phase, prior to placing the pump station into operation. The pump station monitoring system provides the ability to continuously monitor, report, and transmit data. All the existing pump stations were upgraded with the latest technology, Supervisory Control and Data Acquisition (SCADA), Remote Terminal Units (RTUs), and operational software as part of the CD Capital Improvement Project (CIP) 5.19 SCADA RTU Upgrades, which was completed in November 2015. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

WCTS Model

The WCTS Model was used in the development and implementation of CMOM Programs to optimize transmission capacity and to evaluate the impact of I/I rehabilitation projects; proposed modifications, upgrades, and expansions to the WCTS; and performance of the WCTS. The WCTS Model was used to simulate the manifolded force mains and private pump stations that manifold into the County's force main system. The calibration activities were completed, and the WCTS Model calibration report was completed on CD compliance date of December 6, 2018. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Spare Parts Program

This program involves a spare parts inventory management program for the WCTS and WWTPs. The existing Spare Parts Inventory Management Program will be enhanced as the following new CMOM Programs are implemented: Gravity Sewer System Operations and Maintenance Program; Pump Station Operations and Preventative Maintenance Program; Force Main Operations, Preventative Maintenance and Assessment/Rehabilitation Program; and the Wastewater Treatment Plants Operations and Maintenance Program. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Volume Sewer Customer Ordinance (“VSCO”) Program

The purpose of the VSCO Program is to eliminate or otherwise control SSOs from the WCTS and the collection and transmission systems of present and future VSCOs.

The amendment to the VSCO, pursuant to Paragraph 18(e)(ii), was submitted to the EPA/FDEP on March 14, 2014. Also, pursuant to Paragraph 18(e)(iii), a draft was written to include scheduling requirements and an approved VSCO Plan of Compliance as defined in Appendix B of the CD.

These proposed changes to amend the VSCO were submitted to the EPA/FDEP on April 4, 2014. RER-DERM revisions to the proposed amended VSCO were submitted to EPA/FDEP on February 23, 2015. On June 30, 2015, the proposed ordinance was read before the Board of County Commissioners (BCC). The proposed ordinance was adopted on first reading and scheduled for public hearing before the Metropolitan Services (MS) Committee on Wednesday, August 26, 2015. The MS Committee forwarded the VSCO to BCC with a favorable recommendation. The VSCO was presented before the BCC for the second reading and adopted on September 1, 2015. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

3.3 New CMOM Programs

Refer to Table A-2 (Appendix A) for significant activities and key accomplishments on the New CMOM Programs during the most recent Calendar Year. The CMOM Programs Consolidated Schedule of Implementation Activities was submitted on the CD compliance date of August 6, 2018 and is pending EPA's and FDEP's review and approval. Currently, it has been agreed for the County to provide an updated Consolidated Schedule of Implementation activities for EPA's and FDEP's review and approval. Below are descriptions and background for each program.

Fats, Oils and Grease ("FOG") Control Program

This program requires the County to regulate industrial and commercial sources of oil and grease. In addition, this program involves a review, evaluation, and revision of the County's previous program. RER-DERM has organized the FOG Control Program into the following three (3) projects: Project 1: FOG Characterization, Control Device Design, and Management, Operation and Maintenance Standards; Project 2: FOG Control Inspections, Enforcement, Compliance and Outreach; and Project 3: FOG Ordinance and Enforcement Management.

The deliverable was submitted to EPA/FDEP on the CD compliance date June 8, 2015. RER-DERM received comments on the Program from EPA/FDEP on December 28, 2016. Response to EPA and FDEP comments on the FOG Control Program was submitted on May 1, 2017. The FOG Control Program and FOG Ordinance were approved by the EPA/FDEP on September 7, 2017. On June 30, 2023, the County submitted the Sixth Annual FOG Control Program Review Report. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Sewer Overflow Response Plan ("SORP")

The SORP is a program for identifying and reporting SSOs. The plan will establish timely and effective methods and means of responding to, cleaning up, and/or minimizing the impact of SSOs; timely reporting of the location, volume, cause, impact, and other pertinent SSO information to the appropriate regulatory agencies; and timely and effective notification of SSOs to potentially impacted public. In addition, the plan involves a re-evaluation of the County's previous program.

The SORP deliverable was submitted to EPA/FDEP on July 2, 2015, ahead of the CD compliance date of July 6, 2015. EPA/FDEP issued comments on the Program on January 24, 2017. Response to EPA/FDEP comments on the SORP was submitted on March 28, 2017. The SORP

was approved by the EPA/FDEP on August 15, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

[Information Management System \(“IMS”\) Program](#)

The IMS program will aid County managers and field supervisors to adequately track scheduled operational and maintenance activities; evaluate operations, maintenance, customer service, and sewer system rehabilitation activities; and improve overall sewer system performance.

The IMS program deliverable was submitted to EPA/FDEP on December 4, 2015, ahead of the CD compliance date of December 7, 2015. EPA/FDEP issued comments on the Program on February 28, 2017. Response to EPA/FDEP comments on the IMS was submitted on May 17, 2017. The IMS program was approved by the EPA/FDEP on October 17, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

[Sewer System Asset Management Program \(“SSAMP”\)](#)

The SSAMP is designed to maintain a desired level of service for the County's Sewer System and considers the life cycle cost to ensure compliance with regulatory requirements and the CD.

The Sewer SSAMP was submitted to EPA/FDEP on the CD compliance date of October 6, 2015. EPA/FDEP issued comments on the Program on January 24, 2017. Response to EPA/FDEP comments on the SSAMP was submitted on the CD compliance date of March 28, 2017. The SSAMP was approved by the EPA/FDEP on October 17, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

[Gravity Sewer System Operations & Maintenance Program \(“GSSOMP”\)](#)

The GSSOMP will address SSOs, particularly those caused by FOG, roots and/or debris obstructions. The program will facilitate proper operation and maintenance activities associated with gravity mains in the WCTS.

The GSSOMP was submitted to EPA/FDEP on the CD compliance date of February 6, 2015. WASH received comments on the Program from EPA/FDEP on July 1, 2016. WASH corrected all comments in the Program identified by EPA/FDEP and submitted responses to the comments on August 12, 2016. The GSSOMP was approved by the EPA/FDEP on October 17, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

[Pump Station Operations & Preventative Maintenance Program \(“PSOPMP”\)](#)

The PSOPMP will facilitate proper operation and maintenance activities associated with the pump stations within the WCTS.

The PSOPMP was submitted to EPA/FDEP on April 2, 2015, ahead of the CD compliance date of April 6, 2015. WASH received comments on the Program from EPA/FDEP on June 24, 2016. WASH addressed all comments and answered all questions provided by EPA/FDEP and submitted responses to the comments on July 29, 2016. The PSOPMP was approved by the EPA/FDEP on October 17, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Force Main Operations, Preventative Maintenance & Assessment/Rehab Program ("FMOPMARP")

The FMOPMARP will facilitate proper operation and maintenance activities associated with force mains within the WCTS. A critical assessment will also be performed of the structural integrity of the force mains and the risk of force main critical failure.

WASD has conducted condition assessments of pre-stressed concrete cylinder pipe force mains. The FMOPMARP was submitted to EPA/FDEP on the CD compliance date August 6, 2015. EPA/FDEP issued comments on the Program on February 23, 2017. Response to EPA/FDEP comments on the FMOPMARP was submitted on May 17, 2017. The FMOPMARP was approved by the EPA/FDEP on October 17, 2017. The prioritization assessment activities were completed, and Force Main Criticality Assessment and Prioritization Report was completed on CD compliance date of July 17, 2018. The Force Main Assessment and Prioritization Report was submitted on July 17, 2018 ahead of the CD compliance date of July 20, 2018 and is pending EPA and FDEP review and approval. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Force Main Rehabilitation/Replacement Program ("FMRRP")

The FMRRP includes standard procedures for repairing, rehabilitating, and replacing force mains.

The FMRRP was submitted to EPA/FDEP on December 4, 2015, ahead of the CD compliance date of December 7, 2015. EPA/FDEP issued comments on the Program on February 23, 2017. Response to EPA/FDEP comments on the FMRRP was submitted on May 17, 2017. The FMRRP was approved by the EPA/FDEP on September 28, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

WWTP Operations and Maintenance Program ("WWTP OMP")

The WWTP OMP is being developed in accordance with Paragraph 19(h) in the CD. This program will facilitate proper operation, maintenance and equipment replacement activities associated with the WWTPs.

The WWTP OMP was submitted to EPA/FDEP on May 5, 2015, ahead of the CD compliance date of May 6, 2015. WASD received comments on the Program from EPA/FDEP on August 22, 2016. WASD corrected all comments in the Program identified by EPA/FDEP and submitted responses to the comments on November 21, 2016. On November 20, 2017, EPA/FDEP conditionally approved the WWTP OMP and requested additional information. Response to EPA/FDEP Request for Additional Information was submitted on January 29, 2018. On October 31, 2017, RER-DERM submitted the Hauled Waste Guidance Manual to EPA/FDEP. EPA/FDEP sent comments on the Manual on November 27, 2017. Response to EPA/FDEP comments on the Hauled Waste Guidance Manual was submitted on February 13, 2018. The WWTP OMP and the Hauled Waste Guidance Manual were approved by the EPA/FDEP on April 19, 2018 and June 4, 2018, respectively. The final WWTP OMP was submitted to EPA/FDEP on August 6, 2018. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

Specific Capital Improvement Projects (“CIPs”)

Based on previous investigations, the County has identified certain rehabilitation projects that are intended to address conditions currently causing SSOs or contributing to NPDES permit violations. These specific CIPs are identified and described in the Work Plan set forth in Appendix D of the CD. The County shall complete each of these CIPs in accordance with the schedules set forth in Appendix D.

The following CIPs were completed during the most recent Calendar Year (January 1, 2023 through December 31, 2023):

Wastewater Treatment Plant (WWTP)

- RS Pump Station Plant 2 at CDWWTP (CIP 2.10) met substantial completion on March 15, 2023, ahead of the compliance date of December 1, 2024.
- Primary Clarifiers and Odor Control at NDWWTP (CIP 3.2) which was previously completed on September 14, 2022, ahead of the compliance deadline of April 6, 2023.
- Odor Control at SDWWTP (CIP 1.10) met substantial completion on April 19, 2023, ahead of the compliance deadline of April 25, 2023.
- Chlorine Building at SDWWTP (CIP 1.4) which was previously completed on January 27, 2022, ahead of the compliance deadline of August 7, 2023.
- Oxygen Production SDWWTP (CIP 1.2) met substantial completion on September 15, 2023, and a Notification of Completion was submitted on October 27, 2023. The compliance date was February 25, 2022.
- Pump Station 2 at CDWWTP (CIP 2.22) met substantial completion with the flow meter installation by the Miami Dade County Operations Team on August 12, 2023. A Notification of Completion was submitted on October 6, 2023. The compliance date was May 25, 2019.
- Electrical Improvements at CDWWTP (CIP 2.1) met substantial completion when the child project CIP 2.1(7) Substation No.7A, 8A, 9A and 10A was completed on November 17, 2021. A Notification of Completion was submitted on October 6, 2023.

Financial Analysis Program (“FAP”)

The purpose of the FAP is to effectively establish and track the sufficiency of funds for operations and maintenance, capital projects financing, and debt service coverage associated with the Sewer System, including, without limitation, the continued work pursuant to the CD.

The FAP was completed and submitted to EPA/FDEP on December 4, 2014, ahead of the CD compliance date of December 8, 2014. WASD received comments on the Program from EPA/FDEP on November 25, 2015. WASD corrected all comments in the Program identified by EPA/FDEP and submitted responses to the comments on January 29, 2016. The FAP was approved by the EPA/FDEP on October 17, 2017. Work on this Program is ongoing, and details can be found in the work progress tables in Appendix A.

The County continues to be fully engaged with the successful implementation and compliance of the CD. First with the continued development and implementation of the nine (9) new CMOM Programs (CD Section VI, Paragraph 19). Second, with the execution of the eighty-one (81) Capital Improvement Projects included in Appendix D which have an approximate total cost of \$2.01 billion, and the Supplemental Environmental Project (SEP) included in Appendix E. Despite

the significant efforts and progress to date, the County encountered challenges that delayed the completion of certain CIP. In addition, on December 22, 2017, the County submitted correspondence detailing the challenges being encountered during program execution and a request for non-material schedule modifications of forty-three (43) projects. The modifications of these project schedules were approved by EPA/FDEP on April 11, 2018.

As of this reporting period, sixty-one (61) projects with a total cost of \$910 million have reached substantial completion, fifteen (15) projects with a cost of \$884 million are in the construction phase, and five (5) projects with a cost of \$214 million are in the pre-construction phases of planning and procurement. All CD requirements were met during the most recent calendar year, except for meeting the final deadlines for eight (8) Appendix D CIP Projects:

- 1) CD CIP 1.6 SDWWTP Gravity Sludge Thickening Facility and CIP 1.8 SDWWTP Dewatering Facility (two (2) SDWWTP projects) and the CD CIP 2.12 CDWWTP Gravity Sludge Thickening Plant 1, CIP 2.13 CDWWTP Gravity Sludge Thickening Plant 2, CIP 2.16 CDWWTP Dewatering Facility and CIP 2.18 CDWWTP Odor Control Systems (four (4) CDWWTP projects) – On December 28, 2022, the County submitted to EPA and FDEP a Request for Time Extension and Project Status Updates for these six (6) projects which experienced several delays throughout its execution and requested a time extension. The compliance dates for CIP 1.6 and CIP 1.8 was January 6, 2023 and the compliance dates for CIP 2.12, CIP 2.13, CIP 2.16, and CIP 2.18 was January 13, 2023.
- 2) CD CIP 2.15 Digesters Plant 2 at CDWWTP – On June 16, 2023, the County notified EPA and FDEP for a Request for Time Extension and Project Status Update for CIP 2.15 Digester Plant 2 due to unforeseen and complex delays during construction, and start-up and commissioning. The compliance date for this project was June 18, 2023.
- 3) CD CIP 1.7 Digesters and Control Buildings at SDWWTP – On October 20, 2023, the County submitted a Force Majeure Delay Notification and Request for Time Extension Letter to EPA and FDEP due to project delays experienced during the start-up and commissioning of the Cluster No. 1 Digesters and Acid-Phase Reactors. On October 31, 2023, a Revised Force Majeure Delay Notification and Request for Time Extension Letter was submitted. The compliance date for this project was November 21, 2023.

4.0 CMOM Programs Subject to Reporting Requirements

4.1 Continuation of Capacity, Management, Operations and Maintenance ("CMOM") Programs of the First Partial Consent Decree and Second and Final Partial Consent Decree – Paragraph 18

A narrative summary of the continuing CMOM Programs and their significant activities for the previous calendar year can be found in Appendix A Table A-1.

4.2 New CMOM Programs – Paragraph 19(a) through (h) and (j)

A narrative summary of the New CMOM Programs and their significant activities for the previous calendar year can be found in Appendix A Table A-2.

As of June 4, 2018, all the nine (9) new CMOM Programs were approved by the EPA/FDEP. The Force Main Criticality Assessment and Prioritization Report was prepared in accordance with the CD Section VI, Paragraph 19(g)(ii) and submitted on July 17, 2018. The EPA and FDEP review and approval of the Force Main Criticality Assessment and Prioritization Report is pending. The status of the CMOM Programs submitted to EPA/FDEP for review and comment are listed below in Table 1-1.

Implementation schedules are required to be included in CMOM Program deliverables. However, these programs are interrelated, and one program directly affects another. At the January 22, 2015 CD Program Monthly Progress Meeting with EPA/FDEP, WASD recommended that a consolidated implementation schedule be developed once all the CMOM Program deliverables have been submitted.

On March 19, 2015, EPA/FDEP agreed to allow the County to submit a consolidated implementation schedule for all CMOM programs once all program documents have been submitted. At the September 17, 2015 CD Program Monthly Progress Meeting with EPA/FDEP, Miami-Dade requested a deadline of March 2016 for the submittal of the CMOM Programs Consolidated Schedule of Implementation Activities. EPA and FDEP agreed to the requested deadline. On March 31, 2016, the CMOM Programs Consolidated Implementation Schedule was submitted to EPA and FDEP for review and approval.

On March 28, 2017, WASD, EPA and United States Department of Justice ("DOJ") held a teleconference. At that teleconference, it was agreed that an updated CMOM consolidated schedule will be submitted 30 days after all CMOM Programs have been approved. The WWTP OMP and the Hauled Waste Guidance Manual were approved by the EPA and FDEP on April 19, 2018 and June 4, 2018, respectively.

Subsequently, the CMOM Programs Consolidated Schedule of Implementation Activities was submitted on CD compliance date of August 6, 2018. The County has progressed with program elements included within the Consolidated Schedule as reported in semi-annual and annual reports.

At the June 18, 2020, CD Program Update meeting between EPA, FDEP, and the County, FDEP suggested for the County to provide an updated CMOM Programs Consolidated Schedule of Implementation Activities, the County made the necessary adjustments to the schedule and submitted it for review and approval on March 19, 2021. Report on the progress is being documented in the semi-annual and annual reports as required by the CD.

4.2.1 Specific Capital Improvement Projects (“CIPs”) Program – Paragraph 19(i)

The County has identified certain rehabilitation projects that are intended to address conditions currently causing SSOs or contributing to NPDES permit violations. In accordance with Paragraph 19(i), these specific capital improvements are identified and described in the Work Plan set forth in Appendix D of the CD. A narrative summary of these CIPs and their significant activities for the previous calendar year can be found in Tables A-3.1, A-3.2, and A-3.3 for the WWTPs; Tables A-4.1 and A-4.2 for the WCTLs; and Table A-5 for the Sewer Pump Station Systems included in Appendix A.

Table 4-1 EPA/FDEP Submittals of CD CMOM Programs

CD CMOM Programs	CD Reference	CD Deadline	Completion or Submittal Date	EPA/FDEP Comments	County Response Date	EPA/FDEP Approval
Financial Analysis Program	Section VI, para 19(j)	12/8/2014	12/4/2014	11/25/2015	1/29/2016	10/17/2017
Fats, Oils and Grease (FOG) Control Program	Section VI, para 19(a)	6/8/2015	6/8/2015	12/28/2016	5/1/2017	9/7/2017
Sewer Overflow Response Plan	Section VI, para 19(b)	7/6/2015	7/2/2015	1/24/2017	3/28/2017	8/15/2017
Information Management System	Section VI, para 19(c)	12/7/2015	12/4/2015	2/28/2017	5/17/2017	10/17/2017
Sewer System Asset Management	Section VI, para 19(d)	10/6/2015	10/6/2015	1/24/2017	3/28/2017	10/17/2017
Gravity Sewer System Operations and Maintenance Program	Section VI, para 19(e)	2/6/2015	2/6/2015	7/1/2016	8/12/2016	10/17/2017
Pump Station Operations and Preventative Maintenance Program	Section VI, para 19(f)	4/6/2015	4/2/2015	6/24/2016	7/29/2016	10/17/2017
Force Main Operations, Preventative Maintenance and Assessment/Rehabilitation Program	Section VI, para 19(g)	8/6/2015	8/6/2015	2/23/2017	5/17/2017	10/17/2017
Force Main Criticality Assessment and Prioritization Report	Section VI, para 19(g)(ii)	7/17/2018	7/17/2018	Pending	N/A	Pending
Force Main Rehabilitation/Replacement Program	Section VI, para 19(g)(iv)	12/7/2015	12/4/2015	2/23/2017	5/17/2017	9/28/2017
WWTP Operations and Maintenance Program	Section VI, para 19(h)	5/6/2015	5/5/2015	8/22/2016 11/20/2017 (RAI) 11/27/2017 (Hauled Waste Manual)	11/21/2016 1/29/2018 (RAI) 2/13/2018 (Hauled Waste Manual)	4/19/2018 6/4/2018 (Hauled Waste Manual)

5.0 Sanitary Sewer Overflow Analysis

A trends analysis of the number, volume, average duration, and cause of the County's Sanitary Sewer Overflow (SSO) and Building Backup (BBU) events was conducted for the previous two calendar years including the current reporting period (January 1 through December 31, 2023). The data gathered in accordance with the CD quarterly reporting requirements since the effective date of the CD are also depicted in the figures below.

5.1 Number of Sanitary Sewer Overflows

Figure 5.1 provides a summary of the number of SSO and BBU events by year.

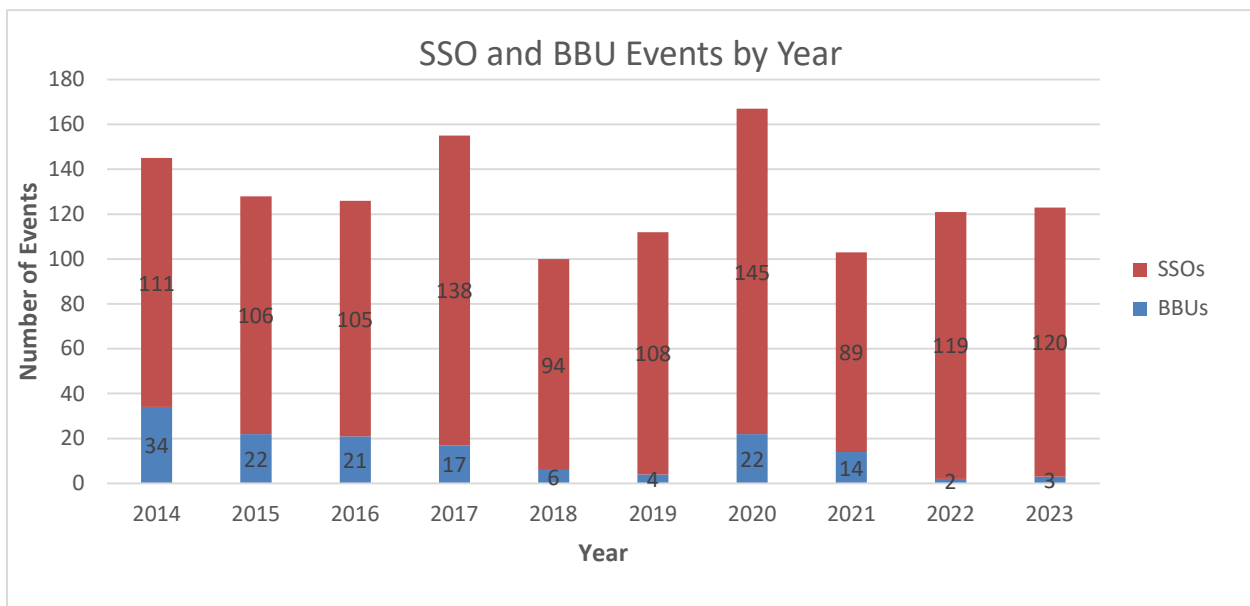


Figure 5. 1 - SSO and BBU Events by Year

The yearly number of SSO and BBU events are shown in Figure 5.1. There was an increase in the number of SSOs during the reporting period as compared to the previous calendar year. In 2023, the County experienced 120 SSOs, 1 more than in 2022, which is a 1% increase. There were 31 SSOs more than in 2021 which is a 26% increase.

To date, the total number of SSOs reported in 2020 remains the highest number of events during any reporting period since the inception of these annual reports. It should be noted that 2020 brought unique challenges that impacted WASD's operations and resulted in the highest number of SSOs during that calendar year. Miami-Dade County experienced multiple storms with rainfall amounts exceeding design return frequency storm criteria and higher ground water table elevations leading to urban flood advisories; street flooding associated with the inability of stormwater drainage and canal systems to convey stormwater; and numerous SSOs associated with increases in inflow and infiltration into the gravity sanitary sewer collection systems operated by the County and by the other Volume Sewer Customers. A remarkably high amount of rainfall

(~80 inches) was experienced over the course of 2020, significantly higher than the historical average of approximately 60 inches. In 2023, the annual cumulative rainfall totaled over 72 inches which is significantly greater than the average annual rainfall. Additionally, some of the heavy rain events occurred outside of the traditional wet season. The County continues to identify and repair any defect to address inflow and infiltration.

There were three BBU events in 2023, versus 2 BBU events in 2022 which represents a 33% increase. The 3 BBU events in 2023 as compared with the 14 that occurred in 2021 marks a significant 79% reduction.

The following figures and graphs are intended to provide additional information including the causes and volume distribution of the SSO and BBU events.

Figure 5.2 provides the source distribution of the SSO and BBU events by year.

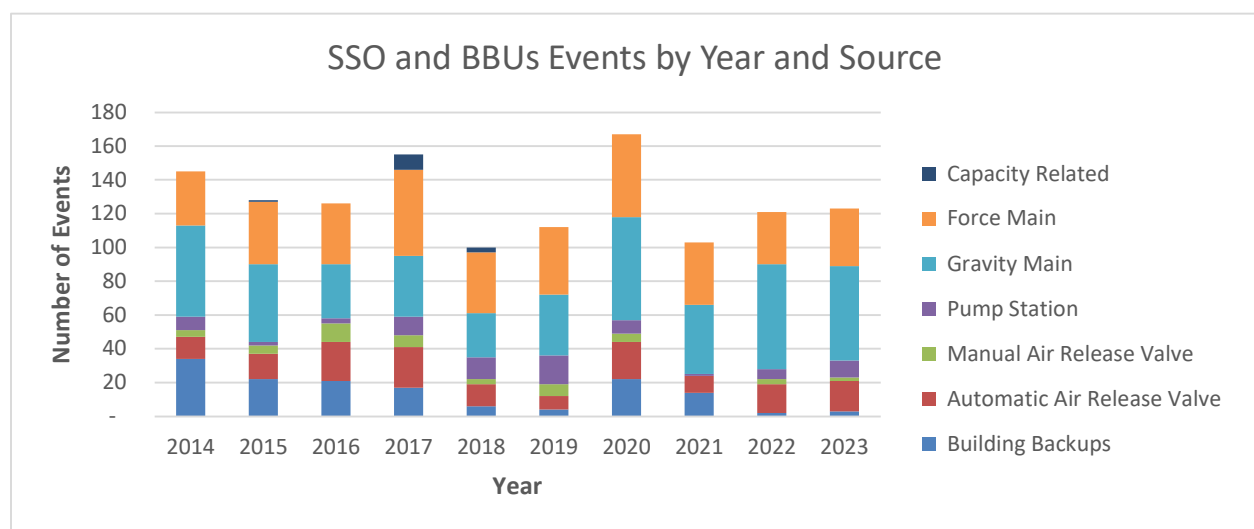


Figure 5.2 - SSO and BBUs Events by Year and Source

Figure 5.2 illustrates the distribution of SSOs and BBUs by source type on an annual basis.

There were 18 automatic air release valve (AARV) related incidents in 2023; 17 AARV SSOs in 2022 and 10 in 2021. Over the past two years, the number of AARV SSOs increased by 44% and by 6% since 2022. The Wastewater Collection and Transmission Line Division (WWCTLD) determined that a considerable portion of the AARV SSOs were attributable to a manufacturer design defect. These AARVs were targeted for replacement and WWCTLD continues to phase them out of the Wastewater Collection and Transmission System (WCTS). In 2023, there were fewer AARV SSOs attributed to this type of manufacturer defect.

There were 2 manual air release valve (ARV) incidents in 2023, which is fewer than the 3 ARV SSOs in 2022 but a slight increase when comparing to the absence of ARV spills in 2021.

In 2023, there were 10 pump station (PS) related SSO incidents which is an uptick from the 6 in 2022 and a significant increase from the 1 PS related SSO in 2021.

There were 56 gravity main related SSOs events in 2023 which is a 11% decrease from the 62 in 2022 but a 27% increase from the 41 in 2021.

There was a small increase in the number of force main SSOs events occurring over the past year, (from 31 to 34). There were 37 FM SSOs in 2021, 31 in 2022 and 34 in 2023. This represents an increase of 9% since 2022 and a reduction of 9% since 2021.

5.2 Volume of Sanitary Sewer Overflows

Figure 5.3 shows the total SSO volume distribution within each categorized source. A complete breakdown of all SSO volumes is available in Appendix B of this document.

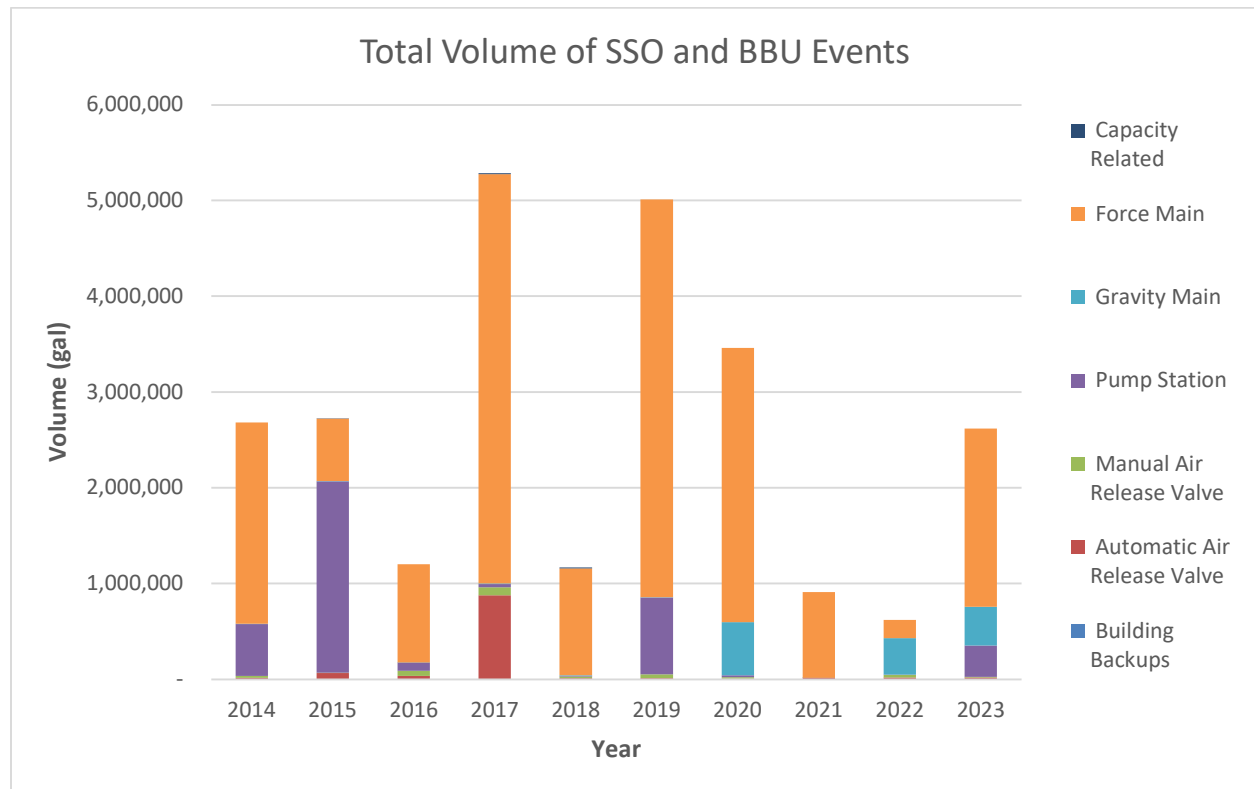


Figure 5.3 - Total Volume of SSO and BBU Events

Figure 5.3 illustrates the distribution of the total SSO volume by source since 2014.

The volume associated with BBU events in 2023 was 35 gallons which is 75% lower than the 145 gallons in 2022 and a 56% reduction compared to BBU volume reported in 2021.

The AARV SSOs volumes over the past two years were 17,787 gallons in 2023, 15,522 gallons in 2022, and 12,520 in 2021. This is an overall 30% increase when comparing the volume from 2021 to 2023 and a 13% increase since 2022. There was a single incident due to a car accident, on 2/19/2022, which damaged an AARV at a canal crossing contributing 9,169 gallons towards the 15,522 gallons. The greatest volume reported for AARV incident in 2023 was 6,644 gallons for a non-County Contractor break.

The manual air release valves (ARV) volume discharged in 2023 was 7,012 gallons and 28,474 gallons in 2022.

The PS SSO volume recorded in 2023 was 325,416 gallons, 1,785 gallons in 2022 and 75 gallons

in 2021. The PS SSO volume sharply increased in 2023 when compared to 2021 and 2022. Mainly due to a PS SSO of 236,000 gallons caused by a gasket failure at a check valve.

In 2023, the source responsible for the largest fraction of the total volume discharged was attributed to the force main SSO. The volume of FM SSO was 1,859,753 gallons in 2023, 189,867 in 2022 and 893,572 in 2021. There was a 90% increase in FM SSO volume since 2022 and 52% increase compared to 2021. There was reduction in number of SSOs since 2022 but an increase in volume. The largest FM SSO Volume reported in 2023 was for 777,524 gallons and the incident was caused by a non-County Contractor breaking a FM.

The gravity main SSO volume has increased from 2,806 gallons in 2021 to 382,063 gallons in 2022 to 406,696 in 2023. The elevated gravity main volume tabulated for the calendar years 2022 and 2023 correlated to the occurrence and the severity of several heavy rain events.

Section 5.4 provides a breakdown of the volume attributed to various SSO causes.

5.3 Average Duration of Sanitary Sewer Overflows

The average duration of SSO events can be viewed in Table 5.1. For BBUs, the “Time” and “Duration” parameters are seldom characteristically the same. As a result, BBUs have not been included in the calculations of average duration.

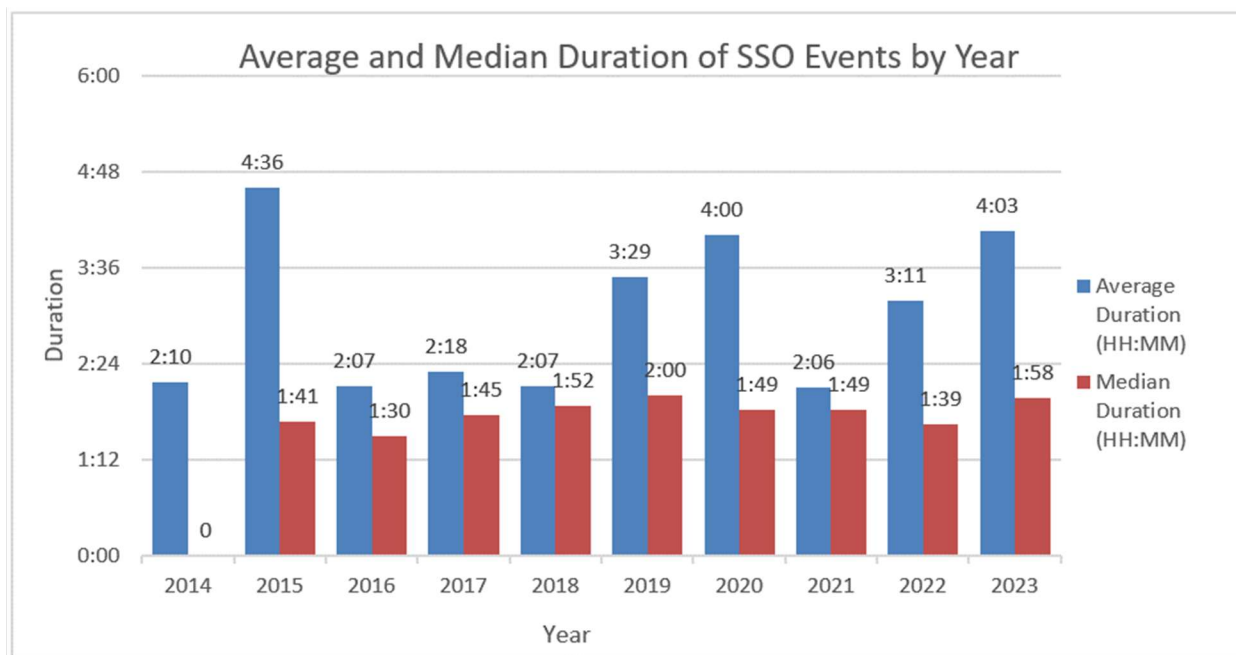


Figure 5. 4 - Average and Median Duration of SSO Events by Year

Table 5.1 contains the average (arithmetic mean) and median (the number in the middle of the set of given numbers) for the duration of all SSOs in the reporting period. The average and median duration for all SSOs in the reporting period remained within the range of previous reporting periods.

Table 5- 1 - Average and Median Duration of SSO Events

Year	Average Duration (HH:MM)	Median Duration (HH:MM)
2014	2:10	N/A
2015	4:36	1:41
2016	2:07	1:30
2017	2:18	1:45
2018	2:07	1:52
2019	3:29	2:00
2020	4:00	1:49
2021	2:06	1:49
2022	3:11	1:39
2023	4:03	1:58

5.4 Cause of Sanitary Sewer Overflows

A breakdown by cause of SSOs is shown in Figure 5.5. A complete breakdown of SSO causes is available in Appendix B of this document.

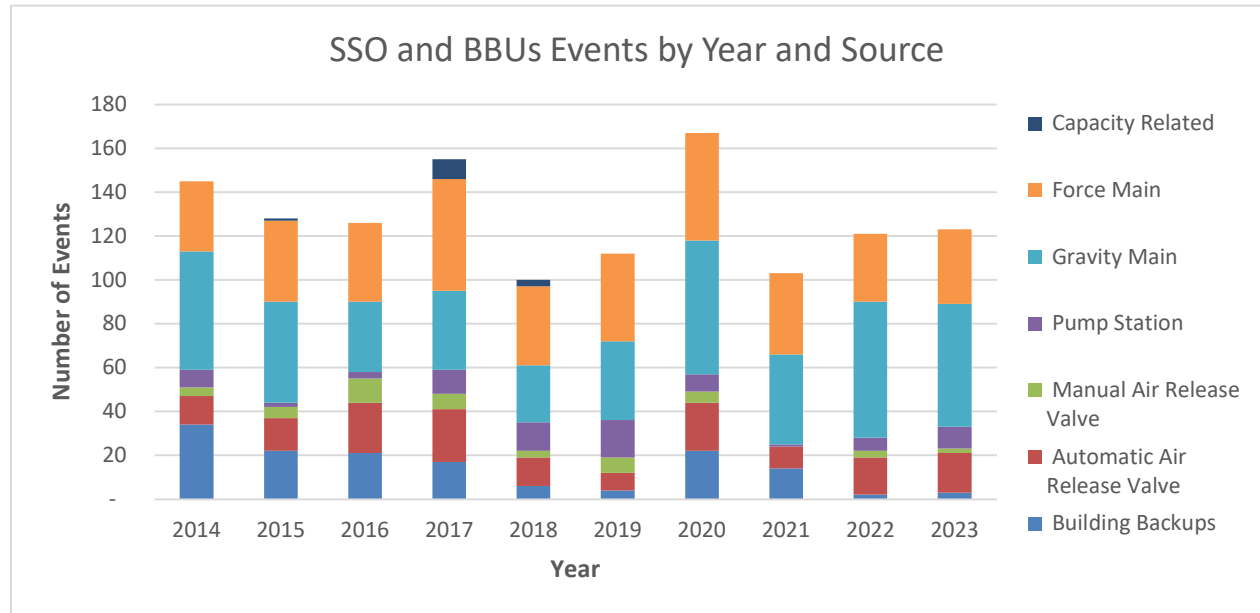


Figure 5. 5 - SSO and BBU Events by Cause

The number of SSOs caused by grease blockages in the system increased by 19% between 2021 and 2023, with 35 and 43 events, respectively and increased by 7% between 2022 and 2023, with 40 and 43 events, respectively.

Blockages attributed to other causes than grease include, but are not limited to wipes, rags, construction debris, rain catcher, etc. There were 23 of these events in 2021, 24 in 2022, and 21 in 2023. From 2021 to 2023, there was a 10% reduction since 2021 and a decrease of 14% from 2022 to 2023.

In 2023, broken infrastructure due to corrosion continued to decrease. In fact, there were a 20% and a 50% decrease since 2022 and 2021 respectively.

Contractor related breakages decreased from 16 (2022) to 13 (2023) but remain higher than in 2021 when there were only 10 incidents.

Breakages attributed to other causes increased from 24 incidents in 2021 to 34 in 2023, a 29% increase. There was a 6% increase from 2022 to 2023. The root causes of these breakages include but are not limited to malfunction, valve, pumps, or other equipment components, electrical issues, and bedding settlement.

The amount of SSOs and BBUs classified as “Other Cause” may include PS related SSOs as FPL Service Outage, Bypass Operation, SCADA, and other issues.

Figure 5.6 shows the total volume of all SSOs broken down by the cause. A full breakdown of all SSO volumes is available in Appendix B of this document.

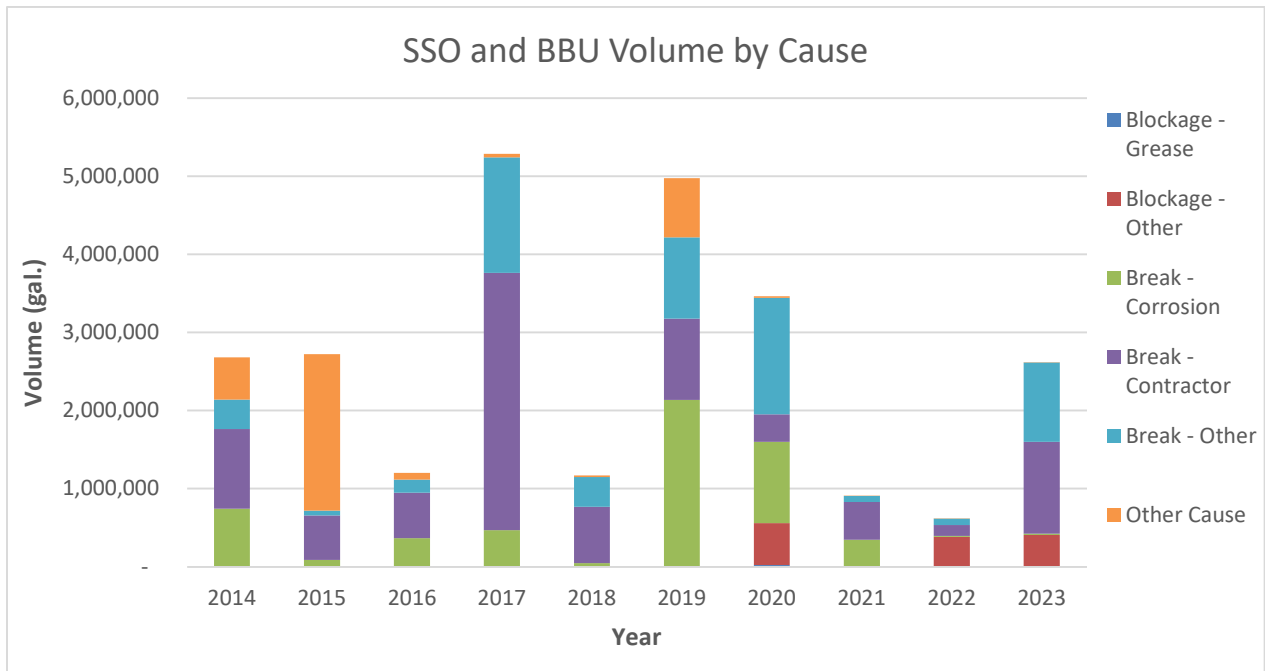


Figure 5.6 - SSO and BBU Volume by Cause

Figure 5.6 shows the total volume discharged as distributed by cause. In 2023, the total volume reported was 2,616,699 gallons compared to 617,856 in 2022 and 909,053 gallons in 2021.

The volume associated with contractor breaks and other breaks were the two largest causes in 2023. Breakages attributed to contractors greatly increased to 1,174,271 in 2023 from 484,412 gallons in 2021 and from 140,915 gallons in 2022, increases of 59% and 88% respectively. Breakages attributed to other causes also increased in 2023 to 1,014,472 gallons compared to the 80,178 gal. in 2021 and 81,013 gallons in 2022. Several bedding settlements events and a pumps station broken valve with large volumes resulted in this increase.

The volume for Grease related blockages reported in 2023 was 5,017 gal. which is an increase from 1,577 gal. in 2021, and from 2,063 gal. in 2022. This represents increases of 69% and 59% respectively.

The volumes associated with spills due to other blockages increased from 1,1421 gallons in 2021, to 380,255 gallons in 2022 and 403,422 gallons in 2023. This represents an increase of 6% from 2022 to 2023.

6.0 Amendment to Last Annual Report

There are no amendments to the 2022 Annual Report.

Appendix A Work Progress Tables

Table A-1 Continuing CMOM Programs January 1, 2023 through December 31, 2023

CMOM Program	CMOM Program Status	CD Reference	Significant Activities / Key Accomplishments
<p>Adequate Pumping, Transmission and Treatment Capacity Program</p>	<p>Work on the program is ongoing.</p>	<p>Section VI, Paragraph 18(a)</p>	<ol style="list-style-type: none"> 1. Continued with the monitoring and tracking of the monthly Elapsed Time (ET) submittals from each Volume Sewer Customer Utility. 2. Placed under Initial Moratorium (IM) Pump Station basins that exceeded the maximum 10 hours pursuant to the Nominal Average Pump Operating Time (NAPOT). 3. Placed under Incomplete Moratorium (IN) Pump Station basins that failed to submit ET readings or not submitted by the 14th of the following month, as required by the Miami-Dade County Code. 3.1 Used the PS Database to automatically generate and send Notification Letters to all Utilities and Private systems that failed to submit ETs. 4. Continued to use the WEB application for the monthly submittal and tracking of the ET readings to automatically place pump station basins under Incomplete Moratorium (IN) every time a Triplicate Reading was detected. 4.1 Used the PS Database to automatically generate and send Notification Letters to all Utilities and Private systems when TRIPLICATE ET readings were reported. 5. Continued generating the monthly NAPOT Status & Sewer Allocation reports for all Utilities and Building Officials. All Utilities and Building Officials were previously notified of how to access the NAPOT Status on the WEB, by using the PS Estimator WEB Application. 6. Sewer Allocations were de-allocated manually for municipalities according to their monthly reports as submitted to RER-DERM. 6.1 Completed automatic de-allocations of reserved flows for projects that are 10 yrs. or more in the system. 6.2 Completed automatic de-allocations of reserved flows for projects that are less than or equal to 500 GPD and are more than 5-yrs. in the system. 7. Quarterly Utility Round Table (URT) Meetings were held virtually. During the previous quarter, two (2) meetings were held: September 27 and December 13, 2023. 8. Continued to use the PS system/database to track PS basins, new or upgraded with 26 HP or larger pumps, required to submit ET readings for ALL-PUMPS ON and Midnight-to 5 am hours. 9. Continued to review Sanitary Sewer System Evaluations, or Amendments, submitted by the utilities. PS moratoriums were reverted as the utilities demonstrated compliance with the SSES, Code requirement of 5,000 GPDIM for the 2nd Cycle. 9.1 Planned to continue the update of the 4th Cycle SSES Requirements / Guidelines. The 4th Cycle report will be due by 11/12/2032 for all the public utilities. 9.2 Continued enforcement of utilities still pending to complete the SSES 2nd Cycle. 9.3 Planned to start reviews of the Utilities SSES 3rd Cycle Report submittals. 10. Completed the review of the GIS Water & Sewer As-Built / Atlases submitted by each Utility in January-2023 in order to assure compliance with Code requirements. 10.1 DERM staff continued using the GIS Water & Sewer Atlases & As-Builts layers to determine Adequate Pumping, Transmission, and Treatment capacity, and other reviews/approvals requiring Water and Sewer information. 10.2 Upon completion of the Reviews of the GIS submittals, DERM scheduled meetings with Utilities to address and/or to correct issues encountered in the GIS files submitted in January 2023. 10.3 DERM reviewed the reports submitted in June 2023 from all VSCO utilities regarding Non-Vacant properties not connected to public water/sewer. 11. Updated Moratorium status of PS basins for which the utility completed and certified the Corrective Action Plan(s) (CAP) to bring basin Nominal Average Pump Operating Time (NAPOT) below the 10 hours. 11.1 DERM completed coordination with IT staff to further enhance the PS database to place PS under moratoriums automatically. 12. Continued Electronic reviews for construction permits pertaining to new or upgrades of Domestic Wastewater Collection and Transmission systems for ALL utilities within the Miami-Dade County service areas.

Table A-1 Continuing CMOM Programs January 1, 2023 through December 31, 2023

CMOM Program	CMOM Program Status	CD Reference	Significant Activities / Key Accomplishments
Pump Station Remote Monitoring Program	Work on the program is ongoing.	Section VI, Paragraph 18(b)	Work on the program has been ongoing, completed Data Review & Data Configuration sections of the project plan. Currently completing the reporting components for the WWTP/WTP Custom Monthly Regulatory Reports. Configuration of the Pump Station data mapping is ongoing, as is sensor importing for Rain Vieux Data, USGS data and NOAA data. The pump station monitoring system shall continuously monitor, report and transmit data.
Wastewater Collection and Transmission Model	Work on the Model is ongoing.	Section VI, Paragraph 18(c)	<p>An updated version of the WASD WCTS effective model incorporated all the changes to the system provide in the last quarter of FY2021. The effective hydraulic model submittal included:</p> <ol style="list-style-type: none"> 1. InfoWorks ICM Transportable Model Files 2. Model Changes Log 3. Transmittal Letter with summary of modifications 4. Dashboard – 2020 AADF 5. User Defined Flags – CSV File, TM, Changes Log 6. Inflows File <p>The model was updated to match field information after visits to CDWWTP and PS0001. The interceptors going to PS0001 were updated for elevation based on latest survey data that was performed by WASD. Extensive analysis was done to evaluate the capacity of PS0001 interceptors in order to plan for developments and growth in this area.</p> <p>The model also includes a Pump Station Dashboard that provides a detailed summary/overview of the pump station results for existing scenario annual average daily flow condition was delivered along with the effective model.</p> <p>The model update was completed through October, 2021.</p> <p>The modifications made to the calibration model networks were incorporated into the latest effective model version which is shared with WASD Planning Division and other consultants as required. The Effective Model version represents existing conditions of the system. This version of the model is validated recurrently with observed flow data for distribution at the wastewater treatment plants. In addition, based on findings from calibration and the latest effective model, the CD PMCM updated the model networks corresponding to planning horizons (2020, 2025, and 2035) previously developed by WASD Planning Division.</p> <p>A detailed report was developed which documents the calibration process, the latest calibration and validation results obtained, as well as main challenges of the overall WASD model calibration process. The report also included recommendations and steps to follow for the next 5-year hydraulic model calibration cycle. This report can be made available upon request as dictated in Section VI, Paragraph (18).(c).(iv) of the Consent Decree.</p>
Spare Parts Program	Work on the program is ongoing.	Section VI, Paragraph 18(d)	<p>This program is a continuing inventory management program for spare parts for the WCTS and WWTPs.</p> <p>The existing Spare Parts Inventory Management Program will be enhanced as the following new CMOM Programs are implemented: Gravity Sewer System Operations and Maintenance Program; Pump Station Operations and Preventative Maintenance Program; Force Main Operations, Preventative Maintenance and Assessment/Rehabilitation Program; and the Wastewater Treatment Plants Operations and Maintenance Program. The existing program will be enhanced as the new CMOM Programs are implemented. Work on the program is ongoing and will continue beyond 2023.</p>

Table A-1 Continuing CMOM Programs January 1, 2023 through December 31, 2023

CMOM Program	CMOM Program Status	CD Reference	Significant Activities / Key Accomplishments
Volume Sewer Customer ("VSC") Ordinance Program	Work on the program is ongoing.	Section VI, Paragraph 18(e)	<ol style="list-style-type: none"> 1. Monitored and tracked the monthly submittal of the Elapsed Time (ET) readings from each Volume Sewer Customer utility. 2. Automatically Placed under Moratorium Pump Stations (PS) basins under the jurisdiction of the Volume Sewer Customer utilities that exceeded the maximum 10 hours pursuant to the Nominal Average Pump Operating Time (NAPOT). 3. Placed automatically under Incomplete Moratorium (IN) Pump Station basins that failed to submit ET readings or not submitted by the 14th of the following month, or if TRIPLICATE readings detected, as required by the Miami-Dade County Code. 3.1 Used the completed automatization of the WEB ET Application to generate and send Notification Letters to all Utilities and Private systems when they fail to submit ETs. 4. Updated Moratorium status of PS basins under the jurisdiction of the Volume Sewer Customer utilities for which the utility completed and certified the Corrective Action Plan(s) (CAP) to bring basin Nominal Average Pump Operating Time (NAPOT) below the 10 hours. 5. Created the Volume Sewer Customer Utilities monthly Nominal Average Pump Operating Time (NAPOT) Status Report. Moratoriums were updated accordingly. 6. Continued to use the PS system/database to track PS basin Moratoriums related to SSOs. 6.1 Completed enhancement of the PS Database to flag the PS if placed under moratorium for No ETs or Triplicate Readings, SSOs, SSES, other. 7. Issued enforcement letters or RFIs for SSO events reported or documented by DERM personnel, as needed. 7.1 Placed Moratoriums on basins that experienced multiple SSOs, in order to minimize or prevent additional SSOs. 7.2 Monitored the 192 Smart Cover Technology Units installed in manholes experiencing or had the potential to cause SSOs events located within the Stormwater Drainage Area C-6 and C-7. The objective was to assist the utilities and to prevent additional SSOs. 8. Continued to review the Volume Sewer Customer's Sanitary Sewer System Evaluations (SSES), or Amendments, submitted by the Volume Sewer Customer utilities. 8.1 Moratoriums status was reverted as the utilities demonstrated compliance with the SSES, Code requirement of 5,000 GPDIM. 8.1.a Moratoriums remain in place for several PS basins under the jurisdiction of Homestead, Opa-Locka, Hialeah and North Bay Village, for failure to demonstrate compliance and/or provide support documentation. 9. Followed-up on the enforcement action against utilities that reported SSOs during this period. Moratoriums were placed on repeat SSO to prevent future discharges subject to the utility implementation of corrective actions. 10. Virtual Meetings continued to be held with the Utility/Municipal Officials during this period. 11. Implemented automatic De-Allocations of reserved flows that have been in the database for 10 years or more. This process provided additional flow capacity for new/future developments. 11.1 Performed manual De-Allocations of reserved flows that have been in the database for projects completed, expired, canceled or CO'ed. 12. As needed, met with all Volume Sewer Customer utilities and/or representatives that participated in the two (2) Virtual URT Meetings held during the last two (2) Quarters in 2023. 13. Reviewed Annual and Semi-annual reports submitted by the Volume Sewer Customer Utilities, which include Illicit Stormwater Connections, SSES and CMOM work related reports. 14. Completed reviews of the GIS WASD As-Built / Atlases submitted by each Volume Sewer Customer Utility in January-2023 to assure compliance with Code requirements. 15. Continued with the inspection program of all public and private sanitary sewer pump stations in the County. 15.1 DERM initiated enforcement actions for violations/deficiencies identified during the inspections. 16. Hiring of new engineering staff was completed to assist in the reviews of multiple reports from the Volume Sewer Customer Utilities. 17. Seven (7) Volume Sewer Customer Utilities were notified about the submittal of the COI Televising Repairs report due on December 31, 2023.

Table A-2 New CMOM Programs January 1, 2023 through December 31, 2023

CMOM Program	CMOM Program Status	CD Reference	Significant Activities / Key Accomplishments
Fats, Oils and Grease (FOG) Control Program	Approved by EPA/FDEP on September 7, 2017	Section VI, Paragraph 19(a)	<p>The FOG Control Program and FOG Ordinance were approved by the EPA and FDEP on September 7, 2017. The FOG Control Program Ordinance was approved by the Board of County Commissioners on February 21, 2018 and became effective March 5, 2018. Work on the program was ongoing.</p> <ol style="list-style-type: none"> 1. Provided updated in-house training to FOG Control Technicians and Inspectors. 2. Distributed Outreach flyers during inspections by FOG Technicians and inspectors, at the front desk of DERM Plan Review and at the front desk of the Water & Wastewater Division office. Reevaluated our outreach for Food Service Establishments (FSE) in order to adapt to new challenges. 3. Continued FOG Outreach, including workshops. Inspectors and technicians attended FDEP Sampling Training and West Coast Inspector workshops in person. FOG and Utility Round Table meetings were held virtually via Microsoft Teams. 4. Continued to receive monthly hauled waste disposal data from WASD and Pompano/Broward using the eManifest system. 5. Updated FSE FOG Operating Permit (GDO) conditions, and included training requirements. 6. Continued enforcement and compliance assistance with Non-Grease Interceptors (NGIs) FSE. 100% of these facilities are under enforcement. Met with Enforcement Section staff and requested to prioritize these efforts. 7. Updates to the Liquid Waste Transporter (LWT) permit conditions were not completed this year. LWT permitting activities are being performed by the DERM-PRD team. 8. DERM continues oversight of monthly reports submitted by haulers to identify commingling of septage and FOG waste. 9. Continued to receive eManifest from LWTs. LWTs not submitting eManifest were advised that their operating permit would not be renewed. 10. Continued to perform and track FOG Construction Inspections, and to document inspection results to improve FOG Plan Review procedures. 11. Continued to track FOG Hot Spots and identify sources(s) and root cause(s). Continued to collect monthly accelerated FOG maintenance reports from utilities. 12. Continued to work with equipment manufacturers to get FOG Control Devices approved for FOG2.0. 13. FOG related tasks associated with LW-ST2.0 Liquid Waste Transportation & Disposal Guidance Manual were not completed due to lack of staff. 14. Continued to track/record Key Performance Indicators and Performance Measures to evaluate and improve the FOG Control Program, to be used for the 7th FOG Control Program Annual Review Report. 15. Developed or approved training programs for 2024 permitting cycle for LWTs and Disposal Facilities. 16. Continued the Public Outreach program in collaboration with WASD. Content for outreach material was designed by staff and sent to RER Communications Department which developed and distributed door hangers and mail out materials. 17. Contacted local business improvement districts (BIDs) to improve the outreach for businesses. BIDs were invited to quarterly virtual outreach events. 18. Continued working in collaboration with municipalities to reduce FOG impact in the Collection system, including sharing information and resources. Specifically City of Miami Beach, Town of Medley, North Miami, Coral Gables, and Opa-Locka. 19. Continued quarterly coordination meetings with the disposal facility (WASD) for the LWTs program. 20. Continued enforcement (and compliance assistance) with FSEs to procure compliance with the current regulations. This includes unpermitted facilities, as well as existing facilities with FOG discharges over the minimum allowed, or not complying with operating permit conditions. 21. Started to perform annual routine inspections to the current 8,136 GDO permitted facilities. The program is in the process of filling vacant positions and pending approval of additional staff. 22. DERM has started the implementation of the use of realtime level monitoring systems (e.g., SmartLevelTM/SmartCover). Hot Spots inspections are being performed by the SSO Response & Prevention Program in close coordination with the FOG Program Supervisors. 23. Planned to implement inspections to residential areas identified by the Utilities as potential sources of FOG blockages. 24. Planned to begin confirmation inspections to facilities reported as closed. Estimated that 50% of the total 3,756 facilities are expected to be inspected by 2022-2023, pending approval of additional staff. Inspections have not started due to frequent turn over. 25. Continued reviewing OL/CU/LBTR applications for FSEs. To assure compliance with FOG Control Program regulations.

Table A-2 New CMOM Programs January 1, 2023 through December 31, 2023

CMOM Program	CMOM Program Status	CD Reference	Significant Activities / Key Accomplishments															
			<p>26. Continued reviewing construction plans for FSEs, to assure compliance with current regulations codified under 24-42.6(8) and (9).</p> <p>27. FOG Accelerated Maintenance Application was completed and implemented. Pending further testing by Municipalities.</p> <p>28. Performed inspections in response to SSOs due to grease.</p>															
Sewer Overflow Response Plan (SORP)	Approved by EPA/FDEP on August 15, 2017	Section VI, Paragraph 19(b)	<p>The SORP was approved by the EPA and FDEP on August 15, 2017. On August 15, 2017, EPA/FDEP also sent comments on the Standard Operating Procedures for Calculating the Recovered SSO Volume. The letter was received by WASD on August 18, 2017. WASD submitted the Response to EPA/FDEP Comments on the Standard Operating Procedures for Calculating the Recovered SSO Volume on October 17, 2017. Work on the program was ongoing.</p> <ol style="list-style-type: none"> 1. Continued all required SSO reporting 2. Continued holding monthly SSO evaluation meetings 3. Continued use of the Consolidated SSO Database 4. Continue development of the Building Backup Application. 5. Began monthly meeting with FDEP to review spills, abnormal events and SSOs. 															
Information Management System (IMS) Program	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(c)	<p>The IMS program was approved by the EPA and FDEP on October 17, 2017. Work on the program was ongoing.</p> <ol style="list-style-type: none"> 1. Continued working on transitioning PCTS software from Proliance to e-Builder, to enhance Construction Contracts Management project close-out business practices. 2. Continued the development of CMOM performance measures and KPI tracking. Draft SORP KPIs have been developed, with the development of the GSSOMP KPIs in process. 3. Continued enhancements of EAMS to improve maintenance processes and activities, including implementation of PFAC codes, maintenance checklists, incorporating monitored data for automating schedules, and deployment of mobile devices. 															
Geographic Information Systems (GIS) Program	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(c)(x)	<ol style="list-style-type: none"> 1. Manhole rim and pipe inverts and their inclusion into GIS - Completed. Updates continue as part of the GIS data maintenance process. 2. Streamlining the manual as-built to GIS process to satisfy 90 day requirement – Completed. Improvements continue as opportunities arise. 3. GIS to Hydraulic Model Integration to satisfy 90 day requirement from GIS to Model – Completed. Updates continue. 4. Electronic As-Built Submittal - Completed. 5. Field solution for reviewing GIS infrastructure information, asbuilt files and associated documents. <p>As agreed on May 25, 2017, during the EPA/FDEP/WASD Monthly Teleconference Meeting, WASD has been tracking all water and wastewater assets as-builts and Active As-built Supplemental Information System (“AAS IS”) forms, including new and corrected water and wastewater asset attribute data to GIS since June 6, 2017. See the tracking metrics for these requirements below:</p> <div style="text-align: center;"> <p>Approved Projects by Time Unit (Quarter vs. Percent)</p> <table border="1"> <caption>Approved Projects by Time Unit (Quarter vs. Percent)</caption> <thead> <tr> <th>Year / Quarter</th> <th>Under 90 Days (%)</th> <th>Over 90 Days (%)</th> </tr> </thead> <tbody> <tr> <td>2023 Q1</td> <td>47</td> <td>29</td> </tr> <tr> <td>2023 Q2</td> <td>60</td> <td>20</td> </tr> <tr> <td>2023 Q3</td> <td>54</td> <td>20</td> </tr> <tr> <td>2023 Q4</td> <td>62</td> <td>9</td> </tr> </tbody> </table> </div>	Year / Quarter	Under 90 Days (%)	Over 90 Days (%)	2023 Q1	47	29	2023 Q2	60	20	2023 Q3	54	20	2023 Q4	62	9
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2023 Q4	62	9																

Table A-2 New CMOM Programs January 1, 2023 through December 31, 2023

CMOM Program	CMOM Program Status	CD Reference	Significant Activities / Key Accomplishments
Sewer System Asset Management Program (SSAMP)	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(d)	The SSAMP was approved by the EPA and FDEP on October 17, 2017. Work on Program is ongoing. 1. Work with WASD staff and outside consultants to develop scope for the capture of asset inventory and condition assessment for the Pump Stations Division. 2. Work with WASD staff and outside consultants to capture of asset inventory at the Wastewater Treatment Plants. 3. Work with EAMS Division to facilitate input of asset inventory and conditions assessments within the department's asset management systems.
Gravity Sewer System Operations and Maintenance Program (GSSOMP)	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(e)	The GSSOMP was approved by the EPA and FDEP on October 17, 2017. Work on the program was ongoing. 1. Continued to deploy Smart Covers to "hot spots" to closely monitor and prevent SSOs. 2. CCTV contract to inspect gravity sewer mains for Pump Station 0002 pending NTP. 3. WPO identified defects are in the process of repair. 4. Wastewater AMI for Volume Sewer Customers has been integrated into SCADA.
Pump Station Operations and Preventative Maintenance Program (PSOPMP)	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(f)	The PSOPMP was approved by the EPA and FDEP on October 17, 2017. Work on the Program was ongoing. 1. Work with WASD staff and outside consultants to develop scope for the capture of asset inventory and condition assessment for the Pump Stations Division. 2. Completion of SOPs and work instructions for the following units within Pump Station Division: • Diesel Maintenance Unit: (5) SOPs and (4) work instructions • Wet-Well Rehabilitation Unit: (3) SOPs Work performed and completed by Quality Assurance & Quality Control Division in conjunction with Pump Stations Division
Force Main Operations, Preventative Maintenance and Assessment/Rehabilitation Program (FMOPMARP)	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(g)	The FMOPMARP was approved by the EPA and FDEP on October 17, 2017. 1. The Force Main Assessment Program is pending approval of the Criticality Assessment and Prioritization Report (submitted to the EPA/FDEP on July 17, 2018). 2. ARV program is ongoing.
Force Main Rehabilitation/Replacement Program (FMRRP)	Approved by EPA/FDEP on September 28, 2017.	Section VI, Paragraph 19(g)(iv)	The FMRRP was approved by the EPA and FDEP on September 28, 2017. Work on the program was ongoing.
WWTP Operations and Maintenance Program (WWTP OMP)	Pending EPA/FDEP approval.	Section VI, Paragraph 19(h)	EPA/FDEP sent comments on the Hauled Waste Guidance Manual November 27, 2017. Response to EPA/FDEP comments on the Hauled Waste Guidance Manual was submitted on February 13, 2018. The WWTP OMP and the Hauled Waste Guidance Manual were approved by the EPA/FDEP on April 19, 2018 and June 4, 2018, respectively. The final WWTP OMP was submitted to EPA/FDEP on August 6, 2018. Work on the program was ongoing. 1. Continued random collection of hauled waste as a standard practice. The random sample collection practice and procedures used at the SDWWTP are in accordance with EPA's Handbook Guidance Manual for Control of Hauled Wastes EPA 833 B 98 003, Section 24-42.4 of the Miami-Dade Code, and the Hauled Waste Guidance Manual. 2. RER-DERM/WASD Coordination Meetings were held via Microsoft Teams on August 11, 2022 and on November 2, 2022 to discuss Hauled Waste Program and any issues or concerns related to illicit hauled waste or discharges to the plant or collection system. 3. Work continued with WASD staff and outside consultants to capture asset inventory at the three (3) Wastewater Treatment Plants. 4. The ratio of unplanned (49%) to planned (53%) maintenance continues to improve. Work Order aging is also reducing. This improved maintenance and reduced aging is resulting in reduced emergency repairs.
Specific Capital Improvement Projects (CIP)	Ongoing	Section VI, Paragraph 19(i)	A summary of these CIPs and their significant activities for the previous calendar year can be found in Tables A-3.1, A-3.2, and A-3.3 for the WWTPs; Tables A-4.1 and A-4.2 for the WCTLs; and Table A-5 for the Sewer Pump Station Systems included in Appendix A.
Financial Analysis Program (FAP)	Approved by EPA/FDEP on October 17, 2017.	Section VI, Paragraph 19(j)	The FAP was approved by the EPA and FDEP on October 17, 2017. Work on the program was ongoing. Financial Analysis Program Report, which includes the expenditures for both operating and capital from FYTD October 2022 to September 2023 can be found in Appendix C of the 2023 Semi-Annual Report No. 2 submitted to EPA and FDEP on January 31, 2024.

Table A-3.1 South District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities /Key Accomplishments
1.1	Headworks	The SDWWTP Headworks project will be performed pursuant to Paragraph 19(i) and Appendix D. This project involves routine repairs on existing bar screen mechanisms in headwork structure prior to aerated grit chambers. Failure of bar screen mechanism could result in the blinding of the bar screen and cause an overflow of raw sewage from the plant headworks structure towards nearby surface waters, especially during peak wet weather.	This project was completed on November 6, 2019, ahead of the CD compliance date of February 23, 2020.
1.2	Oxygen Production	The SDWWTP Oxygen Production project will be performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to construct a new electrical building which will include new electrical equipment, procure and install a new compressor #4 and retrofit existing air compression unit #3.	On July 14, 2021, the County notified EPA and FDEP of a Potential Delay and February 25, 2022 a Failure to Meet Compliance Date for CD CIP 1.2 – Oxygen Production at SDWWTP due to delays in the field conditions, equipment manufacturing delays and system integration of this project during the construction phase. The project achieved Substantial Completion on September 15, 2023.
1.3	Oxygenation Trains	The SDWWTP Oxygen Trains project will be performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to retrofit aeration mixers and rehabilitate and apply surface coating to the structure. This project was split into three child projects: 1.3(1) the structural rehab of the trains; 1.3(2) the Mixer Upgrades and the Electrical Building Expansion (OOL ST-1B) managed by OOL; and 1.3(3) for Substations 5/6 and 15/16 (OOL ST-2D) managed by OOL	1.3(1) Construction Train 4 Oxygenation Tanks Structural Rehab completed July 31, 2020. 1.3(2) Permitting for Electrical Building Expansion and Oxygenation Trains Mixer Upgrades was completed and construction for the Electrical Building and Mixer Upgrades are in Construction. 1.3(3) Contractor Notice to Proceed was issued on May 2, 2022. Construction is currently still ongoing.
1.4	Chlorine Building	The SDWWTP Chlorine Building project will be performed pursuant to Paragraph 19(i) and Appendix D. This project involves replacement of motor control centers, relocation of electrical panels and roof repairs of the old chlorine building where flushing water pumps are to remain.	This project reached substantial completion on January 27, 2022, ahead of the CD compliance date of August 7, 2023.
1.5	Effluent Pump Station	The SDWWTP Effluent Pump Station project will be performed pursuant to Paragraph 19(i) and Appendix D. This project involves an upgrade of the existing obsolete pump control systems, upgrade of the pumps drives and motors, and structural rehabilitation of pump station wet well, i.e. chambers 2 through 4. This project has been split into three separate child projects: 1.5(1) structural rehabilitation of the effluent pump wet wells; 1.5(2) the building improvements and equipment for the remaining pumps (1-6); and 1.5(3) the electrical equipment associated with pumps 7, 8 and 9.	1.5(1) This child project reached substantial completion on May 26, 2020. 1.5(2) On October 29, 2021, the County notified EPA and FDEP of a Potential Delay and on April 7, 2022 submitted a Request for Time Extension and Project Status Update Notification for CD CIP 1.5 – Effluent Pump Station at SDWWTP due to COVID-19 Pandemic caused delays in equipment repairs, and the unforeseen site conditions during construction and impacted the schedule by 14-days. The Compliance Date is April 7, 2022 and the project achieved substantial completion on April 21, 2022. A Completion Notification letter was submitted on June 2, 2022. 1.5(3) This child project reached substantial completion on January 23, 2016.
1.6	Gravity Sludge Thickeners	The SDWWTP Gravity Sludge Thickeners project will be performed pursuant to Paragraph 19(i) and Appendix D. The objective of this project is to provide a combined Thickening and Dewatering facility under one common building. The existing sludge concentrators will be abandoned and a centrifuge thickening system will be utilized. This project has been combined as one Thickening and Dewatering project for the South and Central District Wastewater Treatment Plants (Projects 1.6, 1.8, 2.12, 2.13, 2.16 & 2.18(2)) and will move forward under a design-build delivery method.	Design-Build project Notice to Proceed was issued on July 6, 2020. On December 28, 2022, the County requested a Time Extension and Project Status Update to EPA and FDEP. Construction continued.

Table A-3.1 South District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities /Key Accomplishments
1.7	Digesters and Control Buildings	The SDWWTP Digester and Control Buildings project will be performed pursuant to Paragraph 19(i) and Appendix D. The project involves the rehabilitation or replacement of digester roofs for Clusters 1 and 2; digester tank cleaning, structural rehabilitation and coating, sludge mixers improvement. This will prevent the loss of digestion capacity and the decline in biogas/methane production for power generation. In addition, it will decrease the amount of unstabilized sludge that will require landfill disposal. This project also includes the construction of a new Substation 7 & 8, a new Acid Phase building, and new Gas Flares.	On October 20, 2023, the County submitted a Force Majeure Notification and Request for a Time Extension for CD 1.7 Digesters and Control Building at SDWWTP. On October 31, 2023 a revised Force Majeure Notification and Request for a Time Extension for CD 1.7 Digesters and Control Building at SDWWTP. This project experienced a delay during the construction start-up and commissioning of Cluster No. 1. Construction continued.
1.8	Dewatering Facility	The SDWWTP Dewatering Facility project is being performed pursuant to Paragraph 19(i) and Appendix A. The purpose of this project is to replace the existing interim dewatering building with a new permanent dewatering facility. This will improve sludge dewatering and decrease solids accumulation in the secondary treatment process and prevent effluent limit violations. This project has been combined as one Thickening and Dewatering project for the South and Central District Wastewater Treatment Plants (Projects 1.6, 1.8, 2.12, 2.13, 2.16 & 2.18(2)) and will move forward under a design-build delivery method.	Design-Build project Notice to Proceed was issued on July 6, 2020. On December 28, 2022, the County requested a Time Extension and Project Status Update to EPA and FDEP. Construction continued.
1.9	FOG Removal Facility	The SDWWTP FOG Removal Facility project is being performed pursuant to Paragraph 19(i) and Appendix D. The current FOG separation tank is not capable of adequately handling solids load, resulting in excess odors and unanticipated manual labor to remove large amounts of grit, settled soils and hardened grease. The purpose of this project is to make modification to the existing FOG Removal Facility to provide short term improvements to the efficiency of operations associated with the processing of the combined flows of septage and grease and improve separation operations to the recently constructed FOG removal facility. This will result in the conveyance of oils and floating grease to a beneficial use option process and the removal of excess grit and settled solids.	This project was substantially completed on March 26, 2019, ahead of the CD compliance date of May 24, 2019.
1.10	Odor Control	The SDWWTP Odor Control project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to upgrade the odor control facilities serving Headworks Plant 1 and Plant 2.	This project reached substantial completion on April 19, 2023, ahead of the compliance date of April 25, 2023.
1.11	General Electrical	The SDWWTP General Electrical project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation and replacement of electrical controls and wiring as needed throughout the plant. This project schedule has been broken down into multiple child/sub projects to better reflect the way the work is being executed: 1.11(1.1) SDWWTP Substation 9-12; 1.11(1.2) Generator Repairs; 1.11(2) Replacement of primary feeders from Main Switchgear A & B to Effluent Pump Station Pumps 1-6 (Part of CD 1.5(2))	1.11(1.1) Construction continued. 1.11(1.2) Construction continued. 1.11(2) This project reached substantial completion on April 21, 2022.
1.12	Chlorine Contact Chamber Structural	The SDWWTP Chlorine Contact Chamber Structural project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the structural rehabilitation and coating of chlorine contact chambers 1 through 4. This project has been split into two separate child/sub projects: 1.12(1) Actuator Replacement and 1.12(2) Structural Rehabilitation.	1.12(1) Actuator Replacement reached substantial completion on June 5, 2018. 1.12(2) Structural Rehab. of Contact Chambers #3 and #4 completed on July 9, 2020. Procurement for Structural Rehab. of Contact Chamber #2 completed, NTP issued on November 30, 2020. Project reached substantial completion on April 5, 2021.

Table A-3.2 Central District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
2.1	Electrical Improvements	<p>The CDWWTP Electrical Improvements project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation and replacement of electrical controls and wiring as needed throughout the plant. This project schedule has been broken down into multiple components to reflect more accurately the way the work is being executed:</p> <p>2.1(1) CDWWTP General Electric In-house Construction - Substations 1, 2, 7A, 8A, 9A & 10A 2.1(2) Substations 3, 4A, 4B, 5 & 6 – This work is part of Project 2.27. 2.1(3) Substations 9 & 10 - This work is part of Project 2.10. 2.1(4) Substations 11 & 12 – This work is part of project 2.11. 2.1(5) Substations 15 & 16 – This work is part of Project 2.15. 2.1(6) Substations 17 & 18 – This work is part of Project 2.19. 2.1(7) Substations 7A, 8A, 9A & 10A</p>	<p>Note: The majority of this work will be done in conjunction with other CD projects.</p> <p>2.1(1) Construction completed. 2.1(2) Construction completed. 2.1(3) Construction completed. 2.1(4) Construction completed. 2.1(5) Construction completed. 2.1(6) Construction completed. 2.1(7) Construction completed.</p> <p>On October 6, 2023, the County submitted a Notification of Completion for CD 2.1 Electrical Improvements at CDWWTP was achieved on November 17, 2021.</p>
2.2	Building Improvements	<p>The CDWWTP Building Improvements project is being performed pursuant to Paragraph 19(i) and Appendix D. The project involves the repair of maintenance, operations control and administration buildings at the plant. It includes the repair of the roofs and the staff facility. This project was split into four child projects: 2.2(1a) administration building and asbestos abatement; 2.2(2b) administration building interior renovations; 2.2(1c) miscellaneous roof repairs; and 2.2(2) remodeling of bathrooms, locker rooms, and showers.</p>	<p>This project reached substantial completion on January 17, 2020.</p> <p>2.2(1a) Completed on June 1, 2015. 2.2(1b) Construction was completed on January 17, 2018. 2.2(1c) Construction was completed on October 19, 2016. 2.2(2) Construction was completed on January 17, 2020.</p>
2.3	Headworks Plant 1	<p>The CDWWTP Headworks/Grit Basin Plant 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing screening facilities at the CDWWTP influent pump station are inefficient. This results in the accumulation of rags and plastics in plant processes which sometimes leads to pump, mixer and clarifier collection mechanism failure. This project involves the addition of influent screens and a new electrical building with upgraded electrical and instrumentation equipment.</p>	<p>This project reached substantial completion on March 7, 2019, ahead of the CD Compliance Date of March 16, 2019.</p>
2.4	Headworks Plant 2	<p>The CDWWTP Headworks/Grit Basin project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing screening facilities at the CDWWTP influent pump station are inefficient. This results in the accumulation of rags and plastics in plant processes which sometimes leads to pump, mixer and clarifier collection mechanism failure. This project involves the addition of influent screens and a new electrical building with upgraded electrical instrumentation equipment.</p>	<p>This project was completed on August 13, 2019, ahead of the August 23, 2019 CD compliance date.</p>
2.5	Oxygenation Trains Plant 1	<p>The CDWWTP Oxygenation Trains Plant 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. The project involves the retrofitting of the aeration mixers, structural rehabilitation and surface coating application.</p>	<p>This project was completed on June 22, 2018, ahead of the April 12, 2019 CD compliance date.</p>
2.6	Oxygenation Trains Plant 2	<p>The CDWWTP Oxygenation Trains Plant 2 project is being performed pursuant to Paragraph 19(i) and Appendix D. The project involves the retrofitting of the aeration mixers, structural rehabilitation and surface coating application.</p>	<p>This project was completed on September 28, 2021, ahead of the April 14, 2022 CD compliance date.</p>
2.7	Secondary Clarifiers Plant 1	<p>The CDWWTP Secondary Clarifiers Plant 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to rehabilitate the structure and replace the sludge collection mechanisms in the plant. This project has been split into three separate child/sub projects: Project 2.7(1) includes coating of the walkways and replacement of RAS Pump discharge piping. Work on this project will be performed in conjunction with Project 2.9; Project 2.7(2) is for the upgrades of the Trains Mechanisms; and Project 2.7(3) includes the structural rehab of the Trains.</p>	<p>A Delay Notification and Request for Time Extension for CD 2.7, CD 2.8 and CD 2.9 Letter was submitted to EPA and FDEP on November 15, 2023. These projects are experiencing delays in procurement and construction phases of the projects. These delays have impacted the CD compliance dates and the County is requesting a time extension on the projects to a new proposed Compliance Date of December 31, 2027.</p>

Table A-3.2 Central District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
2.8	Secondary Clarifiers Plant 2	The CDWWTP Secondary Clarifiers Plant 2 project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to rehabilitate the structure and replace the sludge collection mechanisms in the plant. This project has been split into three separate child/sub projects: Project 2.8(1) includes replacement of RAS Pump discharge piping; Project 2.8(2) is for the upgrades of the Trains Mechanisms; and Project 2.8(3) includes the structural rehab of the Secondary Clarifier Trains.	A Delay Notification and Request for Time Extension for CD 2.7, CD 2.8 and CD 2.9 Letter was submitted to EPA and FDEP on November 15, 2023. These projects are experiencing delays in procurement and construction phases of the projects. These delays have impacted the CD compliance dates and the County is requesting a time extension on the projects to a new proposed Compliance Date of December 31, 2027.
2.9	RS Pump Stations Plant 1	The CDWWTP RS Pump Stations Plant 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the replacement of return sludge pump, piping, motor control centers and structural repairs to the pump stations. Work on this project will be performed in conjunction with Project 2.7(1).	A Delay Notification and Request for Time Extension for CD 2.7, CD 2.8 and CD 2.9 Letter was submitted to EPA and FDEP on November 15, 2023. These projects are experiencing delays in procurement and construction phases of the projects. These delays have impacted the CD compliance dates and the County is requesting a time extension on the projects to a new proposed Compliance Date of December 31, 2027.
2.10	RS Pump Stations Plant 2	The CDWWTP RS Pump Stations Plant 2 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the replacement of return sludge pump, piping, motor control centers and structural repairs to the pump stations. This project has been split into two separate child/sub projects: Project 2.10(1) is for the RAS Pump Stations No.1 through 5 and Project 2.10(2) is for the RAS Header Pipe.	2.10(1) This project reached substantial completion on March 15, 2023, ahead of the Compliance Date of December 1, 2024. 2.10(2) Construction of RAS Header Pipe was completed on July 7, 2017.
2.11	Effluent Pump Station	The CDWWTP Effluent Pump Station project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to replace the pump motors and related electrical equipment in the effluent pump station.	Consent Decree construction completion was achieved on June 17, 2021.
2.12	Sludge Thickeners Plant 1	The CDWWTP Sludge Thickeners Plant 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the replacement of the thickened sludge pumps, sanitary sewer pumps, HVAC and electrical systems in the concentrator pump station. It also involves the rehabilitation of concentrator collector mechanisms and structural rehabilitation and coating of concentrators. Specifically, this project will provide a combined Thickening and Dewatering facility under one common building. The existing sludge concentrators will be abandoned, and a centrifuge thickening system will be utilized.	Design Build project Notice to Proceed was issued on July 6, 2020. On December 28, 2022, the County requested a Time Extension and Project Status Update to EPA and FDEP. Construction continued.
2.13	Sludge Thickeners Plant 2	The CDWWTP Sludge Thickeners Plant 2 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the replacement of the thickened sludge pumps, sanitary sewer pumps, HVAC and electrical systems in the concentrator pump station. It also involves the rehabilitation of concentrator collector mechanisms and structural rehabilitation and coating of concentrators. Specifically, this project will provide a combined Thickening and Dewatering facility under one common building. The existing sludge concentrators will be abandoned, and a centrifuge thickening system will be utilized.	Design Build project Notice to Proceed was issued on July 6, 2020. On December 28, 2022, the County requested a Time Extension and Project Status Update to EPA and FDEP. Construction continued.
2.14	Digesters Plant 1	The CDWWTP Digesters Plant 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the complete rehabilitation of sludge digester clusters, i.e. roofs, concrete structures, recirculation and transfer pumps, mixers, and electrical pumps. This will prevent the loss of digestion capacity and the decline in biogas/methane production for power generation. In addition, it will decrease the amount of unstable sludge that will require landfill disposal.	On May 21, 2018, the County requested a Material Change to CD to cancel this project. Request under EPA/FDEP consideration.

Table A-3.2 Central District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
2.15	Digesters Plant 2	The CDWWTP Digesters Plant 2 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the complete rehabilitation of sludge digester clusters, i.e. roofs, concrete structures, recirculation and transfer pumps, mixers, and electrical pumps. This will prevent the loss of digestion capacity and the decline in biogas/methane production for power generation. In addition, it will decrease the amount of unstable sludge that will require landfill disposal. This project has been split into 4 child projects, one for each digester cluster.	2.15(1) Construction continued 2.15(2) Construction continued. 2.15(3) Procurement commenced. 2.15(4) Child project deleted as approved by EPA. A Request for Time Extension and Project Status Update for CD 2.15 Digesters Plant 2 was submitted on June 16, 2023
2.16	Dewatering Building	The CDWWTP Dewatering Building project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to construct a new dewatering facility and sludge cake conveyance system to the sludge storage buildings.	Design Build project Notice to Proceed was issued on July 6, 2020. On December 28, 2022, the County requested a Time Extension and Project Status Update to EPA and FDEP. Construction continued.
2.17	Chlorination Facilities	The CDWWTP Chlorination Facilities project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the design and construction of a new bulk sodium hypochlorite storage and dosing system in separate outdoor structures to replace the existing chlorine gas system.	Construction was completed on July 27, 2018, ahead of the CD compliance date of October 15, 2018.
2.18	Odor Control Systems	The CDWWTP Cogeneration Facility Improvements project is being performed pursuant to Paragraph 19(i) and Appendix D. This involves the replacement of the motor control center of the odor control buildings including air-conditioned electrical rooms. It also involves replacement of odor control chemical pumps, piping, valves, and gas stripping tower media. This project is being completed in conjunction with other related projects. Project 2.18(1) Headworks Odor Controls System was performed earlier in coordination with the Headworks projects (2.3/2.4). Project 2.18(2) will be performed in coordination with the Design-Build Dewatering project (2.16).	2.18(1) This child project reached substantial completion on September 11, 2019. 2.18(2) Design Build project Notice to Proceed was issued on July 6, 2020. On December 28, 2022, the County requested a Time Extension and Project Status Update to EPA and FDEP. Construction continued.
2.19	Co-Gen Facility	The CDWWTP Cogeneration Facility Improvements project is being performed pursuant to Paragraph 19(i) and Appendix D. The project involves the installation of two new cogeneration engines, cogeneration building improvements, replacement of biogas pipeline and installation of biogas conditioning system. Thus, this project has been split into three separate child projects: 2.19(1) Co-Gen Generator Replacement, 2.19(2a) Co-Gen Biogas Treatment Facilities, and 2.19(2b) Co-Gen Restroom and Building Rehab.	2.19(1) Project completed on January 27, 2016. 2.19(2a) Project paused at testing/commissioning stage due to lack of bio gas availability from Digester Clusters. EPA and FDEP notified of the delay on January 10, 2020 and May 21, 2020. 2.19(2b) Project completed on May 18, 2020.
2.20	Septage Uploading	The CDWWTP Septage Unloading project is required under Paragraph 19(i) and Appendix D. The CD scope of this project included the construction of a new septage handling station to remove FOG from the main wastewater treatment stream and treat either through digestion or an off-site third party facility. However, the violation associated with this project was resolved by requiring all hauled waste to be sent to the South District WWTP as of January 2013.	Motion to delete Project 2.20 Septage Uploading at CDWWTP was approved by the Court on December 28, 2016.
2.21	Pump Station 1	The CDWWTP Pump Station No. 1 project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to rehabilitate the pump station for the odor control system and rehabilitate the bar screen mechanisms.	Construction was completed on December 19, 2019, ahead of the February 26, 2021 CD compliance date.
2.22	Pump Station 2	The CDWWTP Pump Station No. 2 project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation of the pump station odor control system, rehabilitation of bar screen mechanism, and replacement pump stations flow metering to improve maintenance accessibility.	The flowmeter installation on this project installed on August 12, 2023 and the project met substantial completion.
2.23	O ₂ Plant Process Controls Phase 2	The CDWWTP O ₂ Plant Process Controls project is being performed pursuant to Paragraph 19(i) and Appendix D. Existing oxygen production systems are either failing or obsolete. The purpose of this project is to replace existing oxygen production systems.	Construction was completed on April 25, 2016, ahead of the CD compliance date of March 9, 2017 .
2.24	Gas Monitoring	The CDWWTP Gas Monitoring project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to monitor gas levels and place alarms in hazardous areas.	Construction was completed on September 29, 2017.

Table A-3.2 Central District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
2.25	Ventilation Improvements	The CDWWTP Ventilation Improvements project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to improve ventilation in hazardous areas and is being executed in conjunction with other Capital Improvement projects. This project schedule has been broken down into multiple components to more accurately reflect the way the work is being executed: 2.25(1) HVAC Improvements for air scrubber (Project 2.12, 2.13 and 2.16) 2.25(2) Headworks HVAC Improvements (Project 2.3/2.4). 2.25(3) Digester Control Building HVAC Improvements (Project 2.15(1)). 2.25(4) Pump Station 1 HVAC Improvements (Project 2.21). 2.25(5) Pumps Station 2 HVAC Improvements (Project 2.22).	2.25(1) Procurement continued. 2.25(2) Construction completed. 2.25(3) Construction completed. 2.25(4) Construction completed. 2.25(5) Construction completed.
2.26	Rehabilitation of Walkways and Stairways	The CDWWTP Rehabilitation of Walkways and Stairways project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the replacement of corroded walkways, stairways, railings, and grating throughout the plant. A portion of the project requires engineering services and construction of the remaining project scope that do not require engineering services is being performed.	Construction continued.
2.27	Oxygen Production	The CDWWTP Oxygen Production project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing units are near the end of useful life and prone to failure. The purpose of this project is to construct a new oxygen production system to provide full redundancy as existing units are near the end of useful life and prone to failure. Project 2.27(1) is for the initial site preparation and utility relocation work. Project 2.27(2) is for the balance of the work that will be completed under a design-build delivery method.	2.27(1) Oxygen Production Site Preparation was completed on June 29, 2017. 2.27(2) Design Build completed.
2.28	SCADA RTU Upgrades	The CDWWTP Building Improvements project was performed pursuant to Paragraph 19(i) and Appendix D. The old radio communication system was obsolete and it was difficult to procure parts. The purpose of the project was to upgrade the SCADA remote telemetry units to maintain operational sustainability.	This project was completed as of February 10, 2014, ahead of the CD compliance date of March 29, 2014.
2.29	High Strength Influent Impact Study	The CDWWTP High Strength Influent Impact Study was performed pursuant to Paragraph 19(i) and Appendix D. The CDWWTP was experiencing an increase in Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) loading. This study investigated the sources and conceptualized solutions to eliminate or mitigate the change in plant influent characteristics.	Completed. Work started February 2013 and was completed June 5, 2014, ahead of the June 24, 2014 CD compliance date.

Table A-3.3 North District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
3.1	Headworks and Sludge Degritting Transfer	The NDWWTP Headworks and Sludge Degritting and Transfer project is being performed pursuant to Paragraph 19(i) and Appendix D. This project is a two-phase approach to improve the existing screening facilities at the NDWWTP. In Phase 1, bar screens are replaced with perforated plate screens, and Phase 2 involves the upgrade of the pretreatment buildings for fire code compliance and replacement of primary sludge grit separation equipment.	Construction was completed on December 6, 2017 ahead of the April 7, 2018 compliance date.
3.2	Primary Clarifiers and Odor Control	The NDWWTP Primary Clarifiers and Odor Control project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation of the structures of the primary clarifiers. It also involves the rehabilitation of the mechanical and odor control systems at the plant. This project has been split into two child projects: Project 3.02(1) Replace Primary Clarifier Mechanisms for Primary Clarifiers #4 & 6 and Project 3.02(2) Primary Clarifiers and Odor Control Upgrades	3.2(1) Construction was completed on February 20, 2019. 3.2(2) Construction completed on September 14, 2022, ahead of the Compliance Date of April 6, 2023.
3.3	Oxygenation Trains	The NDWWTP Oxygenation Trains project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to rehabilitate the structures of the aeration tanks and its mechanical and electrical systems.	Project is being procured as Design-Build along with CD 3.4. On November 4, 2022, the County notified EPA and FDEP of a Force Majeure Delay impacting CD Appendix D, CIP CD 3.3 Oxygenation Trains, and CD 3.4 Oxygen Production during the County's competitive procurement process. The two (2) responsive bidders elected to formally withdraw their bids during the final stages of contract negotiations. Procurement will continued.
3.4	Oxygen Production	The NDWWTP Oxygen Production project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation of the structure of the oxygen plant and its mechanical and electrical systems.	Project is being procured as Design-Build along with CD 3.3. On November 4, 2022, the County notified EPA and FDEP of a Force Majeure Delay impacting CD Appendix D, CIP CD 3.3 Oxygenation Trains, and CD 3.4 Oxygen Production during the County's competitive procurement process. The two (2) responsive bidders elected to formally withdraw their bids during the final stages of contract negotiations. Procurement will continued.
3.5	Secondary Clarifiers	The NDWWTP Secondary Clarifiers project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation of the structure of the secondary clarifiers and its mechanical and electrical systems. This project has been split into two child projects: Project 3.05(1) Replace mechanisms #1-10 and 3.5(2) Secondary Clarifiers Main Design Package	3.5(1) Construction of Secondary Clarifiers Replace Mechanisms No.1 - 10 was completed on March 30, 2017. 3.5(2) Construction continued.
3.6	Disinfection	The NDWWTP Disinfection project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the replacement of the chlorine gas storage, liquid chlorination and dosing system with bulk sodium hypochlorite storage and dosing system in the existing chlorine building.	Construction was completed on March 5, 2022.
3.7	Effluent Disposal	The NDWWTP Effluent Disposal project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the installation of standby pumps to ensure effluent disposal capacity and the structural rehabilitation of the ocean outfall pump station wet well. This project has been split into two separates child projects: the Deep Injection Well (DIW) Pump Station and the Ocean Outfall (OOF) Pump Station.	The Ocean Outfall Pump Station rehabilitation was completed in March 2015. Construction of DIW Pump Station was completed on June 29, 2018, ahead of the December 28, 2021 CD compliance date.

Table A-3.3 North District WWTP Capital Improvement Projects January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
3.8	Plant Wide Electrical	<p>The NDWWTP Plant Wide Electrical project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation and replacement of electrical controls and wiring as needed at the NDWWTP. This project schedule has been broken down into multiple child/sub projects to better reflect the way the work is being executed:</p> <p>3.8(1) NDWWTP General Electrical In House Construction Feeders 1 and 2 have been replaced.</p> <p>3.8(2) Electrical Feeders 3-6 Feeders 3-6 will be replaced in conjunction with Project 3.01.</p> <p>3.8(3) Electrical Feeders 7-8 Feeders 7 and 8 will be replaced along with Project 3.04.</p> <p>3.8(4) Electrical Feeders 9-14</p>	<p>Design, permitting, procurement, and construction continued.</p> <p>3.8(1) General Electrical In-house construction (Feeders 1-2) was completed on January 15, 2016.</p> <p>3.8(2) Electrical Feeders 3-6 (Project 3.1) was completed on December 6, 2017.</p> <p>3.8(3) Electrical Feeders 7-8 designed continued (scope considered under CD 3.3 and CD 3.4).</p> <p>3.8(4) Procurement completed, notice to proceed issued to Contractor on September 21, 2020. Construction completed.</p>
3.9	Flood Mitigation	<p>The NDWWTP Flood Mitigation project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to mitigate the flood potential in the Generator and Electrical Building at the NDWWTP.</p>	<p>This project was completed on June 24, 2016 ahead of the August 13, 2017 CD compliance date.</p>
3.10	Yard Piping Replacement	<p>The NDWWTP Yard Piping Replacement project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to replace the wastewater piping that interconnects unit processes throughout the plant.</p>	<p>Project was completed on May 24, 2016, ahead of the December 4, 2021, CD compliance date.</p>
3.11	SCADA RTU Upgrades	<p>The NDWWTP SCADA RTU Upgrades project is being performed pursuant to Paragraph 19(i) and Appendix D. The current radio communication system is obsolete, and it is difficult to procure parts. The purpose of the project is to upgrade the SCADA remote telemetry units to maintain operational sustainability.</p>	<p>Project was completed on November 26, 2014, ahead of the March 24, 2015 CD compliance date.</p>

Table A-4.1 Wastewater Collection and Transmission Lines January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
4.1	Collection System I/I Repairs	The Collection System I/I Repairs project is being performed in accordance with Paragraph 19(i) and Appendix D of the CD. The project targets defective gravity sewers with excessive inflow/infiltration. It involves rehabilitation of the Collection System, (i.e. dig & replace mainlines and laterals, manhole replacement, cured-in-place liners and sectional liners) and will be performed concurrently with other work.	Work on this project is ongoing.
4.2	Government Cut FM Phase 1 & 2	The Government Cut FM Phases 1 & 2 project was performed in accordance with Paragraph 19(i) and Appendix D. The purpose of this two phase project is to replace critically damaged sections of the 54-inch force main to avert catastrophic failures in Government Cut. This project involved the replacement of the 54-inch FM with a 60-inch FM from the water shaft in Government Cut to mainland Miami Beach.	Project was completed on the CD compliance date of September 30, 2013.
4.3	Government Cut FM Phase 3	The Government Cut FM Phase 3 project is being performed in accordance with Paragraph 19(i) and Appendix D. Phase 3 of this project involves the replacement of the 54-inch FM from the land shaft at Fisher Island to CDWWTP at Virginia Key.	Project was completed on November 23, 2016, ahead of the CD compliance date of April 8, 2017.
4.4	North Dade 72 inch PCCP FM Rehabilitation	This North Dade Force Main Rehabilitation project is being performed in accordance with Paragraph 19(i) and Appendix D. The project replaces a damaged section of 72-inch force main that has experienced catastrophic failure. The rehabilitation involves 3.5 miles of 72-inch PCCP FM located between NW 17 Avenue and NE 10 Avenue in North Dade.	Project was completed on May 5, 2016, ahead of the CD compliance date of March 5, 2018.
4.5	South Dade 54 inch PCCP FM Rehabilitation	This South Dade Force Main Rehabilitation project is being performed in accordance with Paragraph 19(i) and Appendix D. The project involves the rehabilitation of 2.5 miles of 54-inch PCCP FM from SW 112 Avenue and SW 280 Street to SW 107 Avenue and SW 248 Street in South Dade. It replaces sections of the 54-inch force main that has critically damaged pipe segments. This project has been split into two (2) separate child projects: one which includes the 2.5 miles of 54-inch pipe rehabilitation and another for required bypasses.	Project was completed on September 14, 2018, ahead of the CD compliance date of December 23, 2018.
4.6	Replacement of Tamiami Canal Aerial Crossing FMs at NW 37th Avenue	This Tamiami Force Main Replacement project is being performed in accordance with Paragraph 19(i) and Appendix D. This project replaces corroded twin 24-inch FM crossing the Tamiami Canal at NW 37 Avenue, just south of NW 21 Street in the Tamiami area. The twin 24-inch force mains have experienced failures and are in need of replacement.	Construction was completed on May 27, 2014, ahead of the CD compliance date of October 29, 2016.
4.7	Rehabilitation of 18 inch DIP FM in Miami Lakes	This Miami Lakes Force Main Replacement project is being replaced in accordance with Paragraph 19(i) and Appendix D. The purpose of this project is to replace severely corroded 18-inch pipe that has had multiple failures. It replaces one mile of 18-inch DIP FM located at NW 60 Avenue and NW 138 Street.	Construction was completed on December 7, 2015, ahead of the CD compliance date of April 9, 2017.
4.8	Rehabilitation of 54 inch PCCP FM in the City of Miami	This City of Miami Force Main Rehabilitation project is being performed pursuant to Paragraph 19(i) and Appendix D. A section of 54-inch force main in the City of Miami is deteriorated and has experienced failures. The project involves the rehabilitation of 2 miles of 54-inch PCCP FM by cured-in-place liner located on NW 2 Street between NW 67 Avenue and NW 37 Avenue in the City of Miami. Project 4.8(1) includes the two miles of PCCP pipe rehabilitation and Project 4.8(2) includes the remaining two miles of pipe rehabilitation or replacement.	4.8(1): Construction was completed on June 16, 2017. 4.8(2): Completed on August 29, 2018 (Non-Consent Decree).

Table A-4.1 Wastewater Collection and Transmission Lines January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
4.9	Replace Approximately 30 miles of AC FM Transmission System	This Force Main Transmission System Replacement project is being performed pursuant to Paragraph 19(i) and Appendix D. The purpose of this project is to replace asbestos cement force mains that have experienced failures and are difficult to locate in the field. This includes approximately 30 miles of AC FM transmission system.	See Table A-4.2. Project was substantially completed June 5, 2020. A Notification of Completion letter was submitted on October 7, 2020.
4.10	Opa-Locka Airport FM Replacement	The Opa-Locka Airport PCCP Force Main Replacement project is being performed pursuant to Paragraph 19(i) and Appendix D. This project involves the rehabilitation of 2.5 miles of 48-inch PCCP force main running along the Biscayne Canal between NW 57th Avenue & NW 32nd Avenue. The length has been determined to have approximately one quarter of its line segments distressed based on in-situ condition assessments. The project has been split into four child projects for different areas in the Opa-Locka Airport.	4.10(1) Construction was completed on October 27, 2017, ahead of the CD Compliance date of January 28, 2018. 4.10(2) Construction was completed on May 11, 2018. 4.10(3) Construction was completed on December 14, 2017. 4.10(4) Non-Consent Decree Project.

**Table A-4.2 Project 4.9 Replacement of Approximately 26 Miles AC FM Transmission System
January 1, 2023 through December 31, 2023**

Line Number	Diameter	From Location	To Location	Significant Activities / Key Accomplishments
1	12	SW 112 Ave. & SW 104 St.	SW 112 Ave. & SW 112 St.	This project was complete on June 5, 2020.
2	8	NE 14 Ave. & 191 St.	NE 14 Ave. & Miami Gardens Dr.	This project was completed on October 25, 2016.
3	6	PS 356	NW 53 Ct. & NW 195 Dr.	This project was completed on August 11, 2014.
4	8	NW 53 Ct. & NW 195 Dr.	NW 52 Ct. & NW 191 Dr.	This project was completed on August 11, 2014.
5	10	NW 52 Ct. & NW 191 St.	NW 52 Ct. & NW 188 Dr.	This project was completed on August 11, 2014.
6	6	PS 362	NW 52 Ct. & NW 190 Dr.	This project was completed on August 18, 2017.
7	10	NW 52 Ct. & NW 190 St.	NW 52 Ave. & NW 189 Ter.	This project was completed on August 18, 2017.
8	10	NW 52 Ct. & NW 188 St.	NW 52 Ave. & NW 183 St.	This project was completed on August 11, 2014.
9	8	PS 385	NW 29 Ct. & NW 199 St.	This project was completed on August 7, 2015.
10	12	NW 29 Ct. & NW 199 St.	NW 30 Pl. & NW 199 St.	This project was completed on August 7, 2015.
11	8	NW 29 Ct. & NW 199 St.	NW 28 Ave. & NW 199 St.	This project was completed on August 7, 2015.
12	6	PS 374	NW 28 Ave. & NW 199 St.	This project was completed on August 7, 2015.
13	12	NW 30 Pl. & NW 199 St.	NW 37 Ave. & NW 199 St.	This project was completed on August 7, 2015.
14	8	PS 368	NW 37 Ave. & NW 194 Ter.	This project was completed on June 3, 2015.
15	4	PS 375	NW 29 Pl. and NW 191 St.	This project was completed on June 3, 2015.
16	10	PS 427	NW 29 Pl. and NW 191 St.	This project was completed on June 3, 2015.
17	10	NW 29 Pl. and NW 191 St.	NW 32 Ave. & NW 191 St.	This project was completed on June 3, 2015.
18	6	PS 376	NW 32 Ave. & NW 191 St.	This project was completed on June 3, 2015.
19	6	PS 377	NW 36 Ave. & NW 183 St.	This project was completed on June 3, 2015.
20	8	PS 366	NW 42 Pl. & NW 199 Ter.	This project was completed on March 6, 2017.
21	10	NW 42 Pl. & NW 199 Ter.	NW 39 Ct. & NW 199 St.	This project was completed on March 6, 2017.
22	6	PS 358	PS 352	This project was completed on March 1, 2017.
23	8	PS 1022	PS 1072	This project was completed on June 15, 2018.
24	8	PS 353	NW 48 Ct. & NW 178 Ter.	This project was completed October 27, 2016.
25	10	NW 52 Ave. & NW 173 Dr.	NW 52 Ave. & NW 178 Ter.	This project was completed on April 3, 2017.
26	6	PS 354	NW 52 Ave. & NW 173 Dr.	This project was completed on April 3, 2017.
27	4	Pvt. PS @ SW 149 Ter.	MH 14 @ PS 719	This project was complete on June 5, 2020.
28	8	PS 786	MH 5 @ PS 785	This project was complete on June 5, 2020.
29	12	PS 811	SW 107 Ave. & SW 76 St.	This project was completed on September 12, 2019.
30	12	PS 811	SW 102 Ave. & SW 81 St.	This project was completed on September 12, 2019.
31	10	PS 812	SW 102 Ave. & SW 84 St.	This project was completed on September 12, 2019.
32	12	SW 107 Ave. & SW 104 St.	SW 107 Ave. & Kendale Blvd.	This project was completed on October 13, 2017.
33	4	Pvt. PS @ 114 Ave. & SW 169 St.	MH 59 @ SW 103 Ave.	This project was completed on August 12, 2016.
34	10	PS 709	Homestead Ave. & Kumquat St.	This project was completed on April 21, 2020.
35	6	SW 110 Ave. & Banyan St.	SW 95 Ave. & SW Banyan St.	This project was completed on April 21, 2020.
36	4	PS 721	US1 & Banyan St.	This project was completed on April 21, 2020.

**Table A-4.2 Project 4.9 Replacement of Approximately 26 Miles AC FM Transmission System
January 1, 2023 through December 31, 2023**

Line Number	Diameter	From Location	To Location	Significant Activities / Key Accomplishments
37	4	PS 749	PS 731	This project was completed on April 21, 2020.
38	4	PS 747	US1 & East Indigo St.	This project was completed on April 21, 2020.
39	10	SW 102 Ave. & SW 176 St.	Homestead Ave. & West Jessamine	This project was completed on April 21, 2020.
40	8	PS 745	SW 102 Ave. & SW 175 St.	This project was completed on April 21, 2020.
41	4	PS 731	SW Duval Ave. & West Indigo St.	This project was completed on April 21, 2020.
42	10	SW 102 Ave. & West Jessamine	US1 & SW 184 St.	This project was completed on April 21, 2020.
43	12	Homestead Ave. & 180 St.	Railroad St. & SW 184 St.	This project was completed on April 21, 2020.
44	8	PS 810	SW 118 Pl. & SW 72 St.	This project was complete on June 5, 2020.
45	12	PS 793	SW 118 Pl. & SW 72 St.	This project was complete on June 5, 2020.
46	6	PS 724	SW 106 Ave. & SW 155 St.	This project was complete on April 21, 2020.
47	8	PS 869	SW 122 Ave. & SW 88 St.	This project was completed on February 1, 2017.
48	10	PS 1017	SW 123 Pl. & SW 268 St.	This project was completed on September 12, 2019.
49	10	PS 1029	SW 132 Ave. & 268 St.	This project was completed on September 12, 2019.
50	8	SW 137 Ave. & SW 268 St.	SW 128 Ave. & 268 St.	This project was completed on September 12, 2019.
51	10	PS 1028	SW 137 Ave. & 288 St.	This project was completed on September 12, 2019.
52	10	PS 1027	SW 132 Ave. & 280 St.	This project was completed on September 12, 2019.
53	8	PS 1018	MH 44A @ SW 132 Ave.	This project was completed on September 12, 2019.
54	12	SW 137 Ave. & SW 72 St.	SW 142 Ave. & SW 72 St.	This project was complete on June 5, 2020.
55	12	SW 142 Ave. & SW 72 St.	SW 147 Ave. & SW 72 St.	This project was complete on June 5, 2020.
56	8	PS 864	SW 147 Ave. & SW 72 St.	This project was complete on June 5, 2020.
57	8	SW 142 Ave. & Kendale Lakes Blvd.	SW 140 Ave. & Kendale Lakes Blvd.	This project was complete on June 5, 2020.
58	10	SW 140 Ave. & Kendale Lakes Blvd.	SW 137 Ave. & Kendale Lakes Blvd.	This project was complete on June 5, 2020.
59	12	SW 137 Ave. & Kendale Lakes Blvd.	SW 137 Ave. & SW 81 St.	This project was complete on June 5, 2020.
60	8	PS 1013	PS 1012	This project was completed on August 21, 2019.
61	10	PS 1012	SW 144 Ave. & SW 280 St.	This project was completed on August 21, 2019.
62	8	PS 1011	SW 144 Ct. & SW 280 St.	This project was completed on August 21, 2019.
63	10	SW 147 Ave. & SW 288 St.	SW 134 Pl. & SW 288 St.	This project was completed on September 12, 2019.
64	6	PS 1009	SW 147 Ave. & SW 296 St.	This project was complete on June 5, 2020.
65	6	PS 1006	PS 1005	This project was complete on December 12, 2019.
66	8	PS 1002	SW 152 & SW 304 St.	This project was complete on June 5, 2020.

Table A-5 Sewer Pump Station Systems January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
5.1	Upgrade of PS No. 0418	The Upgrade of PS No. 0418 project is being performed pursuant to Paragraph 19(i) and Appendix D. The station has reached the end of its useful life, and a booster station is needed to relieve pressures in the Doral area. The purpose of this project is to convert PS No. 0418 into a booster type station.	Construction was completed on November 8, 2019.
5.2	Upgrade of PS No. 0691	The Upgrade of PS No. 0691 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life and capacity increase is required to handle increased Homestead flows. On April 14, 2016, this scope was modified and approved by EPA/FDEP. Specifically, PS No. 0691 serves the City of Homestead and will be replaced by a new pump station currently being built by Homestead. As this new Homestead pump station will replace the current PS No. 0691, that pump station (PS No. 0691) will be decommissioned once the new Homestead pump station (PS No. 1) is online.	PS No. 0691 was decommissioned on November 8, 2019.
5.3	Upgrade of PS No. 0692	The Upgrade of PS No. 0692 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life and capacity increase is required to handle increased Homestead flows. This project involves the replacement of pumping and electrical equipment in PS No. 0692.	Construction completed November 17, 2020.
5.4	Replacement of Switchgear PS No. 0414	The Replacement of Switchgear PS No. 0414 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life. This project involves the replacement of electrical switchgear in PS No. 0414. The purpose of this project is to convert PS 0414 into a booster type station and rehabilitate and replace the entire facility equipment (pumps, motors, electrical equipment, HVAC, valves, and piping).	Construction was completed on June 11, 2019, ahead of the CD compliance date of June 15, 2019.
5.5	Replacement of Switchgear and Rehabilitation of Wet Well PS No. 0415	The Replacement of Switchgear and Rehabilitation of Wet Well PS No. 0415 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life, and the wet well structure is badly deteriorated due to H ₂ S. This project involves the rehabilitation and replacement of the entire facility equipment (pumps, motors, electrical equipment, HVAC, odor control, valves, piping and wet well) in PS 0415.	Construction was completed on November 13, 2019.
5.6	Replacement of Switchgear PS No. 0416	The Replacement of Switchgear PS No. 0416 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life. This project involves the rehabilitation and replacement of the entire facility equipment (pumps, motors, electrical equipment, HVAC, valves, and piping) in PS No. 0416.	Construction was completed on June 11, 2019, ahead of the CD compliance date of June 13, 2019.
5.7	Replacement of Switchgear and Rehabilitation of Wet Well PS No. 0417	The Replacement of Switchgear and Rehabilitation of Wet Well PS No. 0417 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life, and the wet well structure is badly deteriorated due to H ₂ S. This project involves the rehabilitation and replacement of the entire facility equipment (pumps, motors, electrical equipment, HVAC, odor control, valves, piping and wet well) in PS 0417.	Construction was completed July 1, 2020.
5.8	Replacement of Electrical and Mechanical Equipment PS No 0107	The Replacement of Electrical and Mechanical Equipment PS No. 0107 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life, and parts are not readily available for the load cell type controllers. This project involves the replacement of pumping and electrical equipment of PS No. 0107.	Construction was completed on February 3, 2018, ahead of CD compliance date of January 27, 2019.

Table A-5 Sewer Pump Station Systems January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
5.9	Replacement of Pumping and Electrical Equipment PS No. 0301	The Replacement of Pumping and Electrical Equipment PS No. 0301 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment is beyond its useful life due to the saltwater environment. This project involves the replacement of pumping and electrical equipment of PS No. 0301 to include a generator. This project includes the construction of a new submersible pump station.	Construction was completed on January 25, 2022.
5.10	Upgrade of PS No. 0488	The Upgrade of PS No. 0488 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment is beyond its useful life. This project involves the conversion of the PS to a submersible type station.	This project was completed on December 8, 2016, ahead of the CD compliance date May 9, 2018.
5.11	Installation of 60 inch FM from Kendall Dr. to PS No. 0536	On August 12, 2015 WASD submitted a Request for Non-Material Change for Appendix D CIP 5.11. WASD proposed the cost effective alternative of adding a 48-inch connection to the suction side of PS 0536 that will provide similar benefits to those of the 60-inch FM for CD Appendix D CIP 5.11. WASD received EPA and FDEP approval on October 28, 2015.	Construction was completed on February 13, 2019, ahead of CD compliance date of May 18, 2019.
5.12	Replacement of Switchgear PS No. 0187	The Replacement of Switchgear PS No. 0187 project is being performed pursuant to Paragraph 19(i) and Appendix D. The existing equipment of the PS is beyond its useful life, and parts are not readily available. This project involves the replacement of the Anvic Drive with a VFD.	Construction was completed on March 25, 2019, ahead of the CD compliance date of March 26, 2019.
5.13	Refurbish Emergency Generators and Controls at Regional PSs	The Refurbish Emergency Generators and Controls at regional PSs project is being performed pursuant to Paragraph 19(i) and Appendix D. The emergency backup generators are unreliable due to the age of the controllers and the condition of the wiring on the engines. The purpose of this project is to refurbish emergency generators and controls at regional PSs.	This project was completed on February 4, 2016, ahead of the CD compliance date July 20, 2016.
5.14	Upgrade of PSs Nos. 0086 and 0492	The Upgrade of Pump Stations No. 0086 and 0492 project was performed and completed pursuant to Paragraph 19(i) and Appendix D. The project was designed to increase reliability and extend the service life of the pump station. The pump stations also exceeded the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours. For this project, Pump Station No. 0086 was converted to a submersible type pump station with an existing wet well and the electrical controls and instrumentation were upgraded. The electrical controls and instrumentation for Pump Station No. 0492 were upgraded. It was also rehabilitated to a new submersible type pump station.	Construction was completed on July 15, 2013, ahead of the CD compliance date of December 31, 2013.
5.15	Upgrade of PSs Nos. 0065, 0201, 0374, 0607	The Upgrade of PSs No. 0065, 0201, 0334, 0374, 0607 project is being performed pursuant to Paragraph 19(i) and Appendix D. The pump stations exceed the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours. The PS No. 0065 is being upgraded to include new submersible pumps in the existing dry well, installation of larger suction and discharge piping, and an electrical upgrade. The PS No. 0201 is being upgraded to include new submersible pumps, installation of a new valve box, an electrical upgrade and 48 I/I repairs for a flow of 176 gpm. The PS No. 0334 project involves the conversion to a new submersible type pump station, an electrical upgrade and the installation of 2,200 L.F. of new 8-inch FM. The PS No. 0374 is being upgraded to include new submersible pumps, installation of a new valve box, an electrical upgrade and the installation of 320 L.F. of new 8-inch FM. The PS No. 0607 project involves the conversion to a new submersible type pump station and an electrical upgrade.	This project was completed on December 30, 2015, ahead of the CD compliance date December 31, 2015.

Table A-5 Sewer Pump Station Systems January 1, 2023 through December 31, 2023

Project Number	Project Name	Project Description	Significant Activities / Key Accomplishments
5.16	Upgrade of PSs Nos.0198, 0437, 0466, 0680	The Upgrade of PSs No. 0198, 0437, 0466, 0680 project is being performed pursuant to Paragraph 19(i) and Appendix D. The pump stations exceed the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours. Project has been split into four child projects, one for each PS. 5.16(1) PS No. 0198 is being upgraded to include new submersible pumps in the existing dry well, an electrical upgrade and flow isolation and I/I repairs, if necessary. 5.16(2) PS No. 0437 and 5.16(3) PS No. 0466 are being upgraded to include new submersible pumps, installation of a new valve box, and an electrical upgrade. 5.16(4) PS No. 0680 is being upgraded to include new submersible pumps, new valves above ground and an electrical upgrade.	This project was completed on January 24, 2018. 5.16(1) PS No. 0198: Construction was completed in January 24, 2018. 5.16(2) PS No. 0437: Construction was completed on December 30, 2016. 5.16(3) PS No. 0466: Construction was completed on October 21, 2016. 5.16(4) PS No. 0680: Construction was completed on December 1, 2016.
5.17	Upgrade of PSs Nos. 0037, 0351, 0370, 0403	The Upgrade of PSs No. 0037, 0351, 0370, 0403 project is being performed pursuant to Paragraph 19(i) and Appendix D. The pump stations exceed the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours. Project has been split into four child projects, one for each PS. 5.17(1) PS No. 0037 project involves the conversion to a new submersible type pump station and an electrical upgrade. 5.17(2) PS No. 0351 is being upgraded to include new submersible pumps, installation of a new valve box, an electrical upgrade and the replacement of 360 L.F. of 4-inch with 8-inch FM. 5.17(3) PS No. 0370 project involves the conversion to a new submersible type pump station, an electrical upgrade and the installation of 760 L.F. of new 8-inch FM. 5.17(4) PS No. 0403 project involves the conversion to a new submersible type pump station, an electrical upgrade and the installation of an on-site generator.	This project was completed on April 30, 2018 ahead of CD compliance date of November 20, 2018. 5.17(1) PS No. 0037: Construction was completed on November 14, 2017. 5.17(2) PS No. 0351: Construction was completed on December 1, 2017. 5.17(3) PS No. 0370: Construction was completed on January 11, 2018. 5.17(4) PS No. 0403: Construction was completed on April 30, 2018.
5.18	Upgrade of PSs Nos. 0441, 0491, 0710, 0827, 0852, 1236	The Upgrade of PSs No. 0441, 0491, 0710, 0827, 0852, 1236 project is being performed pursuant to Paragraph 19(i) and Appendix D. The pump stations exceed the Adequate Transmission Capacity Criteria with a NAPOT of greater than 10 hours. Project has been split into six child projects, one for each PS. 5.18(1) PS No. 0441 project involves the conversion to a new submersible type pump station and an electrical upgrade. 5.18(2) PS No. 0491 is undergoing flow isolation and I/I repairs, if necessary. 5.18(3) PS No. 710 project involves the conversion to a new submersible type pump station, an electrical upgrade and the installation of 1,800 L.F. of new 8-inch FM. 5.18(4) PS No. 0827 is being upgraded to include larger submersible pumps, installation of a new valve vault, an electrical upgrade and the replacement of 1,600 L.F. of 4-inch FM with 8-inch FM. 5.18(5) PS No. 0852 project involves the conversion to a new submersible type pump station and an electrical upgrade. 5.18(6) PS No. 1236 is undergoing 300 I/I repairs to achieve a flow of 130 gpm.	This project was completed on November 18, 2019, ahead of the CD compliance date of December 13, 2019. 5.18(1) PS No. 0441: Construction was completed August 14, 2019. 5.18(2) PS No. 0491: Completed on November 15, 2019. 5.18(3) PS No. 0710: Construction was completed on August 14, 2019. 5.18(4) PS No.0827: Construction was completed on November 18, 2019. 5.18(5) PS No.0852: Construction was completed on July 26, 2019. 5.18(6) PS No.1236: Completed on May 1, 2017.
5.19	SCADA RTU Upgrades	The SCADA RTU Upgrades project is being performed pursuant to Paragraph 19(i) and Appendix D. The current radio communication system is obsolete, and it is difficult to procure parts. The purpose of the project is to upgrade the SCADA remote telemetry units for 635 pump stations to maintain operational sustainability.	Construction was completed on November 23, 2015, ahead of the CD compliance date of March 18, 2016.

Appendix B
SSO Volume Analysis Tables

Table B-1: SSO Volume Analysis

CAUSE		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1. Building Backups (Laterals)		- gal.	612 gal.	58 gal.	101 gal.	82 gal.	187 gal.	37 gal.	176 gal.	80 gal.	145 gal.	35 gal.
Blockage	(i) PM Activity*	* gal.	76 gal.	43 gal.	88 gal.	10 gal.	10 gal.	17 gal.	- gal.	48 gal.	gal.	gal.
	(ii) Roots	* gal.	5 gal.	- gal.	- gal.	20 gal.	7 gal.	- gal.	5 gal.	gal.	gal.	gal.
	(iii) Grease	* gal.	455 gal.	9 gal.	- gal.	35 gal.	20 gal.	5 gal.	103 gal.	32 gal.	145 gal.	7 gal.
	(iv) Debris	* gal.	2 gal.	- gal.	- gal.	1 gal.	gal.	15 gal.	2 gal.	gal.	gal.	28 gal.
Break	(v) Contractor Involved	* gal.	56 gal.	1 gal.	- gal.	1 gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
	(vi) Other	* gal.	18 gal.	5 gal.	13 gal.	15 gal.	150 gal.	- gal.	- gal.	gal.	gal.	gal.
Other	(vii) Flow conditions			- gal.	- gal.	- gal.	- gal.	- gal.	6 gal.	gal.	gal.	gal.
	(viii) Other			- gal.	- gal.	- gal.	- gal.	- gal.	60 gal.	gal.	gal.	- gal.
2. Air Release Valves		145,735 gal.	31,685 gal.	66,977 gal.	88,159 gal.	958,191 gal.	27,131 gal.	49,491 gal.	20,894 gal.	12,520 gal.	43,996 gal.	24,799 gal.
(a) Automatic		58,557 gal.	12,485 gal.	63,507 gal.	34,657 gal.	876,830 gal.	9,286 gal.	11,930 gal.	4,660 gal.	12,520 gal.	15,522 gal.	17,787 gal.
Break/Mal-functioning	(i) Malfunctioning/Other	7,214 gal.	2 gal.	3,055 gal.	3,220 gal.	779,477 gal.	5,921 gal.	4,241 gal.	25 gal.	125 gal.	815 gal.	262 gal.
	(ii) Riser/Nipple	35,023 gal.	2,232 gal.	- gal.	12,875 gal.	16,938 gal.	771 gal.	6,311 gal.	330 gal.	gal.	4,580 gal.	8,953 gal.
	(iii) Valve	16,065 gal.	90 gal.	- gal.	- gal.	gal.	50 gal.	- gal.	740 gal.	gal.	gal.	gal.
	(iv) Contractor Involved	- gal.	9,930 gal.	60,140 gal.	6,015 gal.	27,485 gal.	2,294 gal.	- gal.	320 gal.	11,960 gal.	563 gal.	6,864 gal.
	(v) Vandalism	- gal.	- gal.	- gal.	12,200 gal.	52,930 gal.	250 gal.	1,353 gal.	1,540 gal.	gal.	9,289 gal.	gal.
Blockage	(iv) Grease Blockage	- gal.	5 gal.	36 gal.	220 gal.	gal.	gal.	- gal.	80 gal.	gal.	gal.	gal.
	(v) Debris Blockage	255 gal.	226 gal.	276 gal.	127 gal.	gal.	gal.	390 gal.	1,625 gal.	435 gal.	275 gal.	1,708 gal.
(b) Manual		87,178 gal.	19,200 gal.	3,470 gal.	53,502 gal.	81,361 gal.	17,845 gal.	37,561 gal.	16,234 gal.	gal.	28,474 gal.	7,012 gal.
Broken	(i) Riser/Nipple	63,098 gal.	5,800 gal.	2,710 gal.	33,982 gal.	53,677 gal.	2,100 gal.	- gal.	16,154 gal.	gal.	28,474 gal.	7,012 gal.
	(ii) Valve	230 gal.	2,600 gal.	- gal.	- gal.	85 gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
	(iii) Contractor Involved	23,850 gal.	10,800 gal.	750 gal.	19,470 gal.	27,599 gal.	15,745 gal.	- gal.	50 gal.	gal.	gal.	gal.
	(iv) Vandalism	- gal.	- gal.	- gal.	- gal.	gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
Blockage	(v) Grease Blockage	- gal.	- gal.	- gal.	- gal.	gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
	(vi) Debris Blockage	- gal.	- gal.	10 gal.	50 gal.	gal.	gal.	- gal.	30 gal.	gal.	gal.	gal.
3. Pump Station		25,914 gal.	542,178 gal.	2,000,468 gal.	86,065 gal.	35,027 gal.	8,142 gal.	803,996 gal.	18,740 gal.	75 gal.	1,785 gal.	325,416 gal.
Other/Broken	(i) FPL Service Outage	12,130 gal.	- gal.	2,000,000 gal.	- gal.	1,820 gal.	gal.	180 gal.	gal.	gal.	gal.	670 gal.
	(ii) Pump	10,484 gal.	100 gal.	- gal.	- gal.	50 gal.	5,160 gal.	8,200 gal.	gal.	gal.	500 gal.	87,000 gal.
	(iii) Pipe/Pump-out	1,950 gal.	200 gal.	468 gal.	86,065 gal.	30,107 gal.	1,800 gal.	200 gal.	gal.	gal.	375 gal.	- gal.
	(iv) Electrical	300 gal.	540,500 gal.	- gal.	- gal.	gal.	gal.	200 gal.	6,440 gal.	gal.	gal.	100 gal.
	(v) Level/Bubbler	- gal.	- gal.	- gal.	- gal.	gal.	gal.	50 gal.	gal.	gal.	60 gal.	- gal.
	(vi) Valve	- gal.	628 gal.	- gal.	- gal.	500 gal.	gal.	26,526 gal.	gal.	gal.	200 gal.	236,000 gal.
	(vii) Bypass Operation	1,050 gal.	750 gal.	- gal.	- gal.	50 gal.	50 gal.	200 gal.	12,080 gal.	gal.	gal.	gal.
	(viii) Contractor Involved	- gal.	- gal.	- gal.	- gal.	gal.	1,082 gal.	45,515 gal.	gal.	gal.	gal.	gal.
	(ix) SCADA	- gal.	- gal.	- gal.	- gal.	gal.	gal.	- gal.	gal.	gal.	gal.	400 gal.
	(x) Other	- gal.	- gal.	- gal.	- gal.	2,500 gal.	50 gal.	722,925 gal.	220 gal.	75 gal.	650 gal.	1,246 gal.
4. Gravity Main		4,072 gal.	5,447 gal.	1,629 gal.	1,008 gal.	5,763 gal.	6,475 gal.	2,605 gal.	557,115 gal.	2,806 gal.	382,063 gal.	406,696 gal.
Blockage	(i) Grease	1,850 gal.	1,682 gal.	1,075 gal.	908 gal.	1,816 gal.	4,795 gal.	1,240 gal.	20,785 gal.	1,545 gal.	1,918 gal.	5,010 gal.
	(ii) Debris	191 gal.	180 gal.	134 gal.	5 gal.	1,117 gal.	5 gal.	475 gal.	1,485 gal.	368 gal.	130 gal.	110 gal.
	(iii) Roots	- gal.	2,400 gal.	- gal.	- gal.	gal.	gal.	- gal.	gal.	gal.	gal.	40 gal.
	(iv) Other	2,025 gal.	900 gal.	110 gal.	60 gal.	2,580 gal.	25 gal.	350 gal.	534,845 gal.	570 gal.	379,850 gal.	401,536 gal.
Break	(iv) Contractor Involved	6 gal.	285 gal.	260 gal.	35 gal.	250 gal.	1,650 gal.	540 gal.	- gal.	gal.	145 gal.	gal.
	(v) Other	- gal.	- gal.	50 gal.	- gal.	gal.	gal.	gal.	- gal.	323 gal.	20 gal.	gal.

Table B-1: SSO Volume Analysis

CAUSE		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5. Force Main		1,650,264 gal.	2,101,605 gal.	651,001 gal.	1,024,873 gal.	4,275,958 gal.	1,113,796 gal.	4,154,260 gal.	2,864,403 gal.	893,572 gal.	189,867 gal.	1,859,753 gal.
Break	(i) Contractor Involved	595,018 gal.	995,860 gal.	509,115 gal.	556,888 gal.	3,239,984 gal.	700,349 gal.	993,791 gal.	351,318 gal.	472,452 gal.	140,207 gal.	1,167,407 gal.
	(ii) Vandalism	- gal.	- gal.	5,800 gal.	50 gal.	gal.	gal.	- gal.	- gal.	gal.	890 gal.	735 gal.
	(iii) Corrosion	773,586 gal.	738,446 gal.	84,756 gal.	363,480 gal.	462,842 gal.	41,508 gal.	2,133,666 gal.	1,040,775 gal.	341,390 gal.	12,940 gal.	17,201 gal.
	(iv) Bedding/Settlement	280,850 gal.	39,139 gal.	51,130 gal.	21,350 gal.	120,299 gal.	127,212 gal.	193,265 gal.	122,533 gal.	23,333 gal.	8,834 gal.	218,994 gal.
	(v) Other	810 gal.	328,160 gal.	200 gal.	83,105 gal.	452,833 gal.	244,727 gal.	833,538 gal.	1,349,777 gal.	56,397 gal.	26,996 gal.	455,416 gal.
6. Capacity Rel. - Rain/Sur/Press		1,000 gal.	- gal.	500 gal.	- gal.	9,815 gal.	13,034 gal.	- gal.	gal.	gal.	gal.	gal.
(i) No Improvement Ness.		1,000 gal.	- gal.	500 gal.	- gal.	3,860 gal.	11,960 gal.	- gal.	gal.	gal.	gal.	gal.
(ii) Improvement Rec.		- gal.	- gal.	- gal.	- gal.	5,955 gal.	1,074 gal.	- gal.	gal.	gal.	gal.	gal.
SSOs (Excluding BBUs)		1,826,985 gal.	2,680,915 gal.	2,720,575 gal.	1,200,105 gal.	5,284,754 gal.	1,168,578 gal.	5,010,352 gal.	3,461,152 gal.	908,973 gal.	617,711 gal.	2,616,664 gal.
Total		1,826,985 gal.	2,681,527 gal.	2,720,633 gal.	1,200,206 gal.	5,284,836 gal.	1,168,765 gal.	5,010,389 gal.	3,461,328 gal.	909,053 gal.	617,856 gal.	2,616,699 gal.

(1,520,427)

(1,481,321)

Table B-1: SSO Volume Analysis

CAUSE		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1. Building Backups (Laterals)		- gal.	612 gal.	58 gal.	101 gal.	82 gal.	187 gal.	37 gal.	176 gal.	80 gal.	145 gal.	35 gal.
Blockage	(i) PM Activity*	* gal.	76 gal.	43 gal.	88 gal.	10 gal.	10 gal.	17 gal.	- gal.	48 gal.	gal.	gal.
	(ii) Roots	* gal.	5 gal.	- gal.	- gal.	20 gal.	7 gal.	- gal.	5 gal.	gal.	gal.	gal.
	(iii) Grease	* gal.	455 gal.	9 gal.	- gal.	35 gal.	20 gal.	5 gal.	103 gal.	32 gal.	145 gal.	7 gal.
	(iv) Debris	* gal.	2 gal.	- gal.	- gal.	1 gal.	gal.	15 gal.	2 gal.	gal.	gal.	28 gal.
Break	(v) Contractor Involved	* gal.	56 gal.	1 gal.	- gal.	1 gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
	(vi) Other	* gal.	18 gal.	5 gal.	13 gal.	15 gal.	150 gal.	- gal.	- gal.	gal.	gal.	gal.
Other	(vii) Flow conditions			- gal.	- gal.	- gal.	- gal.	- gal.	6 gal.	gal.	gal.	gal.
	(viii) Other			- gal.	- gal.	- gal.	- gal.	- gal.	60 gal.	gal.	gal.	- gal.
2. Air Release Valves		145,735 gal.	31,685 gal.	66,977 gal.	88,159 gal.	958,191 gal.	27,131 gal.	49,491 gal.	20,894 gal.	12,520 gal.	43,996 gal.	24,799 gal.
(a) Automatic		58,557 gal.	12,485 gal.	63,507 gal.	34,657 gal.	876,830 gal.	9,286 gal.	11,930 gal.	4,660 gal.	12,520 gal.	15,522 gal.	17,787 gal.
Break/Mal-functioning	(i) Malfunctioning/Other	7,214 gal.	2 gal.	3,055 gal.	3,220 gal.	779,477 gal.	5,921 gal.	4,241 gal.	25 gal.	125 gal.	815 gal.	262 gal.
	(ii) Riser/Nipple	35,023 gal.	2,232 gal.	- gal.	12,875 gal.	16,938 gal.	771 gal.	6,311 gal.	330 gal.	gal.	4,580 gal.	8,953 gal.
	(iii) Valve	16,065 gal.	90 gal.	- gal.	- gal.	gal.	50 gal.	- gal.	740 gal.	gal.	gal.	gal.
	(iv) Contractor Involved	- gal.	9,930 gal.	60,140 gal.	6,015 gal.	27,485 gal.	2,294 gal.	- gal.	320 gal.	11,960 gal.	563 gal.	6,864 gal.
	(v) Vandalism	- gal.	- gal.	- gal.	12,200 gal.	52,930 gal.	250 gal.	1,353 gal.	1,540 gal.	gal.	9,289 gal.	gal.
Blockage	(iv) Grease Blockage	- gal.	5 gal.	36 gal.	220 gal.	gal.	gal.	- gal.	80 gal.	gal.	gal.	gal.
	(v) Debris Blockage	255 gal.	226 gal.	276 gal.	127 gal.	gal.	gal.	390 gal.	1,625 gal.	435 gal.	275 gal.	1,708 gal.
(b) Manual		87,178 gal.	19,200 gal.	3,470 gal.	53,502 gal.	81,361 gal.	17,845 gal.	37,561 gal.	16,234 gal.	gal.	28,474 gal.	7,012 gal.
Broken	(i) Riser/Nipple	63,098 gal.	5,800 gal.	2,710 gal.	33,982 gal.	53,677 gal.	2,100 gal.	- gal.	16,154 gal.	gal.	28,474 gal.	7,012 gal.
	(ii) Valve	230 gal.	2,600 gal.	- gal.	- gal.	85 gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
	(iii) Contractor Involved	23,850 gal.	10,800 gal.	750 gal.	19,470 gal.	27,599 gal.	15,745 gal.	- gal.	50 gal.	gal.	gal.	gal.
	(iv) Vandalism	- gal.	- gal.	- gal.	- gal.	gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
Blockage	(v) Grease Blockage	- gal.	- gal.	- gal.	- gal.	gal.	gal.	- gal.	- gal.	gal.	gal.	gal.
	(vi) Debris Blockage	- gal.	- gal.	10 gal.	50 gal.	gal.	gal.	- gal.	30 gal.	gal.	gal.	gal.
3. Pump Station		25,914 gal.	542,178 gal.	2,000,468 gal.	86,065 gal.	35,027 gal.	8,142 gal.	803,996 gal.	18,740 gal.	75 gal.	1,785 gal.	325,416 gal.
Other/Broken	(i) FPL Service Outage	12,130 gal.	- gal.	2,000,000 gal.	- gal.	1,820 gal.	gal.	180 gal.	gal.	gal.	gal.	670 gal.
	(ii) Pump	10,484 gal.	100 gal.	- gal.	- gal.	50 gal.	5,160 gal.	8,200 gal.	gal.	gal.	500 gal.	87,000 gal.
	(iii) Pipe/Pump-out	1,950 gal.	200 gal.	468 gal.	86,065 gal.	30,107 gal.	1,800 gal.	200 gal.	gal.	gal.	375 gal.	- gal.
	(iv) Electrical	300 gal.	540,500 gal.	- gal.	- gal.	gal.	gal.	200 gal.	6,440 gal.	gal.	gal.	100 gal.
	(v) Level/Bubbler	- gal.	- gal.	- gal.	- gal.	gal.	gal.	50 gal.	gal.	gal.	60 gal.	- gal.
	(vi) Valve	- gal.	628 gal.	- gal.	- gal.	500 gal.	gal.	26,526 gal.	gal.	gal.	200 gal.	236,000 gal.
	(vii) Bypass Operation	1,050 gal.	750 gal.	- gal.	- gal.	50 gal.	50 gal.	200 gal.	12,080 gal.	gal.	gal.	gal.
	(viii) Contractor Involved	- gal.	- gal.	- gal.	- gal.	gal.	1,082 gal.	45,515 gal.	gal.	gal.	gal.	gal.
	(ix) SCADA	- gal.	- gal.	- gal.	- gal.	gal.	gal.	- gal.	gal.	gal.	gal.	400 gal.
	(x) Other	- gal.	- gal.	- gal.	- gal.	2,500 gal.	50 gal.	722,925 gal.	220 gal.	75 gal.	650 gal.	1,246 gal.
4. Gravity Main		4,072 gal.	5,447 gal.	1,629 gal.	1,008 gal.	5,763 gal.	6,475 gal.	2,605 gal.	557,115 gal.	2,806 gal.	382,063 gal.	406,696 gal.
Blockage	(i) Grease	1,850 gal.	1,682 gal.	1,075 gal.	908 gal.	1,816 gal.	4,795 gal.	1,240 gal.	20,785 gal.	1,545 gal.	1,918 gal.	5,010 gal.
	(ii) Debris	191 gal.	180 gal.	134 gal.	5 gal.	1,117 gal.	5 gal.	475 gal.	1,485 gal.	368 gal.	130 gal.	110 gal.
	(iii) Roots	- gal.	2,400 gal.	- gal.	- gal.	gal.	gal.	- gal.	gal.	gal.	gal.	40 gal.
	(iv) Other	2,025 gal.	900 gal.	110 gal.	60 gal.	2,580 gal.	25 gal.	350 gal.	534,845 gal.	570 gal.	379,850 gal.	401,536 gal.
Break	(iv) Contractor Involved	6 gal.	285 gal.	260 gal.	35 gal.	250 gal.	1,650 gal.	540 gal.	- gal.	gal.	145 gal.	gal.
	(v) Other	- gal.	- gal.	50 gal.	- gal.	gal.	gal.	gal.	- gal.	323 gal.	20 gal.	gal.

Table B-1: SSO Volume Analysis

CAUSE		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
5. Force Main		1,650,264 gal.	2,101,605 gal.	651,001 gal.	1,024,873 gal.	4,275,958 gal.	1,113,796 gal.	4,154,260 gal.	2,864,403 gal.	893,572 gal.	189,867 gal.	1,859,753 gal.
Break	(i) Contractor Involved	595,018 gal.	995,860 gal.	509,115 gal.	556,888 gal.	3,239,984 gal.	700,349 gal.	993,791 gal.	351,318 gal.	472,452 gal.	140,207 gal.	1,167,407 gal.
	(ii) Vandalism	- gal.	- gal.	5,800 gal.	50 gal.	gal.	gal.	- gal.	- gal.	gal.	890 gal.	735 gal.
	(iii) Corrosion	773,586 gal.	738,446 gal.	84,756 gal.	363,480 gal.	462,842 gal.	41,508 gal.	2,133,666 gal.	1,040,775 gal.	341,390 gal.	12,940 gal.	17,201 gal.
	(iv) Bedding/Settlement	280,850 gal.	39,139 gal.	51,130 gal.	21,350 gal.	120,299 gal.	127,212 gal.	193,265 gal.	122,533 gal.	23,333 gal.	8,834 gal.	218,994 gal.
	(v) Other	810 gal.	328,160 gal.	200 gal.	83,105 gal.	452,833 gal.	244,727 gal.	833,538 gal.	1,349,777 gal.	56,397 gal.	26,996 gal.	455,416 gal.
6. Capacity Rel. - Rain/Sur/Press		1,000 gal.	- gal.	500 gal.	- gal.	9,815 gal.	13,034 gal.	- gal.	gal.	gal.	gal.	gal.
(i) No Improvement Ness.		1,000 gal.	- gal.	500 gal.	- gal.	3,860 gal.	11,960 gal.	- gal.	gal.	gal.	gal.	gal.
(ii) Improvement Rec.		- gal.	- gal.	- gal.	- gal.	5,955 gal.	1,074 gal.	- gal.	gal.	gal.	gal.	gal.
SSOs (Excluding BBUs)		1,826,985 gal.	2,680,915 gal.	2,720,575 gal.	1,200,105 gal.	5,284,754 gal.	1,168,578 gal.	5,010,352 gal.	3,461,152 gal.	908,973 gal.	617,711 gal.	2,616,664 gal.
Total		1,826,985 gal.	2,681,527 gal.	2,720,633 gal.	1,200,206 gal.	5,284,836 gal.	1,168,765 gal.	5,010,389 gal.	3,461,328 gal.	909,053 gal.	617,856 gal.	2,616,699 gal.

(1,520,427)

(1,481,321)