City of Shreveport, Louisiana

Consent Decree Annual Report – Year 9

May 13, 2022 - May 12, 2023

CITY OF SHREVEPORT

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SUBMITTAL CERTIFICATION

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 property gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed 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 knowing violations.

William B. Daniel IV, P.E
Director of Water & Sewerage
City of Shreveport

7/6/23
Date

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1.0 INTRODUCTION

1.1 Purpose and Scope

This Annual Report is submitted in accordance with Section VIII *Reporting Requirements*, Paragraph 60, of the Consent Decree and reflects the status of program implementation that occurred between May 13, 2022 to May 12, 2023. A summary of activities planned for the Year 10 reporting period (May 13, 2023 to May 12, 2024) is also provided.

1.2 Consent Decree Overview

The City of Shreveport (City) is implementing various utility operational and management programs and a significant Capital Improvement Program (CIP) to address the requirements of a Federal Consent Decree (Case No. 5:13-cv-3065). The Consent Decree became effective on May 13, 2014, and generally requires the following:

- Analyze the collection system and repair sewer defects which are sources of infiltration and inflow (I/I) and cause or contribute to overflows under 5 Phases of work in first 9 Years of a 12-year Consent Decree Program.
- Reassess the condition of sewers in Phases 1, 2, and 3 in Years 8-12 and repair defects which cause or contribute to sewer overflows.
- Develop a computerized hydraulic model of the sanitary sewer system.
- Analyze the wastewater system and construct additional conveyance capacity improvements where necessary to address Sanitary Sewer Overflows (SSOs) to an approved level of control and treatment plant overloading by conclusion of Year 12.
- Implement Capacity Management Operations and Maintenance (CMOM) Programs, including a sewer overflow response program, a fats, oils, and grease (FOG) control program, a chemical root control program, a private lateral rehabilitation program, a gravity sewer preventative maintenance program, and a wastewater treatment plant operation and preventive Maintenance Program.
- Submit specific periodic reports to United States Environmental Protection Agency (EPA) and Louisiana Department of Environmental Quality (LDEQ).

2.0 PROGRAM ADMINISTRATION DURING YEAR 9

The following sections summarize major events and developments related to the administration and implementation of the City's Consent Decree program that occurred during the Year 9 reporting period.

2.1 Organizational Changes

A summary of organizational changes or challenges experienced by the City of Shreveport during the Year 9 reporting period which affect implementation of its Consent Decree program is provided below.

- The City, like many water and wastewater utilities, continues to face challenges in recruiting, training, and retaining employees. The City's Department of Water & Sewerage has had a range of 320-350 budgeted positions from 2019-2022 but has **averaged approximately 20% vacancies** in those years. This has resulted in the City investing considerable time and energy to having sufficient personnel coverage for essential utility operations and maintenance functions.
- The City approved a 13% pay increase for its employees in January 2022, **the first increase of any amount since pay increases were frozen in 2010.** The pay increase was implemented to help address a major obstacle to recruiting and retaining municipal employees: their pay in comparison to private industry.
- A major departmental restructure was implemented to improve efficiencies by reorganizing the City's Department of Engineering & Environmental Services, with some staff moving into the Department of Water & Sewerage and other staff moving into the Department of Public Works. The City has been working through the logistics of this restructuring throughout 2021 and 2022.

2.2 Regulatory Coordination

Significant coordination with federal and state regulatory agencies occurred throughout Year 9, including various correspondence from the City to United States Department of Justice (USDOJ), EPA, and LDEQ to discuss the status of the City's program and explain the need for modification of the City's Consent Decree. A summary of the correspondence and coordination during the Year 9 reporting period is provided below.

2.2.1 Determination of Stipulated Penalties

The City and the Agencies have had extensive discussions during Year 9 about the Agencies' May 27, 2022 stipulated penalty demand. The issue is currently in formal dispute resolution.

2.2.2 Capacity Assessment Report Update Submittal

The City submitted an update to the Capacity Assessment Report on July 29, 2022. The original Capacity Assessment Report was submitted to EPA on March 9, 2016; however, the City determined that the results of this report needed to be re-evaluated by an updated and recalibrated hydraulic model to more accurately reflect the performance of the City's collection system from a capacity perspective.

2.2.3 Annual Report Information Request

In response to a September 8, 2022 request by EPA regarding additional data from the Year 8 Annual Report, the City provided field investigation data, a draft flow monitoring and rainfall analysis report and a draft hydraulic model report for review. The information that was used for these reports was collected and prepared over the last several years.

2.2.4 Compliance Measures Plan

On October 27, 2022, the City responded to a DOJ request related to the comparison included in an email regarding the January 31, 2022 Compliance Measures Plan. The City prepared a document to show a summary of the work completed and in progress through October 11, 2022.

2.2.5 Informal Dispute Resolution Negotiations

Over the period of time between January 10, 2023 and May 12, 2023, eight (8) meetings to address the Informal Dispute Resolution have occurred, with the original resolution period of 30 days being extended while negotiations are ongoing. As part of the negotiations, the City has been requested to provide additional documents by DOJ / EPA / LDEQ, to which they have complied on the agreed upon dates. Documents submitted during these negotiations have included the following:

- February 22, 2023 submittal of data requested by USDOJ on February 17, 2023
- March 15, 2023 submittal of data requested by USDOJ on March 1, 2023
- March 15, 2023 submittal of presentation for review by USDOJ for meeting on March 16, 2023

- March 29, 2023 submittal of data requested by USDOJ on March 23, 2023
- May 8, 2023 submittal responses to questions by EPA / LDEQ on April 26, 2023

The DOJ ended Informal Dispute Resolution on May 9, 2023.

2.2.6 Submittal of Updated Capacity Remedial Measures Plan

The City submitted an update to the Capacity Assessment Remedial Measures Plan Report on January 31, 2023. The original Capacity Assessment Report was submitted to EPA on July 8, 2016. The City updated the original Capacity Assessment Remedial Measure Plan using the data and determinations from the Capacity Assessment Report Update submitted on July 29, 2022 to identify and plan projects for the Consent Decree. This report replaces the original Capacity Assessment Report.

2.2.7 Submittal of Updated Condition Remedial Measures Plan

The City submitted a Condition Remedial Measures Plan on January 31, 2023. This report was developed to summarize the previously completed Sanitary Sewer Assessment (SSA) and corresponding Remedial Measures Plan (RMP) reports, and outline a process to identify, develop, and deliver projects to improve the condition of the City's wastewater utility infrastructure. The focus of future efforts is to address significant defects that cause or contribute to SSOs.

2.3 The City's Financial Capability and Program Funding

The City's ability to fund remaining Consent Decree obligations has been previously documented in submittals to the regulatory agencies. Funding remaining Consent Decree obligations continues to be a significant challenge for the City's environmental justice and majority minority population – never mind the low and fixed income residents. This issue continues to be challenging to resolve considering ongoing economic and supply chain disruptions and the deferred infrastructure needs of the drinking water system. These items are summarized below.

2.3.1 Financial Hardship and Capability Assessment

The City spent approximately $450 million in the first five years of what was expected to be a $350 million program over twelve years. This extraordinary investment was made possible in part by a staggering **177 percent rate increase between 2013 and 2022** – and this cumulative increase is only for the City's sewer utility rates**.** Water rates increased significantly as well. Despite many

other economic pressures affecting its citizens, the City continued with rate increases through the years of the COVID-19 pandemic. This includes rate increases for the sewer utility of 6% in 2020, 2% in 2021, and 2% in 2022. Water rates increased 6% in 2020 and 4% in 2022. Our counsel advises that most other utilities did not have rate increases during the Covid years.

The City continues to address both its current and future financial needs. The City's 2019 and 2020 debt service coverage ratios were found to be non-compliant by LDEQ. The 2021 and 2022 debt service coverage rates have not been reported yet. On July 26, 2022, the City requested financial consulting services to develop a rate study to address regain compliance with their debt service coverage ratios, as well as develop a plan for meeting the funding needs for Consent Decree projects.

The City is unable to fund remaining Consent Decree obligations without rate increases that would place an unconscionable financial burden on its ratepayers, especially its most vulnerable residents with low and fixed incomes. The City intends to utilize its available funding from previous bond sales to complete high-priority activities, initiatives, and critical projects using an Integrated Planning Approach over the next several years. These bond proceeds are likely all that the City will have available unless financial assistance is provided by federal and state agencies or other revenue sources become available. As discussed below, the City is doing its best to pursue and obtain funding assistance.

2.3.2 Funding Opportunities to Support Program Implementation

Providing federal dollars for the water industry via passage of the *Infrastructure Investment and Jobs Act* (IIJA) or *Bipartisan Infrastructure Law* (BIL) is significant and greatly needed. Like most municipalities, the City has been diligently monitoring developments regarding how these funds will be distributed, including channeling resources to stay abreast of the ever-evolving landscape and aligning initiatives to those items that are understood to be priority for funding opportunities under the IIJA or BIL. Most funding for water and wastewater projects is expected to be administered through the State Revolving Fund (SRF) loan programs. The City has been actively coordinating with the LDEQ and LDH regarding funding opportunities through the SRF program.

The City has reached out to the Drinking Water and Clean Water SRF programs to determine how much funding the City would be able to rely on for projects in the future. Both of these programs

operate as low-interest loans, where eligibility is determined by the State agencies, and the funding is both dependent on available funds and competitive with other applicants. The BIL has provided some principal forgiveness loans and zero-interest loans; however, they are specific to the type of drinking water projects related to emerging contaminants and lead service line replacement, and are based on affordability criteria for wastewater projects. The State agencies stated that they were not able to guarantee any level of current or recurring funds for the City's projects.

In mid-May 2022, the City was notified by the LDEQ that a $20 million loan through the Clean Water State Revolving Fund (CWSRF) had become available for the City. This funding opportunity is related to an application that the City filed in 2019. The City is coordinating with LDEQ to confirm its eligibility to receive the loan. This funding would support delivery of some wastewater projects identified in this report.

In addition, the City has attempted to maximize opportunities for funding provided through the State of Louisiana. In late 2021 and late 2022, applications were submitted to Louisiana's Water Sector Program, including a request for $5 million to fund a major sanitary sewer overflow mitigation project related to the Consent Decree. The Water Sector Program awarded the City a grant of $5.85 million to fund improvements to its water tanks and a waterline to a neighborhood to consolidate its drinking water utility and mitigate water quality issues. No funding was provided for the SSO remediation project.

Lastly, the City has been focused on identifying additional local funds to address infrastructure needs. Consistent with the City's best efforts to stay on track with its Consent Decree obligations, citizens were asked in December 2021 to vote on a general obligation bond proposal totaling $236 million. Five (5) propositions encompassing public safety; technology; streets, bridges, and sidewalks; water, sewer, and drainage; and parks and recreation made up the proposal. Proposition #3 included $36.5 million for water and sewer improvements, including $29.5 million in sewer projects directly associated with the City's Consent Decree. Unfortunately, the citizens supported only one of the five propositions – public safety. The other four propositions were not approved. The defeat of Proposition #3 means that the availability of additional local funds for water and sewer improvements, beyond what is currently available, will be delayed.

2.4 Integrated Planning for Wastewater and Drinking Water Needs

As demonstrated in previous submittals, all the City's compliance and utility obligations need to be considered for the City's Consent Decree program to be sustainable and successful, including the City's obligations to provide reliable water service. The importance of considering the City's water utility needs and obligations continues to be apparent. The February 2021 winter storm exposed operational vulnerabilities of the utility to provide safe drinking water and demonstrated the need for the City to reinvest in its water system to provide reliable utility service. The need for additional drinking water utility investment was reinforced following the Sanitary Survey performed by the LDH in late 2021.

The findings of the Sanitary Survey and the commitments that LDH is seeking will require an investment of time, resources, and capital funding into the City's water utility. Additionally, the City has kicked off its efforts to comply with the Revised Lead and Copper Rule requirements issued by EPA in 2021. The City's current focus is development of an initial Lead Service Line inventory, due October 16, 2024. The City expects that completion of these items will affect its ability to make timely progress on Consent Decree obligations due to funds needing to be dedicated to water system needs, and that completion of water system projects may affect the timing of implementing wastewater activities, initiatives, and projects under the City's Consent Decree program. The City looks forward to productive discussions with the regulatory agencies about the prioritization of these items.

3.0 SUMMARY OF ACTIVITIES IN YEAR 9

The following sections summarize activities completed in the Year 9 reporting period in the Sanitary Sewer Assessment (SSA); Capital Planning; Capacity Assessment; Remediation Measures Plans (RMP); Construction Specifications; Citizen Engagement & Constituent Issue Management; and CMOM categories. As discussed in Section 2.0, the City has been actively coordinating with the regulatory agencies. The activities reported in this section reflect the discussions, most specifically the evident need to shift the focus of the City's program through a formal Consent Decree modification.

3.1 Sanitary Sewer Assessment (SSA)

The City is required to complete Sanitary Sewer Assessments per Consent Decree Part VI. Compliance Requirements, Paragraph A (SSAs) and Paragraph B (SSA Reports).

3.1.1 Sanitary Sewer Assessment (SSA) Overview

SSA field investigation and SSA reports for Phases 1-4 were completed prior to the Year 9 reporting period. Table 3-1 below provides a summary of the City's SSA Report submissions.

Table 3-1: SSA Report Submittals through Year 9

Phase	Phase Description	Completion Deadline Per Consent Decree	Submittal Date
1	Cedar Grove	7/13/2015	7/8/2015
2	Southside, Queensboro, North Highlands, Westside, and Choctaw Bayou	1/13/2017	9/15/2016
3	Cooper Road, Wallace, and Broadmoor	7/13/2018	11/28/2017
4	Stoner, North Pierre Bayou, Bickham Bayou, Country Club, and LSU Basin	1/13/2020	1/10/2020
5	Princess Park, Texas Pierre, Boggy Bayou, Agurs, Highland, Springfield, Gilmer Bayou, Shorewood, Flournoy Bayou, Page Bayou, Cross Bayou, Lower Cross Lake, and Lakeview	7/13/2021	In Progress – 55% Complete

During the Year 9 reporting period, the City completed operation and maintenance SSA activities within its wastewater system focused on maintaining the City's infrastructure and mitigating SSOs as discussed below. Because the City previously completed SSA activities in Phases 1 through 4,

activities completed in Year 9 in those areas of the City are summarized first. Activities completed in the Phase 5 area are presented separately.

3.1.2 Phase 1 – 4 SSA: Activities Completed in Year 9

During the Year 9 reporting period, additional field investigations were completed within Phases 1 through 4 to support ongoing program initiatives including SSO mitigation, hydraulic model update, and identification of critical projects. Sewer assessments were completed through the "Hot Spot" and Annual Sewer Cleaning and Closed-Circuit Television Video (CCTV) Programs. Lift Station Assessments were completed to support design efforts to mitigate SSOs caused by wet weather and reliability issues.

3.1.2.1 Sewer Cleaning and CCTV Inspections

In June 2022, the City initiated two (2) activities related to sewer cleaning and CCTV inspections: a "Hot Spot" Program and an Annual Program. The "Hot Spot" Program accomplished sewer cleaning and CCTV investigations at locations identified with previously recorded dry weather SSOs recorded during the 2021 calendar year, as well as locations identified with wet weather SSOs recorded from 2017 to 2021. The length of work included through the "Hot Spot" Program during the Year 9 reporting period is shown in Table 3-2.

The Annual Program focused on portions of the collection system in Phase 5B that were not previously investigated to fulfill Consent Decree obligations. This Program also included work identified within Phase 1. Gravity sewers were cleaned and investigated in the phases as indicated Table 3-3 through the Annual Sewer Cleaning and CCTV Program during the Year 9 reporting period. Deficiencies identified through these Programs with the potential to cause SSOs were mitigated.

Table 3-2: "Hot Spot" Program Gravity Sewer Cleaning and CCTV Phase 1-4

Diameter (in)	Length in Phase 1 (ft)	Length in Phase 2 (ft)	Length in Phase 3 (ft)	Length in Phase 4 (ft)
6	0	2,585	1,211	435
8	17,470	22,494	13,342	8,526
10	2,115	1,952	2,159	910
12	905	801	0	2,520
15	369	3,225	0	0
18	0	1,473	0	3,422
21	0	1,758	681	0
24	0	1,032	0	0
30	0	0	0	0
36	396	0	0	0
Total	**21,255**	**35,320**	**17,393**	**15,813**

Table 3-3: Annual Program Gravity Sewer Cleaning and CCTV Phase 1

Diameter (in)	Length in Phase 1 (ft)
6	0
8	7,890
10	4,322
12	0
15	0
18	3,619
21	84
24	0
30	0
36	0
Total	**15,915**

3.1.2.2 Lift Station Assessments

During the Year 9 reporting period, twenty-nine (29) lift stations in Phases 1 through 5 were assessed. Assessments were completed to progress the design of Critical Projects, in addition to supporting update and recalibration of the City's hydraulic model. See Section 3.3.3 for discussion regarding the lift stations being rehabilitated through the Critical Infrastructure Projects Program.

3.1.2.3 Aerial Crossing Inventory & Assessment

During the Year 9 Reporting Period, the City completed site visits to inventory major stream crossings. Most gravity sewers crossing a stream or major water body were visited in the field to confirm whether the crossing was aerial, siphon or traditional buried crossing. A total of 49 aerial crossings were identified. The City will review these aerial crossings to evaluate needs for remedial measures or preventative maintenance measures at these locations.

3.1.3 Phase 5 SSA: Activities Completed in Year 9

As reported in the Year 8 Consent Decree Annual Report, the City was forced to suspend the full scope of Phase 5 SSA field investigations due to the inability to fund the Phase 5 projects. During the Year 9 reporting period, the City completed CCTV and manhole inspections in the SSA Phase 5 Area as part of the Annual Sewer Cleaning Program and the "Hot Spot" Cleaning Program. The City also developed a plan to complete additional SSA activities in the Phase 5 area during the Year 10 reporting period. These activities are discussed in Section 4.2.

3.1.3.1 Sewer Cleaning and CCTV Inspections

During the Year 9 reporting period, 174,244 linear feet of gravity sewer mains were cleaned and CCTV inspected within the SSA Phase 5 area. Gravity sewers located within SSA Phase 5 investigated as part of the "Hot Spot" and Annual Sewer Cleaning and CCTV Programs are summarized in Table 3-4 and Table 3-5 below.

Table 3-4: "Hot Spot" Program Gravity Sewer Cleaning and CCTV Phase 5

Diameter (in)		Length in Phase 5A (ft)	Length in Phase 5B (ft)
6		0	1,217
8		3,168	12,925
10		1,307	1,436
12		1,491	151
15		0	0
18		465	0
20		0	0
30		0	0
36		0	0
Total		**6,431**	**15,729**

Table 3-5: Annual Program Gravity Sewer Cleaning and CCTV Phase 5

Diameter (in)	Length in Phase 5B (ft)
6	16,485
8	92,144
10	17,290
12	8,813
15	9,244
16	771
18	4,493
30	2,211
36	633
Total	**152,084**

Including the work completed during the Year 9 reporting period, CCTV has been completed for 866,000 linear feet of the gravity sewers in the Phase 5 SSA Area. This represents a total of 66 percent of sewers in the Phase 5 SSA area.

3.1.3.2 Manhole Inspections

During the Year 9 reporting period, the City completed visual inspections and gathered GPS coordinates for 513 manholes within the Phase 5 SSA Area as part of the Collection System Assessment Program. The City has completed inspections for approximately 2,400 of the 4,125 manholes within the SSA Phase 5 Area.

3.1.3.3 Smoke Testing and Dye Flooding

No additional smoke testing or dye flooding was completed during the Year 9 reporting period within the SSA Phase 5 Area. The City has completed smoke testing and dye flooding for approximately 39 percent (489,526 lineal feet) of the gravity sewer system within the SSA Phase 5 Area.

3.1.3.4 Lift Station Assessments

During the Year 9 reporting period, six (6) lift stations were assessed within the Phase 5 SSA Area. Assessments were completed to progress the design of Critical Projects, in addition to supporting update and recalibration of the City's hydraulic model.

3.2 Capacity Assessment

During the Year 9 reporting period, the City prepared and issued a revised Capacity Assessment report in July 2022. The Capacity Assessment Report Submittal was issued to the EPA and LDEQ and is available through the Public Document Repository (PDR) as defined in Consent Decree Requirement Part V, Paragraph 9. The Capacity Assessment Remedial Measures Plan (CARMP) was also prepared and issued during the Year 9 reporting period and is further discussed in Section 3-4 below. The following paragraphs provide a summary of activities associated with the hydraulic model during the year 9 reporting period.

3.2.1 Hydraulic Model

Recalibration of the City's hydraulic model was completed in January 2022. Since completion of the model calibration, continued maintenance of the current condition model has been ongoing. Maintenance has consisted of asset naming updates of manholes and pipes to coincide with the City's GIS and CMMS systems. Post construction updates continue to be updated within the model to configure the network to reflect the changes to the collection system network for projects where construction has finished, and record drawings have become available. The hydraulic model was also upgraded from Innovyze ICM v9.5 to the latest Innovyze ICM 2023 version.

3.2.2 Additional Modeling Activity During the Year 9 Reporting Period

The current condition hydraulic model was used to support project development and evaluations for several of the City's critical projects aimed at mitigating wet weather SSOs. These projects include:

- Dilg League SSO Mitigation
- Darien & Hardy Lift Station Improvements
- Havanna LS abandonment
- Pierremont Park SSO Mitigation
- Brookmeade & Querbes SSO Mitigation

The hydraulic model was also used throughout the Year 9 reporting period for on-going review of new development permits by evaluating existing capacity through the City's wastewater collection system.

3.3 Remediation Measures Plans (RMP)

The City is required to complete Sewer System Remediation Measures Plans per Consent Decree Section VI. Compliance Requirements, Part C, Paragraphs 30-34. The following paragraphs summarize the status of these activities.

3.3.1 Remediation Measures Plans (RMP) Submittals

RMP Submittals were completed for Phases 1-4 prior to the start of Consent Decree Year 9. Phase 1-4 RMP Submittals were issued to the EPA and LDEQ and are available through the Public Document Repository (PDR) as defined in Consent Decree Requirement Part V, Paragraph 9. Table 3-6 below provides a summary of RMP submittals through the Year 9 reporting period.

Table 3-6: RMP Report Submittals through Year 9

Phase	Phase Description	Completion Deadline Per Consent Decree	Submittal Date
1	Cedar Grove	9/13/2015	9/9/2015
2	Southside, Queensboro, North Highlands, Westside, and Choctaw Bayou	3/13/2017	9/20/2016
3	Cooper Road, Wallace, and Broadmoor	9/13/2018	12/5/2017
4	Stoner, North Pierre Bayou, Bickham Bayou, Country Club, and LSU Basin	3/13/2020	3/12/2020
5	Princess Park, Texas Pierre, Boggy Bayou, Agurs, Highland, Springfield, Gilmer Bayou, Shorewood, Flournoy Bayou, Page Bayou, Cross Bayou, Lower Cross Lake, and Lakeview	9/13/2021	In Progress (See Discussion Below)

3.3.2 Remediation Measures Plans (RMP) Status

The status of activities and projects within each Phase is provided below.

3.3.2.1 Phase 1

The City constructed 30 total projects within SSA Phase 1. All 30 projects have reached final completion. Table 3-7 below provides a summary of the project status of each of the Phase 1 RMP Project.

Table 3-7: SSA Phase 1 – RMP Project Summary

Project Name	Functional Completion	Final Completion*
101.124.125.147 – Dowdell St. & Fairfield Ave.	8/3/2017	11/28/2017
102 – Wyngate Blvd. & W. 84th Street	9/2/2017	11/15/2017
103 – Garden Valley Subdivision Unit 2 Valley View Dr. & Timberview Rd.	N/A	8/11/2017
103.106.109.110 – West Canal & Valley View	11/27/2017	2/23/2018
104.119.142 – Union & Wallace Ave.	4/19/2017	12/20/2017
105.108 – Cedar Grove Trunk main	N/A	9/28/2017
106.107.114 – Hollywood Ditch & W. 70th Street	2/28/2018	9/20/2018
109.110.113.129.130.132.135.152.153.154 Sunset Acres & Cargill Park Area (Hickory Ridge LS)	3/27/2018	5/4/2018
111 – Garden Valley Unit 1 Louise St. & W. Canal Blvd.	10/6/2017	5/15/2018
112 – Karen & Dollarway Street	N/A	7/7/2017
114 – Joe Louis & Evers Drive	8/10/2017	3/2/2018
115.120.127.128.151 – Wyngate Blvd. & Wallace Ave.	9/1/2017	6/22/2018
116.117.118.139 – Hollywood & Kennedy Ave.	10/11/2017	12/22/2017
121.122.123.143.144.145.146 Linwood & Fairfield Ave.	4/7/2018	11/30/2018
126.148.149.150.166.167.168 Linwood & Line Ave.	1/12/2018	4/17/2019
131 – Standard Oil & Wisteria St.	N/A	12/1/2016 **
133 – Monkhouse & Interstate Drive	N/A	11/7/2016 **
134 – Greenwood Rd. & Junior Place	N/A	12/1/2016 **
136.137.157 – Hollywood Ave. & Singletary Street	9/29/2017	5/7/2018
138.140.156.169 – Henry & Kennedy Street	10/31/2018	10/29/2019
141.161.171.175.176.178.180 Hearne & Hollywood Trunk main	2/19/2018	2/24/2019
158.159.160.170 – Jewella Ave. & Clarke Blvd.	1/23/2018	7/16/2018
162.163.164.165.172.173.174 – Mansfield Rd. & Corbitt St.	1/5/2018	11/14/2018
175.177.178.179 – Jewella Ave. & Greenwood Rd.	12/30/2017	6/12/2020
201 CIPPL Package 1	12/8/2017	9/20/2019
202 CIPPL Package 2	4/11/2018	7/24/2019

Project Name	Functional Completion	Final Completion*
203 CIPPL Package 3	12/7/2017	1/24/2020
204 CIPPL Package 4	4/11/2018	11/10/2019
STO-03 – Meadow Parkway Lift Station Rehab	N/A	10/6/2017
STO-04 – Cedar Grove & Slack Lift Station Rehab	N/A	10/18/2017

*Some entries are marked "Not Applicable (N/A)." This is because the City and/or previous Program Manager did not recognize Functional Completion as a contract milestone until after some of the Phase 1 projects had been completed.

** A Final Completion letter was not issued by City. Indicates the date of the Partial Completion letter that is filed at the Courthouse. As shown above, all Phase 1 projects reached Functional Completion by October 31, 2018. All Phase 1 projects reached Final Completion by June 12, 2020.

The original value of the 80 collection system improvement projects was estimated at approximately $131,427,000 (2016 Dollars). During design, these 80 projects were consolidated into a collection of 30 bid packages for construction. Following the completion of all Phase 1 RMP projects, the actual costs spent on construction of the Phase 1 RMP projects was approximately $190,270,000. This is a 45% increase in the estimated costs of the Phase 1 RMP projects.

3.3.2.2 Phase 2

A total of 17 total construction projects were developed based on the Phase 2 RMP. All 17 projects have reached final completion. Table 3-8 below provides a summary of the actual completion dates for each of the Phase 2 RMP projects.

Table 3-8: SSA Phase 2 – RMP Project Summary

No.	Project Name	Actual Dates	
		Functional Completion	Final Completion
2-SH1	South Highlands East CIPP	4/12/2021	5/3/2021
2-SH2	South Highlands West CIPP	12/31/2019	9/10/2020
2-SH3	South Highlands Sewer Replacement	11/27/2019	6/12/2020
2-SH4	Mansfield & Claiborne Area Replacement	6/4/2019	7/31/2019
2-QR1	North Querbes CIPP	12/31/2019	4/5/2021

No.	Project Name	Actual Dates	
		Functional Completion	Final Completion
2-QR2	South Querbes CIPP	6/3/2020	4/6/2021
2-QR3	North Querbes Replacement	11/27/2019	6/10/2020
2-QR4	South Querbes Replacement	6/1/2020	11/6/2020
2-QB1	North Queensboro CIPP	12/15/2019	5/3/2021
2-QB2	South Queensboro CIPP	11/27/2019	9/28/2020
2-QB3	Choctaw Bayou and Queensboro Sewer Replacement	4/12/2019	1/24/2020
2-NH1	North Highlands Interceptor	3/19/2019	10/30/2019
2-NH2	N Highlands, Choctaw & Queensboro CIPP	12/30/2019	12/2/2020
2-NH3	North Highlands Sewer Replacement	Unknown – Functional Completion Certificate Not Issued	10/30/2019
2-LS1	Lift Stations / Force Main Condition	4/30/2019	2/4/2020
2-WS1	Westside CIPP	11/27/2019	10/1/2020
2-WS3	Westside Sewer Replacement	4/3/2019	8/19/2019

The original value of the 29 Phase 2 RMP collection system improvement projects was estimated at approximately $200M (2017 Dollars). During design, these 29 projects were consolidated and a collection of 17 bid packages for construction were created. Following the completion of all Phase 2 RMP projects, the actual construction cost of the Phase 2 RMP projects was approximately $110,000,000.

3.3.2.3 Phase 3

A total of 14 projects were developed based on the Phase 3 RMP. Each of these projects advanced into detailed design during the Year 6 Reporting Period. Bidding and construction of Phase 3 projects was placed on hold during Consent Decree Year 6 due to the City's limited financial resources, inability to fully fund all Phase 3 projects, and concerns about the hydraulic model used to develop the scopes of the Phase 3 projects. As described in Section 3.6.2, the City's current approach of implementing targeted initiatives to address SSOs has been demonstrated to be more effective at mitigating SSOs than the approach used to identify and develop the Phase 3 and Phase 4 RMP projects.

The estimated construction cost of the Phase 3 RMP projects is approximately $172,930,000 when previously developed Opinion of Probable Construction Costs (OPCC) are updated to 2022 dollars. Table 3-9 provides a summary of the proposed improvements included within the Phase-3 construction packages.

Table 3-9: SSA Phase 3 – RMP Project Summary

No.	Project Name	Design Status	Construction Status	Project Description
3-113	Wallace Interceptor	100%	Not Started	Sewer rehabilitation of 20,000 LF of 54-inch CIPP and replace 28 48-inch manholes.
3-115	Wallace Interceptor Sewer Rehab 1	100%	Completed 8/27/2020	Sewer rehabilitation of 6,000 LF of 42-inch to 54-inch CIPP and replace 20 manholes.
3-116***	Southern Hills Interceptor (Segment B)	90%	Not Started	Sewer replacement of 5,000 LF of gravity sewer main and install new manholes.
3-117***	Southern Hills Interceptor Phase 2	90%	Not Started	Sewer replacement of 6,300 LF of gravity sewer main and install new manholes.
3-LS1***	Lift Station Condition Improvements	100%	(1) Completed (6) In Design	Improve or rehab 7 lift stations and 3 force mains. The stations are: Cedar Creek: Final Completion - 1/21/22 Dixie Garden Elgin Knight Street Mackey Lane Shreve Island Wallace
3-NE1***	Northeast Sewer Replacement	100%	Not Started	Sewer replacement of 15,000 LF of 4-inch to 36-inch gravity sewer main and install 380 manholes.
3-103, 104 3-NER1	Northeast Sewer Rehab 1	100%	Not Started	Sewer rehabilitation of 67,000 LF of 6-inch to 12-inch CIPP, replace 64 48-inch manholes.
3-105, 107 3-NER2	Northeast Sewer Rehab 2	100%	Not Started	Sewer rehabilitation of 72,000 LF of 6-inch to 15-inch CIPP and replace 155 48-inch manholes.
3-101, 102 3-NER3	Northeast Sewer Rehab 3	100%	Not Started	Sewer rehabilitation of 77,000 LF of 6-inch to 12-inch CIPP as well as replace 27 manholes.
3-106, 112, 113, 114 3-NS1	Pierremont Rd & Boggy Bayou Areas Rehab	100%	Not Started	Sewer rehabilitation of 50,000 LF of 6-inch to 18-inch CIPP and replace 61 manholes.

No.	Project Name	Design Status	Construction Status	Project Description
3-110, 111 3-SW1	Southern Hills Sewer Rehab	100%	Not Started	Sewer rehabilitation of 120,000 LF of 6-inch to 10-inch CIPP and replace 47 manholes.
3-108, 109, 112 3-SW2	South West Sewer Replacement 2	100%	Not Started	Sewer replacement of 20,000 LF of 8-inch to 24-inch of gravity sewer main as well as 151 replacement manholes.
3-110, 111, 113, 114 3-SW3	South West Sewer Replacement 3	100%	Not Started	Sewer replacement of 13,000 LF of 8-inch to 42-inch of gravity sewer main as well as 101 replacement manholes.
3-108, 109, 112 3-SW4	South West Rehab 4	100%	Not Started	Sewer replacement of 100,000 LF of 8-inch to 15-inch of CIPP as well as 37 replacement manholes.

*** Based on the City's approach to apply its available funding to directly mitigate SSOs, construction packages were developed and advanced during the Year 9 Reporting Period to address known problems. Three (3) SSA Phase 3 projects were included in the City's Critical Project portfolio as follows:

- **3-LS1 Lift Station Condition Improvements:** Design for the remaining six (6) lift stations included in 3-LS1 began in March 2022.
- **3-116 / Southern Hills Interceptor (Segment B) / 3-117 Southern Hills Interceptor (Segment A):** The initial RMP identified the replacement of the Southern Hills Interceptor, including the 3-116 and 3-117 projects, as a wastewater critical project. Based on the results of the revised calibrated hydraulic model, the extent of the replacement/rehabilitation of the Southern Hills Interceptor will be significantly less than what was included in the 3-116 and 3-117 projects due to a reduction in the length of capacity restrictions identified in the Southern Hills Interceptor. The actual extent of replacement/rehabilitation will be finalized during design. It is anticipated that construction will occur after 2024 depending upon available funding.
- **3-NE1 Northeast Sewer Replacement:** The sanitary relief project west of the Broadmoor Lift station currently included within the 3-NE1 scope of work is being advanced as a wastewater critical project due to the recurrence of wet weather SSOs at the intersection of Brookmeade and Querbes and along Trinity Circle. This project will include approximately 6,000 LF of 10-inch to

30-inch sanitary sewers and has a construction value of approximately $10,500,000 (2022 Dollars). Construction began in 2022 and is expected to be completed by the end of 2023.

3.3.2.4 Phase 4 RMP

The City issued the Phase 4 RMP to the EPA and LDEQ on March 12, 2020 and has posted the report to the Public Document Repository (PDR) as required in Consent Decree Part V, Paragraph 9. The Phase 4 RMP summarized the remedial measures required based on the findings presented within the Phase 4 SSA Report. The estimated value of the 14 Phase 4 RMP collection system improvements was approximately $93,500,000, in 2022 dollars. The estimated value of the 33 Phase 4 RMP lift station improvement projects was approximately $9,440,000, in 2023 dollars. Design of Phase 4 remediation measures has not yet begun due to the City's inability to fund construction of Phase 4 improvements coupled with a lack of confidence in the City's existing hydraulic model as a design tool for Phase 4 projects. As described in Section 3.6.2, the City's current approach of implementing targeted initiatives to address SSOs has been demonstrated to be more effective at mitigating SSOs than the approach used to identify and develop the Phase 3 and Phase 4 RMP projects.

3.3.2.5 Phase 5 RMP

The Capacity Assessment Remedial Measures Plan for Phase 5 was submitted to EPA on January 29, 2022. Finalization of the Phase 5 Condition RMP will be delayed due to suspension of the Phase 5 SSA activities. SSA activities for Phase 5 are approximately 55% complete. Remaining Phase 5 SSA work, valued at approximately $12 million, was suspended by the City in March 2020 due to inadequate funding for implementation of Phase 5 projects. As described in Section 3.6.2, the City's current approach of implementing targeted initiatives to address SSOs has been demonstrated to be more effective at mitigating SSOs than applying the previous approach used to identify projects that were constructed for Phase 1 and Phase 2 and identified in the RMP reports for Phase 3 and Phase 4. The current approach of mitigating SSOs has been implemented for Phase 5.

3.3.3 Critical Infrastructure Projects

In early 2020, 19 projects were selected to mitigate SSOs, address regulatory compliance, and maintain reliable utility service within the City's wastewater and water utilities. In early 2021, the

City identified other Critical Projects for delivery from 2021 to 2024, with their completion pending the availability of funding. The projects identified in 2021, described in the Year 7 Annual Report, were selected to address the same goals as the projects selected in 2020: mitigate SSOs, address regulatory compliance, and maintain reliable utility service.

During Informal Dispute Resolution discussions, EPA / LDEQ requested modifications to the projects listed as part of the wastewater critical projects that are not part of the Consent Decree. The City continued to advance delivery of these projects through the Consent Decree Year 9 reporting period; however, they are no longer included in the list of Critical Infrastructure Projects, per EPA / LDEQ request. A summary of the current status of the Critical Infrastructure Projects is provided below.

3.3.3.1 Wastewater Critical Projects

The wastewater projects listed in Table 3-10 describe the project status, identified budget and a brief description of the improvements. It is important to note that full implementation (e.g., completion of construction) of some projects is dependent upon the availability of funding – in these cases, the project description identifies the project delivery activities planned for completion at this time. Additional project delivery activities will be completed if funding becomes available. The City has also identified additional projects for implementation and plans to use an Integrated Planning Approach to select projects presented in Table 3-11 or others identified through subsequent planning efforts that will provide the maximum benefit to public health using the City's available funding.

3.3.3.2 Water Critical Projects

As discussed in Sections 2.4, the City has a significant need to invest in its drinking water utility. In response to this need, the City is delivering critical drinking water projects, which are presented in Table 3-12 These projects are presented here even though they are not directly related to the City's Consent Decree program. Like many of the City's wastewater critical projects, funding is currently not available for full implementation of the water critical projects. Integrated Planning and a flexible approach using adaptive management principles will be essential to ensure that, as additional financial resources become available, they are applied to investments that will deliver the greatest overall public benefits.

3.3.3.3 Other Required Water Utility Initiatives

In addition to the water critical projects described above, the City is implementing various initiatives to address regulatory compliance or other required items associated with its drinking water utility. Even though these items are not related to the City's Consent Decree program, they are important to understand because they demonstrate that the City's compliance obligations extend to items beyond the Consent Decree. Addressing these items requires financial and managerial resources that limit the City's ability to make investments in its Consent Decree program. These initiatives are summarized below:

- **America's Water Infrastructure Act (AWIA) of 2018:** The City completed a Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) to meet the legislative requirements of AWIA. The City strives to routinely review its RRA to protect its drinking water system from natural and malevolent hazards. This includes an annual tabletop review of the RRA and ERP, with an update every 5 years, as required by the AWIA legislation. Capital investments are occasionally required to maintain compliance with AWIA.

- **Revised Lead and Copper Rule (LCRR):** In December 2020, EPA announced an update to the Lead and Copper Rule. The LCRR includes a requirement for identifying the materials for all of the service lines throughout the drinking water system on both the system-side and the customer-side of the meter. The City has been combing through existing documents and records to determine these materials for their initial inventory. Additional efforts may include field verification of materials as necessary to update the inventory.

- **Property Insurance Association of Louisiana (PIAL):** The Property Insurance Association of Louisiana (PIAL) is a private, non-profit association composed of all insurance companies licensed to write fire and certain coverages within the State of Louisiana. PIAL evaluates the fire protection capabilities of municipalities and fire districts to determine a Protection Classification for the City. The results of this evaluation can affect property insurance ratings in the City. Capital investments are occasionally required to maintain the City's insurance rating.

- **Louisiana Department of Health (LDH) Sanitary Survey:** In October 2021, the City received the determinations by LDH on its most recent sanitary survey. These determinations included several "Significant Deficiencies" that elevate these deficiencies to requirements by LDH to

address. To address the areas listed in the Sanitary Survey, the City is in the process of completing design projects that will lead to significant construction projects valued at approximately $15M. Design is anticipated to be completed by the end of 2024.

- **Cybersecurity Assessment for Critical Infrastructure Facilities:** On March 3, 2023, EPA mandated that Sanitary Surveys must now include a requirement to evaluate the cybersecurity of the water system. The City is currently working with a consultant to address cybersecurity through a self-assessment in advance of the next Sanitary Survey.

Table 3-10: Wastewater Critical Projects

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-01	Wallace Interceptor at Boggy Bayou	Design and construction of demolition/abandonment and relocation of approximately 1,350 linear feet of 54-inch diameter gravity sewer main from the crossing of Boggy Bayou.	Construction	$3,000,000
CWP-02	North Pierre Lift Station Roof Repair	Design and construction to remove and replace existing roof and ceiling. Install new lighting on the inside of the lift station as well.	Completed	$84,000
CWP-03	Stoner Emergency Repair	Design and construction of repairs of existing 48-inch diameter sanitary sewer main collapsed at influent line to the Stoner Lift Station.	Completed	$1,096,000
CWP-05	North Regional WWTP - Levee Repair #2	Design and construction of repairs for failing slopes along the levee next to Twelve Mile Bayou.	Completed	$200,000
CWP-06	Southern Trace Lift Station Improvements	Design and construction of repairs and improvements to existing Southern Trace Lift Station.	Completed	$300,000
CWP-07	North Regional WWTP Levee Repair #1	Design and construction of repairs to the North Regional WWTP levees due to failing slopes.	Completed	$216,000
CWP-10	Public Landing Lift Station Improvements	Design and construction of repairs and improvements to existing Public Landing Lift Station.	Completed	$700,000

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-11	Stratmore Lift Station Improvements	Design and construction to rehabilitate an existing lift station along with the associated piping.	Construction	$700,000
CWP-12	Lift Station Package 1a – Maywood LS Rehabilitation	Design and construction to rehabilitate a lift station to address current mechanical, electrical, hydraulic, and operational issues.	Construction	$4,577,000 (Total for all CWP-12 projects)
CWP-12	Lift Station Package 1b – Land O' Trees Lift Station Rehabilitation	Design and construction to rehabilitate lift stations to address current mechanical, electrical, hydraulic, and operational issues.	Construction	See Item 12
CWP-12	Lift Station Package 2 – Cherokee, Forbing Glen, and Long Timbers Lift Station Rehabilitation	Design and construction to rehabilitate lift stations to address current mechanical, electrical, hydraulic, and operational issues.	Construction	See Item 12
CWP-12	Lift Station Package 3 – Agurs and Glen Avenue Lift Station Rehabilitation	Design and construction to rehabilitate lift stations to address current mechanical, electrical, hydraulic, and operational issues.	Construction	See Item 12
CWP-12	Lift Station Package 4 - Lakeside Boat, Pinecrest, and Woolworth No.1 Lift Station Rehabilitation	Design and construction to rehabilitate lift stations to address current mechanical, electrical, hydraulic, and operational issues.	Construction	See Item 12
CWP-12A	Cedar Creek Lift Station Improvements	Design and construction of repairs and improvements to existing Cedar Creek Lift Station.	Completed	362,000
CWP-15	Golf Link Drive Sewer	Design and construction of installation of new 8" PVC sewer main to replace aging sewer main infrastructure.	Completed	$312,000

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-16	Edwards Sewer Improvements	Existing 6” and 10” gravity sewer mains have numerous defects contributing to a recurring SSO in the alley between Edwards and Milam.	Completed	$650,000
CWP-17	Exposed Sewer Mains in Bayou Pierre	Study & Report, design, and construction for rehabilitation of existing 20-inch diameter and 24-inch diameter sewer crossing of Bayou Pierre exposed due to erosion of existing concrete encasement built within the flowline of concrete ditch.	Design	$575,000
CWP-36	Manhole Rehabilitation & I/I Reduction - 2022	System-wide manhole rehabilitations to address high-priority condition issues.	Completed	$550,000
CWP-37	Caddo Bossier Port Sewer Repair	Construction of repairs of gravity sewer main that caused a sinkhole under existing Caddo Bossier Fuel Facility.	Completed	$78,000
CWP-56	Dilg League SSO Mitigation (Permanent)	Study & Report, design, and construction of improvements to address reoccurring SSOs at Dilg League Drive area.	Design	$16,500,000
CWP-63	Brookmeade & Querbes SSO Mitigation	Design and construction of improvements to address reoccurring SSOs in the Brookmeade & Querbes area. Approximately 6,000 feet of 10- to 30-inch-diameter gravity sewer is anticipated to be installed.	Construction	$10,500,000
CWP-117	Pierremont Park Sewer Improvements	Design and construction of improvements to replace existing 24-inch diameter gravity sewer with a larger new 30-inch. Note: this is a subproject originally part of the CWP-63 Brookmeade & Querbes SSO Mitigation project. The City has expedited this project to construction.	Construction	$8,000,000

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-64	Gravity Sewer Main Improvements 2023	Study & Report of improvements to address high-priority condition issues based on NASSCO PACP ratings, known SSO locations, and work order records. The City intends to complete only Study & Report activities at this time.	Planning	$5,000,000
CWP-79	Lift Station Improvements - Darien, Hardy, Meadow Parkway, Patzman Park, Alabama, Pinehill Road, North Caddo, Marjorie, Hawkins, and Pinehill Estates Lift Stations	Study & Report and design of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues contributing to observed SSOs or reliability issues that, if not addressed, have a high likelihood of causing future SSOs. The City intends to complete only Study & Report and Design activities at this time.	Design	$7,250,000
CWP-80	Lift Station Improvements - Havanna, Country Club, Fern, Cadillac, Risinger, Cross Creek, Elgin, and North Hearne Lift Stations	Study & Report and Design of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues contributing to observed SSOs or reliability issues that, if not addressed, have a high likelihood of causing future SSOs. The City intends to complete only Study & Report and Design activities at this time.	Design	$3,850,000
CWP-81	Lift Station Improvements - Azalea Gardens, Attaway, Fannin, Bickham Bayou, North Pierre, and Linear Lift Stations	Study & Report and Design of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues contributing to observed SSOs or reliability issues that, if not addressed, have a high likelihood of causing future SSOs. The City intends to complete only Study & Report and Design activities at this time.	Design	$7,000,000

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-82	Lift Station Improvements - Wallace, Dixie Garden, Shreve Island, Knight Street, and Mackey Lane Lift Stations	Study & Report and Design of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues contributing to observed SSOs or reliability issues that, if not addressed, have a high likelihood of causing future SSOs. The City intends to complete only Study & Report and Design activities at this time.	Design	$4,000,000
CWP-83	Wallace Force Main Improvements	Study & Report to evaluate alternatives for rehabilitation or replacement of select portions of approximately 45,000 feet of 36-inch diameter ductile iron pipe (DIP) force main that is approximately 40 years old. The City intends to complete only Study & Report activities at this time.	Study & Report	$28,000,000
CWP-84	Cedar Grove Force Main Improvements	Study & Report to evaluate alternatives for rehabilitation or replacement of select portions of approximately 28,000 feet of 36-inch-diameter pre-stressed concrete force main that is approximately 45 years old. The City intends to complete only Study & Report activities at this time.	Study & Report	$26,000,000
CWP-85	Stoner Force Main Improvements – Additional Scope	Study & Report to evaluate alternatives for rehabilitation or replacement of select portions of approximately 46,000 feet of 36-inch diameter pre-stressed concrete force main that is approximately 45 years old. The City intends to complete only Study & Report activities at this time.	Study & Report	$25,000,000
CWP-102	Southern Hills Interceptor	Design of replacement of approximately 24,000 feet of 8- to 42-inch diameter concrete gravity sewer that is approximately 40 years old. The City intends to complete only Design activities at this time.	Design	$20,000,000
CWP-60	Stoner Force Main Improvements – Original Scope	Installation of 36-inch diameter force main and construction of new Champion Lake Lift Station.	Construction	$2,200,000

Table 3-11: Other Wastewater Critical Projects

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-61	Gravity Sewer Main Improvements Package 1: Lines Under Homes (Broadmoor and Querbes Area)	Design and construction of improvements to reroute residential sanitary sewer laterals from under homes in the Broadmoor and Querbes neighborhoods. Further implementation of project to follow Study & Report pending available funding.	Study & Report	$5,000,000
CWP-64	Gravity Sewer Main Improvements 2023	Design and construction of high-priority condition improvements. Further project activities to follow pending available funding.	Planning	$5,000,000
CWP-79	Lift Station Improvements - Darien, Hardy, Meadow Parkway, Patzman Park, Alabama, Pinehill Road, North Caddo, Marjorie, Hawkins, and Pinehill Estates Lift Stations	Construction of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues. Construction of improvements to follow design pending available funding.	Design	$4,000,000
CWP-80	Lift Station Improvements - Havanna, Country Club, Fern, Cadillac, Risinger, Cross Creek, and Elgin Lift Stations	Construction of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues. Construction of improvements to follow design pending available funding.	Design	$4,000,000
CWP-81	Lift Station Improvements - Azalea Gardens, Attaway, Fannin, Bickham Bayou, North Hearne, North Pierre, and Linear Lift Stations	Construction of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues. Construction of improvements to follow design pending available funding.	Design	$4,000,000
CWP-82	Lift Station Improvements - Wallace, Dixie Garden, Shreve Island, Knight Street, and Mackey Lane Lift Stations	Construction of rehabilitation of lift stations to address current mechanical, electrical, hydraulic, and operational issues. Construction of improvements to follow design pending available funding.	Design	$4,000,000

Project Number	Project	Project Description	Current Status	Estimated Total Project Cost (2022 Dollars)
CWP-83	Wallace Force Main Improvements	Design and construction of rehabilitation or replacement of portions of 36-inch diameter ductile iron pipe (DIP) force main. Design and construction of improvements to follow Study & Report pending available funding.	Study & Report	$28,000,000
CWP-84	Cedar Grove Force Main Improvements	Design and construction of rehabilitation or replacement of portions of 36-inch diameter ductile iron pipe (DIP) force main. Design and construction of improvements to follow Study & Report pending available funding.	Study & Report	$26,000,000
CWP-85	Stoner Force Main Improvements	Design and construction of rehabilitation or replacement of portions of 36-inch diameter force main. Design and construction of improvements to follow Study & Report pending available funding.	Study & Report	$25,000,000
CWP-102	Southern Hills Interceptor	Construction of replacement of 8- to 42-inch diameter concrete gravity sewer. Construction of improvements to follow Design pending available funding.	Design	$20,000,000

Table 3-12: Water Critical Projects

Project Number	Project	Project Description
CWP-04	Amiss Ozone Improvements	Design and construction of modifications to the three existing treatment plants and processes to repair/replace equipment and address finished water taste and odor issues.
CWP-35	McNeil Slope Stability Improvements	Rehabilitation of existing slopes along 12 Mile Bayou believed to be impaired after installation of Museum observation deck. Project placed on hold after predesign study indicated project has an excessive cost compared to benefit.
CWP-42	SCADA - Master Plan & Implementation	Development of a SCADA Master Plan to identify needed improvements.
CWP-49	Water Main Crossing at Twelve Mile Bayou	Rehabilitation or replacement of the existing 20-inch steel pipe across Twelve Mile Bayou.
CWP-50	Twelve Mile Bayou Pump Station Discharge Main Evaluation	Rehabilitation or replacement of existing large diameter raw water main from Twelve Mile Bayou Pump Station to the Amiss Water Treatment Plant.
CWP-51	Amiss WTP Intake Structure Rehabilitation	Rehabilitation of the existing WTP intake structure.
CWP-73	Citywide AMI Water Meter Replacement	System-wide program to replace water meters.
CWP-74	Amiss WTP Transmission Piping and Valve Replacement	Replacement of the transmission line from the WTP to the distribution system
CWP-75	West Shreveport Elevated Storage Tank Rehabilitation	Rehabilitation of storage tank infrastructure to address condition issues.
CWP-76	70th and Pines BPS Rehabilitation	Rehabilitation of pump station and storage tank infrastructure to address condition issues.
CWP-77	Water System Winterization and Resiliency Improvements	System improvements for resiliency to mitigate exposure during freezing weather.
CWP-91	Cross Lake Dam and Spillway Rehabilitation	Rehabilitation of the dam and spillway that controls the level in Cross Lake.
CWP-94	Ford Street Water Improvements	Relocation of existing 12-inch diameter water main under Ford Street.

Project Number	Project	Project Description
CWP-96	St. Vincent Elevated Storage Tank Rehabilitation	Rehabilitation of storage tank infrastructure to address condition issues.
CWP-98	Jordan Street Water Main Replacement	Replacement of existing 12-inch and 6-inch diameter water mains along Jordan Street.
CWP-100	Jewella/Fair/Magnum Water Main Replacements	Replacement of existing 6-inch diameter water mains along Jewella Avenue, Fair Street and Magnum Street.
CWP-101	Huron Street Water Main Replacement	Replacement of existing 8-inch diameter water mains along Huron Street.
CWP-107	BPS Standby Generator Installation (Permanent)	Installation of permanent backup power units at three (3) booster pump stations.

3.4 Capacity Assessment Remedial Measures Plan

A description of the City's ongoing and planned activities to develop a system-wide wet weather overflow strategy is below. This is reflective of discussions with the regulatory agencies during the December 3, 2020 and April 16, 2021 meetings, as well as submittals made subsequent to these meetings. Table 3-13 provides a timeline with corresponding completion dates for all the major steps which lead to a resubmittal of the Capacity Assessment Remedial Measures plan in January 2023 during the Year 9 Reporting period.

Table 3-13: Timeline of Wet Weather Conveyance Strategy

Activity	Anticipated Completion Date
Update and Recalibrate the City's Hydraulic Model	January 2022 (Year 8) - Complete
Complete a Return Period Analysis	April 2022 (Year 8) - Complete
Update and Revise the City's Capacity Assessment Report	July 2022 (Year 9) - Complete
Evaluate Alternative Wet Weather Control Measures to Identify Those that are Both Affordable and Cost-Effective to Reduce SSOs	September 2022 (Year 9) - Complete
Update and Revise the City's Capacity Assessment Remedial Measures Plan	January 2023 (Year 9) - Complete

3.4.1 Capacity Assessment Report

Following completion of the model update and recalibration, a Return Period Analysis was performed and completed in April 2022. The City submitted the Capacity Assessment Report to EPA and LDEQ in July 2022.

3.4.2 Capacity Assessment Remedial Measures Plan (CARMP)

During the Year 9 reporting period, the City prepared and issued a revised Capacity Assessment Remedial Measures Plan Report (CARMP) in January 2023. The CARMP was issued to the EPA and LDEQ and is available through the Public Document Repository (PDR) as defined in Consent Decree Requirement Part V, Paragraph 9. The CARMP replaces the previously issued report from 2015 in its entirety. The revised CARMP includes a total of 23 capacity related projects which are outlined in Table 3-14 below.

Table 3-14 : Capacity RMP Projects

Project Category	SSA Phase	Project Area	Project Description	Project Status
A	3	WAL-A1	I/I Reduction Program	Planning
			Linear Capacity Improvement	Design
A	2	LOU-A2	Linear Capacity Improvement	Design
A	2	LOU-A3	Querbes Lift Station and Linear Capacity Improvements	Design
A	3	LOU-A5	I/I Reduction Program	Planning
A	2	LOU-A7	Linear Capacity Improvement	Design
A	5	LWW-A1	I/I Reduction Program	Planning
A	2,4	LWW-A2	I/I Reduction Program	Planning
A	4	LWW-A3	Linear Capacity Improvement	Design
A	1	CGR-A1	Cedar Grove Area Improvements - Includes Cedar Grove Lift Station	Planning
A	1	CRG-A2	Linear Capacity Improvement	Design
A	2	NRG-A2	Hardy Lift Station Improvement and Wet Weather Storage Facility	Design
A	2	NRG-A4	Darien Lift Station Improvements	Design
B	3	WAL-B4	Linear Capacity Improvement	Design
B	2	LOU-B3	Linear Capacity Improvement	Design
B	4	LWW-B2	Linear Capacity Improvement	Design
			I/I Reduction Program	Planning
B	5	NRG-B1	Marjorie Lift Station Improvements	Design

Project Category	SSA Phase	Project Area	Project Description	Project Status
B	2	NRG-B2	Pine Hill Lift Station Improvements	Design
B	5	NRG-B3	I/I Reduction Program	Planning
C	3	WAL-C2	Bickham Bayou Lift Station Improvement	Design
C	1	CGR-C2	Included in analysis for CGR-A1	Planning
C	1	CGR-C4	Included in analysis for CGR-A1	Planning
C	2	LOU-C6	Included in analysis for LOU-A3	Planning
C	5	NRG-C16	Havanna Lift Station Improvement	Design

In addition to the capacity projects listed, approximately 43 areas of interest have been identified for SSO monitoring. Many of these additional SSO monitoring areas are impacted by adjacent capacity projects, areas which have also exhibited dry weather conveyance issues revolving FOG and or debris related SSO occurrences, or other historical data has been identified that merits additional monitoring to confirm the presence of wet weather-related issues.

3.5 Construction Standards and Specifications

The 2021 Edition of the Standard Specifications for Infrastructure Improvements and 2021 Detail Standard Plans are being used in delivering projects that are being designed in Year 9. These documents will be used for new Consent and Non-Consent Decree projects and will continue to be updated as part of the City's efforts associated with continued improvement.

During the Year 8 reporting period the City transitioned to Engineers Joint Contract Documents Committee (EJCDC) Engineering Agreements and is utilizing them for new agreements. The City is continuing to transition toward utilization of the EJCDC General Conditions and Construction Documents. The EJCDC documents are expected to provide improved consistency in executing projects. It is anticipated that EJCDC construction documents will be available for use on future projects beginning in 2024.

After a detailed review was completed in Year 8, the City is currently utilizing updated Standard Specifications for Infrastructure Improvements and Detail Standard Plans. The Technical Specifications are being converted to Construction Specification Institute (CSI) format as part of the updates. This has improved the consistency and clarity of the specifications in addition to updating technical content. The City implemented a Standards and Specifications Committee to

continue the process of keeping its Standard Specifications and Details current and to consider proposed modifications.

A website is being developed on the City's Water and Sewerage Division's website and will make these specifications available in the Year 10 reporting period.

3.6 Capacity, Management, Operations, and Maintenance

The following information is a summary of activities conducted during the reporting period to demonstrate compliance with the CMOM program. This program aims at improving the ability of the utility to manage its separate sewer system and ultimately reduce the occurrence of sewer overflows and maintain reliable wastewater service.

3.6.1 Collection System Management

A summary of items related to management of the collection system is provided below.

3.6.1.1 Legal Authorities

Legal Authorities are in place to effectively manage and operate the Wastewater Collection and Transmission System (WCTS). These include several that are mandated as part of existing National Pollutant Discharge Elimination System (NPDES) Permits for the North Regional and Lucas WWTPs and others that enhance the management and source control of FOG. The City's Sewer Use Ordinance (SUO) is embodied within the City's Code of Ordinances (COO), Part II, Chapter 94 Utilities. These ordinances generally provide the authority to do the following:

- Charge fees to all users of the sewer system, whether they reside within the City limits.
- Provide details for rate structures.
- Enter into agreements with communities outside the City limits for wastewater services.
- Maintain the approved pretreatment program pursuant to 40 C.F.R Part 403 and NPDES permits.
- Define enforcement mechanisms for Pretreatment, FOG and Private I/I Programs.
- Define prohibited discharges.
- Define Public/Private responsibilities.
- Provide guidance for new connections.
- Define fees/penalties for failure to abide by the requirements.

During the reporting period, no significant changes were made to the SUO. The City's COO included within the CMOM Plan in 2015 is still current.

3.6.1.2 Organizational Structure

Operation and Maintenance of the WCTS remains organized under the Department of Water & Sewerage. With the reorganization of the City Engineering & Environmental Services Department mentioned in Section 2.1, the Department of Water and Sewerage is now organized into six (6) divisions: Administration, Customer Service, Environmental Services, Water Purification, Wastewater, and Field Operations.

3.6.1.3 Pre-treatment Program

The Pretreatment Program is mandated by EPA through the NPDES permits issued to WWTPs. The City operates a Pretreatment program in accordance with the requirements found in the Code of Federal Regulations (CFR) Title 40 Part 403 and the General Pretreatment Regulations from Louisiana Administrative Code (LAC) Title 33IX, Subpart 2, Chapter 61. The City's program was approved by EPA on January 11, 1985 and incorporated into the City's Code of Ordinances (COO) Chapter 94. The FOG Program is administered by the Environmental Services Office within the Engineering and Environmental Services Department. The City's Pretreatment program is developed to achieve the following objectives (COO 94-111):

- To prohibit the introduction of pollutants into the Publicly Owned Treatment Works (POTW) that will interfere with the operation of the POTW or contaminate the resulting sludge.
- To prohibit the introduction of pollutants into the POTW that will pass through the POTW, inadequately treated, into receiving waters, atmosphere, or otherwise be incompatible with the POTW.
- To protect both POTW personnel who may be affected by wastewater and sludge in the course of their employment and the general public.
- To enable the City to comply with its NPDES and Louisiana Pollution Discharge Elimination System (LPDES) permit conditions, sludge use and disposal requirements, and any other federal or state laws to which the POTW is subject.
- To improve the opportunity to recycle and reclaim wastewater and sludges from the system.

- To monitor and regulate the generation, transportation, and disposal of industrial and hazardous waste.
- To enforce applicable EPA categorical standards.
- To reduce the health and environmental risk of pollution caused by discharges.

The pretreatment program considers four (4) different users: Significant Categorical (CIU), Significant Non-Categorical (SIU), Non-Significant (NIU) or General (GIU). The City previously issued a Master List of Significant Industrial Users (Categorical and Non-Categorial) with the City's CMOM Plan Submittal. An updated Master List of Industrial users is provided in Attachment 1.

During the reporting period a total of 39 permits were active under the City's Pretreatment Program. These permits define effluent limits, transferability, penalties, slug discharges, and BMPs. CIUs and SIUs are required to submit reports quarterly, NIU's twice per year, and GIUs annually. Reporting requirements were satisfied for each of the Industrial users during the Year 9 reporting period. A total of 30 Notice of Violations (NOVs) were issued by the City during the reporting period.

3.6.1.4 FOG Program

The FOG Program, through training, outreach, inspections, and enforcement encourages non-domestic sources to limit the discharge of FOG into the sanitary sewer system. As Part of the overall NPDES-mandated pretreatment requirements, COO Sec. 94-119 limits discharge of FOG components to no more than 100 mg/L. All Food Service Establishments (FSE) must obtain a permit to discharge wastewater into the sanitary system. Complete program details are outlined in the City Policy for Grease Interceptors originally approved by EPA in 1995 and included in the CMOM Plan issued to EPA and LDEQ in 2015. The FOG Program is administered by the Environmental Services Division within the Department of Water & Sewerage.

During the Year 9 reporting period there were a total of 570 permitted FSEs. A total of 1,861 compliance inspections were completed and resulted in a total of 211 NOVs issued.

Additional FOG preventative maintenance activities completed by the City during the Year 9 reporting period includes the addition of the BioGon Enzyme and Liberator Block. Table 3-15

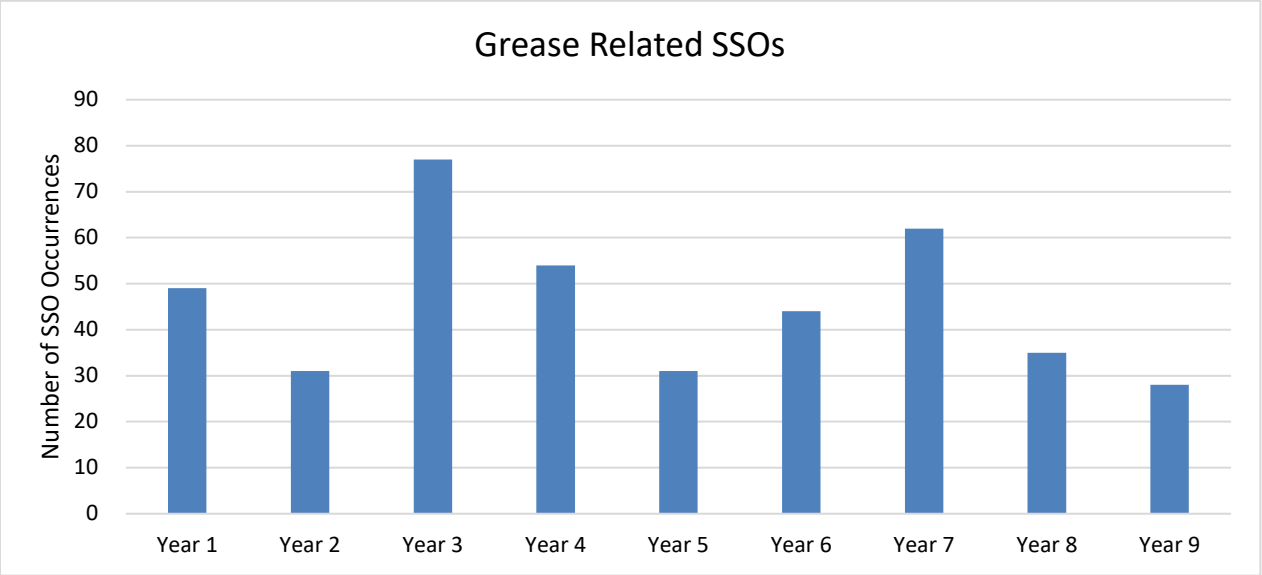
provides a summary of the locations where BioGon Enzyme and Liberator Block were introduced into the sanitary sewer system. These locations are the same as reported during Year 8.

Table 3-15: FOG Enzyme Additive Locations

Quarter Section	Manhole Number
Y-52	MH14
Z-57	MH7
CC-57	MH7 and MH47
KK-47	MH09, MH21, MH24, MH25, and MH26
V-55	MH08
S-52	MH04
Q-51	MH26
JJ-40	MH01
DD-40	MH20
Y-47	MH41
Z-56	MH04
W-54	MH08
W-55	MH39

FOG contributed to a total of 28 SSO occurrences during the reporting period. Figure 3-1 provides a summary by of the FOG related SSO occurrences since the beginning of the Consent Decree program. The five-year rolling average for years 1-5 was 48.4 grease related SSOs/year, 47.4 grease related SSOs/year for years 2-6 (which represents an approximate 2% reduction), 53.6 grease related SSOs/year for years 3-7 (which represents an approximate 13% increase), 45.2 grease related SSOs/year for years 4-8 (which represents an approximate 16% reduction), and 40.0 grease related SSOs/year for years 5-9 (which represents an approximate 12% reduction).

Figure 3-1: Grease Related SSOs by Consent Decree Year



As part of Public Education and Outreach, the Can It Shreveport web page (www.canitshreveport.com) was linked to the Clean Water Shreveport website. This webpage was developed to provide education including what generates FOG, how FOG entry into the collection system causes problems with conveyance, and the negative environmental impacts this type of activity causes due to SSOs. Additional materials were distributed for outreach, and outreach was increased through social media in Year 9, as well. Information related to FOG generation and how to address it is also posted on the Clean Water Shreveport social media outlets.

3.6.1.5 Private I/I Program

The City has in place a set of seven (7) legal ordinances (COO 94-5, 9, 11, 17, 117, 118, and 168) that allow the City to enforce the resolution of private lateral defects. During the reporting period there were no modifications, additions, or omissions to these legal ordinances. When a private service lateral issue is identified through field investigations, service request and/or customer complaints, W&S field operations staff is notified, and an investigation is completed. If the crew confirms the presence of lateral defect that is presenting a threat to public health, the Environmental Services Department is notified, and a 10-Day letter requiring resolution is issued. During the Year 9 reporting period a total of 62 letters were issued to private property owners due to lateral defects that were deemed a threat to public health.

In addition, the City is evaluating policy and legal issues that may need to be considered and addressed by the City to facilitate mitigation of lateral defects on private property during the Year 9 reporting period. This includes considering potential private property lateral program costs and funding considerations.

3.6.1.6 Information Management Systems (IMS)

The City continues to maintain Information Management Systems (IMS) which provides tools for tracking collection systems' performance, service requests, work orders, and aids in tracking the effectiveness and efficiency of O&M activities. The City continues to enhance its computer-based tools to manage and track collection system data. Standard operating procedures are evaluated to ensure accurate documentation of pertinent collection system data and staff members' appropriate use of the IMS tools. Collectively, IMS tools give staff members a well-defined, detailed understanding of how the collection system performs by monitoring, analyzing, and measuring their performance. The City continued to maintain the following IMS systems during the reporting period:

- ArcGIS – Geographic Information System (GIS)
- CityWorks – Computerized Maintenance Management System (CMMS)
- Sanitary Sewer Overflow Database (MS Access database through Environmental Services)
- FOG Compliance (MS Access database through Environmental Services; however, the City is currently transitioning to a MyGovernmentOnline application)
- SCADA (Various systems managed through Water & Sewerage)

3.6.1.6.1 Geographic Information Systems (GIS)

The City's sanitary sewer system GIS is comprised of multiple feature classes (gravity sewers, manholes, lift station, force mains, valves, lateral lines, etc.) to reflect the current inventory of wastewater system components. Each of these requires review and updates, where necessary, to reflect the changed condition following completion of a construction project. The City continued updating its GIS during the Year 9 reporting period to reflect post-construction records following Phase 2 RMP projects, Critical Projects, and updates from the City's "Hot Spot" Sewer Cleaning and CCTV Program. During the Year 9 reporting period, a total of 40 CCTV PACP databases were updated and six (6) Phase 2 RMP projects were completed.

The City has continued to advance the use of GIS through the development of a variety of maps, viewers, and ArcGIS Online (AGOL) dashboards to expand access to key data sources such as SSA data and SSO tracking. AGOL Dashboards including the following are now available:

- SSO Dashboard
- Smoke Testing Dashboard
- FOG Dashboard
- Sewer Inspections – Pipeline Assessment and Certification Program (PACP) Dashboard
- Manhole Inspections – MACP Dashboard
- Lift Station One-Pump and Active Bypass List

3.6.1.6.2 CityWorks

CityWorks was implemented during 2016 and continues to serve as the CMMS for the Department of Water & Sewerage. When questions, complaints, and/or concerns are received from within the City or from the public, a service request is generated and evaluated within the software. During the Year 9 Reporting period, a total of 5,841 service requests and 33,543 work orders were input, evaluated and responded to within CityWorks.

During the Year 9 reporting period, the City rolled out an updated Cityworks training program with the goal of helping staff across Water & Sewerage and on the Clean Water Shreveport program improve the usage of the Cityworks platform. The Water & Sewerage department began leveraging project management functionality in Cityworks to track work activities completed on projects and in response to storm events. The City has begun developing revised reports to streamline reporting of activities from Cityworks, an early focus area has been on updating the way pavement repairs are tracked and reported on within the City.

3.6.1.6.3 Sewer AI - Pioneer

During the Year 9 reporting period, the City deployed Sewer AI Pioneer CCTV database management system. Pioneer will serve as the specific location to host all CCTV video files for the City of Shreveport. During the Year 9 reporting period, the City was able to deploy and train staff on the typical use of the software and how it can be used to view existing CCTV videos in addition to the NASSCO PACP assessments. During the Year 9 reporting period, the following

data sets were incorporated into Pioneer: SSA Phase 1 and SSA Phase 2- Post Construction CCTV, SSA Phase 3, SSA Phase 4 and a partial loading of SSA Phase 5. Historical CCTV video that the City Field Operations team captured, as well as CCTV video from the Hot Spot Cleaning and Annual CCTV programs, are planned for implementation during Year 10.

3.6.2 Collection System Operations

A summary of items related to operation of the collection system is provided below.

3.6.2.1 Sanitary Overflow Response Plan (SORP)

The City maintains a Sanitary Sewer Overflow Response Plan (SORP) Standard Operating Procedure (SOP). This SORP SOP was initially presented within the CMOM plan issued to EPA and LDEQ in 2015. The SORP SOP provides guidance to Department of Water & Sewerage staff on how to respond, document and confirm that SSOs are properly reported to the appropriate regulatory authorities. W&S staff are responsible for documenting the following:

Building Back-up	Action Taken
Backup caused by Public Sewer	Receiving Body of Water
Cause of Backup	Gallons Recovered
Property Damage	Gallons Lost

Following the completion of the SSO investigation, the Environmental Services Division is notified and able to access the information identified above. The Environmental Services Division maintains a Microsoft Access database and reports to LDEQ monthly for SSO occurrences tributary to the Lucas WWTP and the North Regional WWTP. If lost volume exceeds 10,000 gallons or greater, the City has a media notification procedure that includes a press release notifying the general public of the occurrences.

The SORP SOP is currently in the process of being updated to better reflect the reposit of data into Cityworks. The new process will guide W&S staff on the procedures to respond, evaluate, coordinate, address and document these activities using the Cityworks CMMS.

3.6.2.2 Sanitary Sewer Overflow (SSO): Year 9 Overview

During the Year 9 reporting period, a total of 191 SSOs were reported to LDEQ. This is an approximate increase of 48% in reported SSOs when compared to the 129 SSOs reported in Year 8. However, this represents an 18% reduction compared to the 5-year rolling average for Consent Decree Years 4-8.

The primary reason that the number of SSOs reported in Year 9 was higher than the number reported in Year 8 was due to a significant increase in the amount of rainfall that occurred in Year 9 (63.81 inches) when compared to Year 8 (46.10 inches). Year 9 was the second wettest year with several events exceeding the 2-year recurrence level of control for SSOs being implemented by the City. Of the total Year 9 SSOs, 83 or 43-percent were due to wet weather. Twenty-four SSOs, or 19 percent of the total Year 8 reported SSOs were due to wet weather. It is important to note that construction of capacity improvement projects directly related to mitigating wet weather SSOs began in Year 9 with the first of those projects expected to be completed by the end of 2023. Additional capacity related projects directly related to mitigating wet weather SSOs are in design and are being prioritized for completion as funding becomes available.

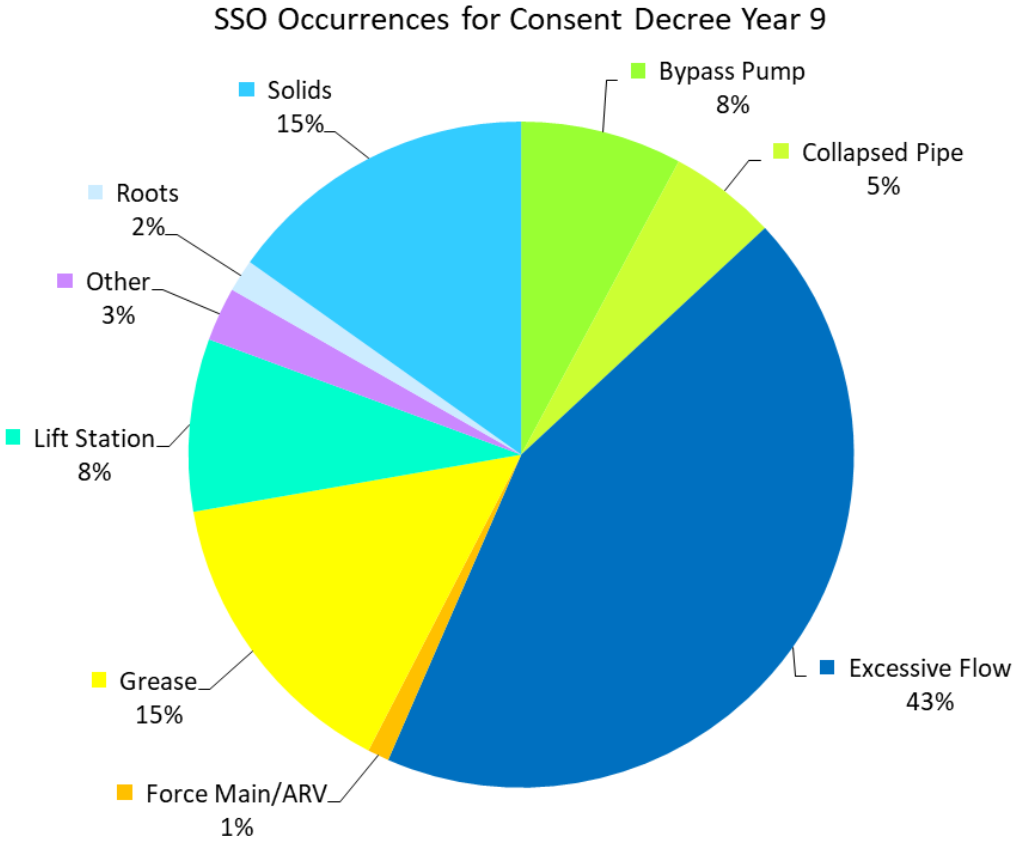
One hundred and eight (108) or 57 percent of the SSOs that occurred in Year 9 were dry weather SSOs. When reviewing the 5-year rolling average, this is a significant reduction in dry weather SSOs. It is evident that the City continues to see a positive impact through targeted SSO mitigation initiatives such as the "Hot Spot" Cleaning and CCTV Program.

Table 3-16 and Figure 3-2 provide a summary of the causes contributing to SSO occurrences during the Year 9 reporting period. An itemized list of Year 9 SSOs is included in Attachment 3.

Table 3-16: Year 9 SSO Summary

Weather Type	Wet Weather	Dry Weather							
SSO Type	**Excessive Flow**	**Bypass Pump**	**Collapsed Pipe**	**Force Main/ARV**	**Grease**	**Lift Station**	**Other**	**Roots**	**Solids**
Total	83	15	10	2	28	16	5	3	29
% of Year 9 SSOs	43%	8%	5%	1%	15%	8%	3%	2%	15%

Figure 3-2: SSOs Occurrences for Consent Decree Year 9



3.6.2.3 Sanitary Sewer Overflow (SSO): 5-Year Trends Analysis

Based on Consent Decree requirements defined in Part VIII. *Reporting Requirements,* paragraph 60 *Annual Report,* trends analysis considering number, volume, duration, and cause of Shreveport's SSO must be completed considering a five (5)-year rolling period and updated annually considering the previous twelve (12) month period.

Table 3-17 provides a summary of SSO occurrences by year with 5-year rolling averages. The 5-year rolling average for the number of SSO occurrences was 251.8 SSOs per year in Years 2-6, increased to 254.2 SSOs per year in Years 3-7, and decreased to 234.2 SSOs per year considering Years 4-8. The 5-year rolling average in Years 5-9 decreased to 226.8 SSOs per year. The 5-year rolling average for volume lost was 493,120 gallons per year considering Years 4-8, and an approximate reduction of 19% to 400,315 gallons per year in Years 5-9. The trend of dry weather SSO occurrences in Years 5-9 decreased compared to the previous 5-year rolling average for Years

4-8. Wet weather SSO occurrences in Years 5-9 increased compared to the previous 5-year rolling average for Years 4-8 due to the significant amount of rainfall that occurred in Year 9.

Table 3-17: 5-Year Trends Analysis: Wet Weather vs. Dry Weather SSO Occurrences

Consent Decree Year	Wet Weather SSO Occurrences	Dry Weather SSO Occurrences	Total SSO Occurrences	Total Volume Lost (gal)
Year 1	26	154	180	201,368
Year 2	128	102	230	1,000,530
Year 3	10	219	229	70,944
Year 4	33	195	228	736,363
Year 5	102	193	295	423,402
Year 6	53	224	277	426,828
Year 7	63	179	242	826,357
Year 8	24	105	129	52,649
Year 9	83	108	191	272,338
Rolling Average: Years 1-5	**59.8**	**172.6**	**232.4**	**486,521**
Rolling Average: Years 2-6	**65.2**	**186.6**	**251.8**	**531,613**
Rolling Average: Years 3-7	**52.2**	**202.0**	**254.2**	**496,779**
Rolling Average: Years 4-8	**55.0**	**179.2**	**234.2**	**493,120**
Rolling Average: Years 5-9	**65.0**	**161.8**	**226.8**	**400,315**

The Year 9 SSO results shown in Table 3-17 continue to support the City's approach to strategically focus its efforts on understanding the causes of SSOs in its system and implementing capital and maintenance programs designed to specifically mitigate those causes.

SSO occurrences by type were also evaluated as part of the 5-year Trends Analysis. Table 3-18 provides a summary of each type of SSO and associated trends analysis. The following is a brief discussion of trends associated with the type of SSO occurrences.

Table 3-18: 5-Year Trends Analysis: SSO Occurrences by Type

Consent Decree Year	Dry Weather SSOs								Wet Weather SSOs
	Bypass Pump	Collapsed Pipe	Force Main/ARV	Grease	Lift Station	Other	Roots	Solids	Excessive Flow
Year 1	4	18	6	49	13	17	19	28	26
Year 2	2	15	7	31	9	8	5	25	128
Year 3	1	33	5	77	15	18	4	66	10
Year 4	1	49	1	54	10	12	8	60	33
Year 5	3	53	1	31	14	12	9	70	102
Year 6	12	40	0	44	36	40	5	47	53
Year 7	16	24	2	62	26	10	5	34	63
Year 8	4	12	1	35	8	10	7	28	24
Year 9	15	10	2	28	16	5	3	29	83
Rolling Avg: Years 1-5	**2.2**	**33.6**	**4.0**	**48.4**	**12.2**	**13.4**	**9.0**	**49.8**	**59.8**
Rolling Avg: Years 2-6	**3.8**	**38.0**	**2.8**	**47.4**	**16.8**	**18.0**	**6.2**	**53.6**	**65.2**
Rolling Avg: Years 3-7	**6.6**	**39.8**	**1.8**	**53.6**	**20.2**	**18.4**	**6.2**	**55.4**	**52.2**
Rolling Avg: Years 4-8	**7.2**	**35.6**	**1.0**	**45.2**	**18.8**	**16.8**	**6.8**	**47.8**	**55.0**
Rolling Avg: Years 5-9	**10.0**	**27.8**	**1.2**	**40.0**	**20.0**	**15.4**	**5.8**	**41.6**	**65.0**
Difference in Rolling Average From Years 4-8 to 5-9	**2.8**	**-7.8**	**0.2**	**-5.2**	**1.2**	**-1.4**	**-1.0**	**-6.2**	**10.0**
Rolling Average (% Increase/Decrease) From Years 4-8 to 5-9	**39%**	**-22%**	**20%**	**-12%**	**6%**	**-8%**	**-15%**	**-13%**	**18%**

Note: The SSO Occurrence type "other" includes all other types of SSO occurrences not accounted for in the categories listed. While there are a variety of reasons, these generally include unknown causes of occurrence and/or disconnected sewer services.

- **Bypass Pump:** The City observed an increase in the number of SSO occurrences associated with bypass pumps from Year 8 to Year 9, similar to the amount reported in Years 6 and 7, due to malfunction of bypass pumps used during sewer main repair/rehabilitation work or to keep lift stations in poor condition operational. The City has been focused on fixing its lift stations to prevent malfunctions requiring them to be placed on bypass. As part of the City's Critical Infrastructure Projects in Year 9, seven (7) lift stations that the City had on bypass moved into construction, with an additional four (4) lift stations currently in design to reduce the number of bypasses.
- **Collapsed Pipe:** During the Year 9 reporting period, the number of SSO occurrences associated with collapsed pipes was the lowest since the Consent Decree Program began and SSO occurrences associated with collapsed pipes has consistently decreased since Year 5. This can be partially attributed to completion of Phase 1 and 2 RMP projects. The implementation of the "Hot Spot" Cleaning and CCTV Program and the continuation of the On-Demand Water and Sewer Rehabilitation contracts throughout Year 9 has also had a significant reduction of SSOs.
- **Force Main / ARV:** Over the last five years of the Consent Decree, only 6 SSOs associated with force main or ARV related issues have occurred. That is significantly less than the 18 SSOs that occurred in the first three years of the City's Consent Decree. The City has replaced significant portions of one of the largest and oldest force mains (Stoner Force Main) to limit the potential for future force main collapses and the associated SSO occurrences. Two other force main projects (Wallace and Cedar Grove force mains) are planned for future rehabilitation.
- **Grease and Solids:** During the Year 9 reporting period, the number of SSO occurrences associated with grease and solids was greatly reduced compared to previous years. This is evidence that the "Hot Spot" Sewer Cleaning and CCTV program is having a positive impact. The City continued to address grease and solids during the Year 9 reporting period through its "Hot Spot" Sewer Cleaning & CCTV program as a targeted effort to mitigate maintenance-related dry weather SSOs. In addition, the City implemented an Annual Sewer Cleaning Program in Year 9. The City also intends to review other CMOM programs related to the control of FOG, as discussed in Section 4.2.
- **Lift Station:** Similar to Bypass Pump category, the City had observed an increase in the number of SSO occurrences associated with lift stations from Year 8 to Year 9 due to equipment malfunction at certain lift stations. The Year 9 amount is still approximately half of the amount

reported in Years 6 and 7. In Year 9, eleven (11) lift stations moved into construction, with an additional twenty-nine (29) lift stations currently in design to address current mechanical, electrical, hydraulic, and operational issues contributing to observed SSOs or reliability issues that, if not addressed, have a high likelihood of causing future SSOs.

- **Other:** The number of SSO occurrences in the "Other" category reduced by half of the amount reported from Year 8 to Year 9 and was the lowest amount recorded since the start of the Consent Decree Program. The "other" category represents SSOs caused by miscellaneous sewer related issues not described by the other categories. A considerable number of these issues in recent years have been determined to be associated with construction defects in sewer service laterals. This is evidence that the "Hot Spot" Sewer Cleaning and CCTV program is having a positive impact.
- **Roots:** Root related SSO occurrences where the lowest reported amount since the Consent Decree Program began. The City continues to implement its root control program as summarized in Section 3.6.3. This is also evidence that the "Hot Spot" Sewer Cleaning and CCTV program is having a positive impact.
- **Wet Weather:** During the Year 9 reporting period, eighty-three (83) wet weather SSO occurrences were reported. This is an increase of 51% when compared to the 5-year rolling average in Years 4-8. It is likely that increased precipitation throughout Year 9 contributed to this. The City of Shreveport saw its 2nd largest precipitation total per Consent Decree Year, with the largest precipitation total occurring during Year 2 when the City reported 128 SSOs related to wet weather events.

  The City has been working to mitigate some of the wet weather SSO locations which activate more regularly. Twelve (12) of the eighty-three (83) wet weather SSOs, approximately fourteen (14%) percent of the total, are associated with the areas planned to be addressed by the Dilg League and the Brookmeade & Querbes SSO Mitigation Projects discussed in Section 3.3. In Year 9, the City identified projects areas to address capacity restricts throughout the collection system that contribute to wet weather SSOs. This information was reported in the 2023 Capacity Assessment Remedial Measures Plan (CARMP) and is summarized in Section 3.4.

3.6.3 Collection System Maintenance

The City's collection system maintenance consists of gravity sewer cleaning, Chemical Root Control (CRC), force main and air release valve inspections, and wastewater treatment plant operation and maintenance. A summary of these items is provided below.

3.6.3.1 Gravity Sewer Cleaning

The Gravity Sewer Preventative Maintenance Program includes routine cleaning and cleaning required per the Consent Decree SSA activities. This cleaning is completed by City staff. According to Consent Decree requirements, the City is responsible for cleaning greater than 15 percent of the City's WCTS annually and 100 percent of the system no later than 84 months following the Effective Date of the Consent Decree. During the first five years of the Consent Decree program, the City attempted to clean 100% of the pipes, rather than just the 15-inch diameter and greater as part of the SSA investigations. In addition to the "Hot Spot" Sewer Cleaning and CCTV Program discussed below, the City began implementing an Annual Sewer Cleaning and CCTV Program during Year 9.

3.6.3.2 "Hot Spot" and Annual Sewer Cleaning and CCTV Programs

The City initiated a "Hot Spot" Sewer Cleaning and CCTV Program in Year 8 to mitigate[1] dry weather SSOs. In Year 9, the City initiated both a "Hot Spot" and Annual Program which combined included approximately 280,000 linear feet of gravity sewer cleaning in addition to CCTV investigation. The Year 9 Programs represented approximately 5 percent of the collection system. These Programs are in addition to sewer cleaning related to the City's ongoing Sewer Cleaning Program. The Year 10 Hot Spot and Annual Programs were developed during Year 9 and combined include approximately 312,000 linear feet of gravity sewer cleaning which began in May 2023 (Year 10).

Table 3-19 provides a summary of sewer cleaning activities since the Effective Date of the Consent Decree and includes SSA cleaning, the City's maintenance activities and the Year 9 "Hot Spot" and "Annual" cleaning through the reporting period.

[1] The term "mitigate," as used throughout this document when discussing sanitary sewer overflows (SSOs), should be understood to mean "reduce the frequency or severity of."

Table 3-19: Summary of Gravity Sewer Cleaning Activities

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
SSA Phase 1	885,851								
SSA Phase 2		481,042							
SSA Phase 3		206,434	646,833	14,705					
SSA Phase 4				685,818	360,839				
SSA Phase 5					245,936	430,046			
City Preventative Maintenance	39,499	298,953	303,714	285,674	319,366	235,237	235,269	415,450	228,913
Hot Spot Cleaning[1]							49,969	241,393	111,941
Annual Cleaning[1]									167,999
Total	**925,350**	**986,429**	**950,547**	**986,197**	**926,141**	**665,283**	**284,232**	**656,843**	**508,853**
% of the Total Collection System	**17.1%**	**18.3%**	**17.6%**	**18.3%**	**17.1%**	**12.3%**	**5.3%**	**12.1%**	**9.4%**

[1] The length shown for Hot Spot and Annual Cleaning in Year 9 includes sections of sewer in Phases 1, 2, 3, 4, and 5. Refer to Table 3-2, Table 3-3, Table 3-4, and Table 3-5 for a breakdown of segment lengths and diameters cleaned during Year 9 through the Hot Spot and Annual Sewer Cleaning and CCTV Programs.

3.6.3.3 Manhole Rehabilitation and Inflow & Infiltration Reduction Program

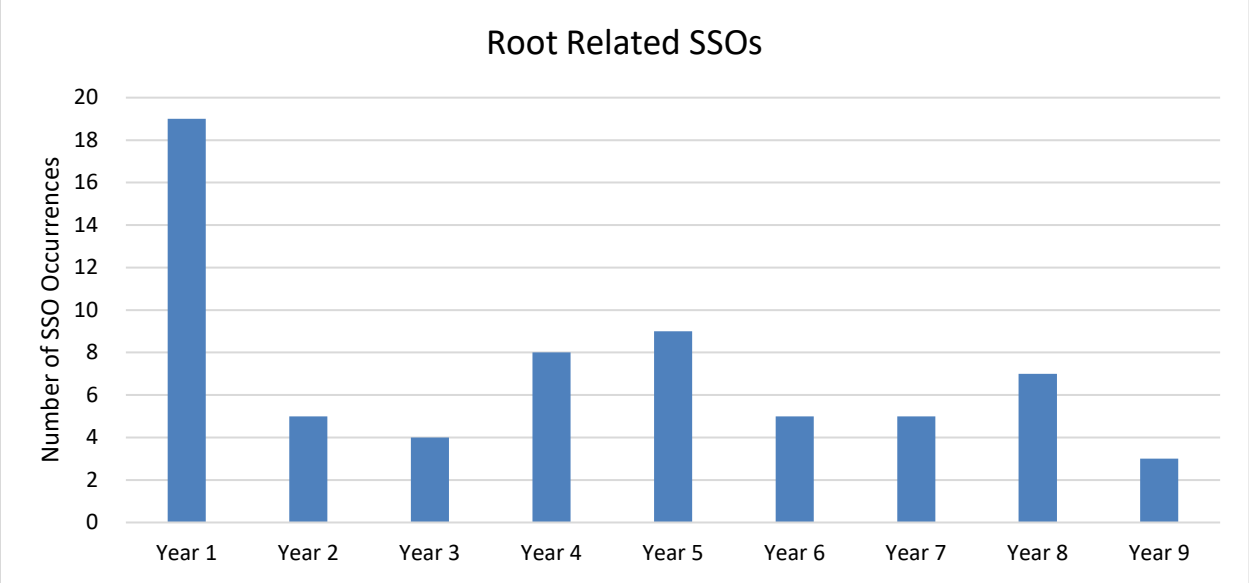
The City's Manhole Rehabilitation and Inflow & Infiltration Reduction program began in Year 8 to rehabilitate manholes in poor condition and address inflow & infiltration issues. The program continued in Year 9 with a total of 48 manholes selected for rehabilitation with Triplex Fiberglass Manhole Liners. These manholes were located in areas difficult to perform traditional excavations, such as high traffic areas, or were in close proximity to other structures or utilities. 27 of the 48 manholes identified for rehabilitation with Triplex Liners were completed during Year 9. The remaining 21 manholes will be completed in Year 10.

Additionally, the City continued installing a "Sewer Sentry" device in some existing manholes at locations where venting is necessary to limit infiltration and inflow and reduce the potential for SSOs. Approximately 100 manhole covers have been fitted with a device to prevent rainwater from entering thru the existing manhole cover pick-holes. The City has updated its standard manhole specifications and details to incorporate "Sewer Sentry" devices and concealed pick-holes into new sewer and rehabilitation projects.

3.6.3.4 Chemical Root Control (CRC) Program

The Consent Decree requires a root control program that includes short term mitigation and routine maintenance of root intrusion and rehabilitation of areas in which root intrusion has caused recurring blockages. The City's CRC program was reinstituted in 2012. The City continues to perform chemical root control on an annual basis as a preventative maintenance measure to reduce root-related SSOs. Chemical treatment is typically applied in the Fall season each year. During the reporting period, a total of 446 gravity sewers (141,961 linear feet) were treated and a total of three (3) root-related SSOs occurred representing approximately two (2) percent of the total SSOs reported for the period. Figure 3-3 below provides an illustration of root related SSO occurrences each of the Consent Decree reporting periods.

Figure 3-3: Root Related SSOs by Reporting Period



3.6.3.5 Force Main / ARV Inspection Program

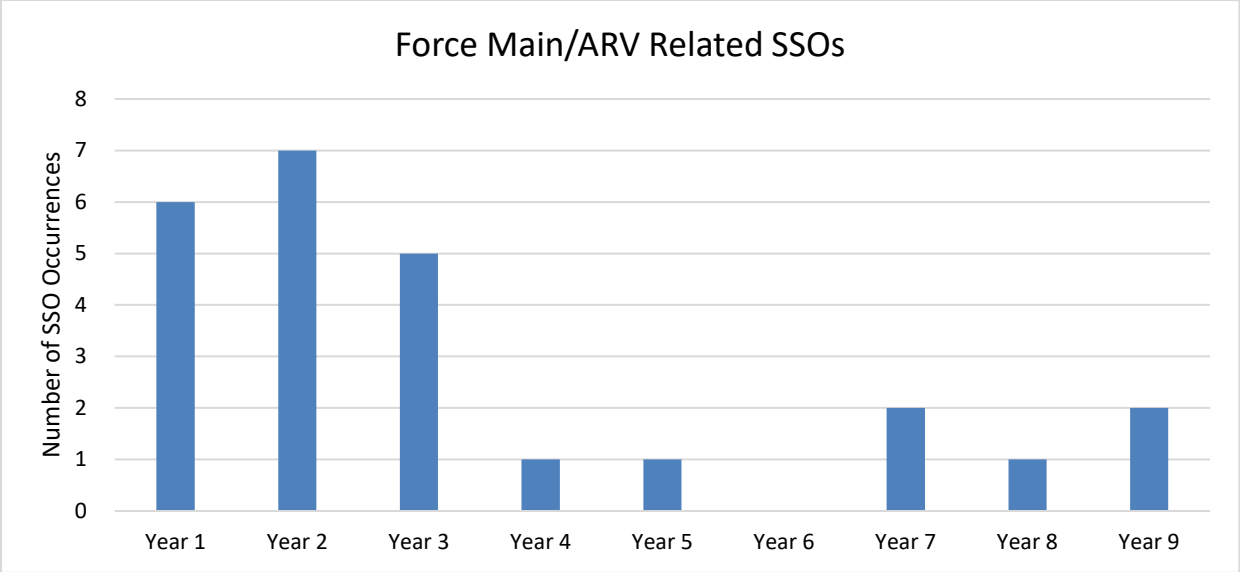
The City's Force Main and Air Release Valve (ARV) inspection program implemented as part of the Consent Decree requirements and issued with the original CMOM plan in 2015. This program generally includes:

- Annual inspection of the force mains which includes walking the full length of the force main and evaluating signs of SSOs or other indications of potential failures, exposed pipe and noting any right-of-way or access issues.
- Performing backflushing of the ARVs to remove internal debris; and replace defective ARVs.

- Tracking maintenance activities for force main and ARV inspections.

During the reporting period, each of the City's force mains and ARVs were inspected. There were two (2) recorded SSO occurrences caused by force main failures representing one (1) percent of the total during the reporting period. Figure 3-4 illustrates force main and ARV related SSO occurrences that have occurred during each of the Consent Decree reporting periods.

Figure 3-4: Force Main/ARV Related SSO Occurrences



3.6.3.6 On-Demand Water and Sewer Rehabilitation Services

The City continues to utilize its On Demand Water and Sewer Rehabilitation Contracts to maintain its sanitary sewer collection system. Approximately 209 work orders were issued to On Demand contractors in Year 9 with approximately 175 of these work orders completed to date. Work orders ranged from repairs to existing manholes, force mains and sewer mains. The City authorized approximately $8.5 million worth of work to On Demand contractors in Year 9. The City intends to continue its utilization of On Demand Contracts during Year 10.

3.6.3.7 Wastewater Treatment Plant Operations & Maintenance Program

The City implemented the Wastewater Treatment Plant (WWTP) Operations & Maintenance (O&M) Program with the initial CMOM Plan submittal in 2015. The WWTP O&M includes a total of 50 SOPs. Through the reporting period there have not been significant modifications to

SOPs included within the WWTP O&M program. The SOPs generally include coverage of the following:

- Administrative Responsibilities
- Operations Duties & Responsibilities
- Operations Record Keeping
- Laboratory Duty Responsibilities
- Plant Control Testing & Sampling Requirements
- Process Equipment Start-up/Shut Down
- Grit Removal O&M
- Mixing & Feeding O&M
- Safety
- Sewer Lift Station O&M
- Sludge Farm Start-up and Shut-down
- Sludge Farm O&M

During the Year 9 reporting period, Discharge Monitoring Reports (DMRs) were issued monthly and Toxicity Reports were issued quarterly to LDEQ to meet LDPES permit requirements for both the Lucas (Permit # LA0041394) and North Regional (Permit # LA0042188) WWTPs.

3.7 Citizen Engagement & Constituent Issue Management

The City continued public outreach and constituent issue resolution through the Year 9 reporting period. The software platform ZoHo was discontinued as incoming calls for constituent issues have decreased significantly. The City implemented the software SeeClickFix as a method to manage remaining and new constituent issues.

The main focus of most public outreach activities during Year 9 included social media outreach, website development, public outreach meetings, semi-annual reports, public and media coverage concerning ongoing construction projects and other program initiatives. The continued use of social media platforms like Facebook, Instagram, and LinkedIn supported public outreach initiatives including Critical Project Updates, educational content on the City's wastewater

infrastructure and how to reduce Sanitary Sewer Overflows by providing information on fats, oils, and grease.

Notable outreach days include World Water Day and Water Week where the PMC and the City of Shreveport visited local schools to educate students on the water cycle, saving water and fats, oils, and grease awareness. Other community engagement activities feature a public outreach meeting at Querbes Recreation Center where citizens were informed about critical projects and their impact on the wastewater system.

The City is also in the process of implementing web-based software, QAlert, that will allow the City to track, manage, and resolve customer requests.

4.0 CONSENT DECREE – YEAR TEN (10)

The major objectives to be completed during the next reporting period (Year 10: May 13, 2023 to May 12, 2024) are discussed below. This list of objectives should not be interpreted as an explanation of all activities but rather a summary of the major objectives anticipated to be completed. In addition, it is important to note that the planned activities have been developed to align with and support the overriding goal and objective of the Consent Decree to mitigate sewer overflows. Activities necessary for the City to operate and maintain reliable wastewater and water utilities have also been prioritized. The activities relate directly to many specific Consent Decree requirements even though a shift away from the defined "find and fix" method of addressing all defects in the collection system through a phase-by-phase approach is required.

4.1 Regulatory Coordination

The City will continue to seek a Consent Decree Modification working cooperatively and collaboratively with USDOJ, EPA, and LDEQ to establish an affordable Consent Decree program for its utility customers.

4.2 Sanitary Sewer Assessment - Phase 5

The City will complete additional SSA activities in the Phase 5 area during the Year 10 reporting period. These activities will include NASSCO MACP manhole inspections and NASSCO PACP CCTV and sewer cleaning of select gravity mains throughout the Phase 5 SSA Area. During the Year 10 reporting period, approximately 1,050 manholes are planned for inspection and 164,000 lineal feet of gravity sewer CCTV inspections to be completed. This work is being completed with the City's Annual Sewer Cleaning Program which is further discussed in Section 4.3.2 below. The City will begin development of the Phase 5 SSA report for all City Subbasin areas that have been completed.

4.3 CMOM Programs

The City will continue to evaluate opportunities to further achieve the goal of SSO reduction through implementation of its CMOM programs. Planned activities during the Year 10 reporting period are summarized below.

4.3.1 Update of Geographical Information Systems (GIS)

The City will continue to update its GIS to reflect field investigations performed through SSA activities and construction record information associated with Phase 2 RMP projects, the Critical Projects Program and updates identified through the various City cleaning programs. Updates to the wastewater GIS layers as well as the dashboards used to track and provide access to inspection inventories will be maintained through Year 10.

4.3.2 "Hot Spot" Cleaning and CCTV Program

The City will continue implementation of the "Hot Spot" Cleaning and CCTV Program. A description of the Year 10 "Hot Spot" Cleaning and CCTV Program was submitted to EPA in January 2022. In total, approximately 148,000 linear feet of gravity sewers are included in the 2023-2024 "Hot Spot" Cleaning and CCTV Program. Cleaning and CCTV activities began during the Year 10 reporting period in May 2023.

4.3.3 Annual Cleaning and CCTV Program

The City developed the 2023-2024 Annual Cleaning and CCTV Program for the WCTS based on pipe materials, age, diameter, sewer system maintenance records, and remaining Consent Decree obligations. The approximately 164,000 linear feet of gravity sewers included in the 2023-2024 Annual Cleaning and CCTV Program represent approximately 3.0% of the collection system. This is in addition to the sewers that are part of the 2023-2024 "Hot Spot" Cleaning and CCTV program. Cleaning and CCTV activities began during the Year 10 reporting period in May 2023.

4.3.4 Updates to City's Computerized Maintenance Management Systems (CMMS)

The City plans to continue to develop workflows in its CMMS to track capital project activities, cleaning activities, and CCTV inspections. In addition, the City plans to continue developing interactive dashboards to integrate data collected through field investigation activities to support strategic data-driven decisions by management staff. This and other operational data will be displayed through management reports on demand and used to plan and prioritize utility operational and program activities. The City also plans to implement regular CityWorks training sessions for its utility staff.

4.3.5 Review of FOG Program

The City will continue to evaluate the effectiveness of existing FOG related program activities including software, staffing, and existing SOPs during Year 10. The City will continue to evaluate program activities using the FOG dashboard developed during Year 7. The effectiveness of public outreach and education initiatives, FOG enzyme procedures and key performance indicators will continue to be assessed.

4.3.6 Review of Sewer Overflow Response Plan (SORP)

The City intends to continue review of its existing SORP SOP to identify where improvements might be needed and opportunities for correlating reporting of SSOs with hydraulic model results. The SORP SOP was written prior to the acquisition of Cityworks as the CMMS for the City and process efficiencies may be obtained through an update to the SOP.

4.3.7 Rain Gauge Installation

The City intends to procure and install rain gauges to collect more detailed and accurate data on rainfall intensity and totals throughout its service area. This will provide the City with improved visibility into the recurrence interval and duration of storm events causing wet weather issues and will allow for more focused and efficient response measures to mitigate wet weather related SSOs.

4.3.8 Review of Private I/I Program

The City plans to continue evaluating policy and legal issues that may need to be considered and addressed by the City to facilitate mitigation of lateral defects on private property. This includes considering potential private property lateral program costs and funding considerations.

4.4 Critical Infrastructure Projects Program

The City will continue to deliver the current portfolio of Critical Projects, as presented in Section 3.3.3, that were selected to mitigate SSOs and maintain reliable utility service by addressing known facility and operational issues within the City's wastewater and water utilities. However, it is likely that rampant inflation associated with the current economic climate will drive project costs up. In addition, the City may continue scoping and developing additional Critical Projects through continued capital planning activities which will focus projects on SSO mitigation, compliance, and maintaining reliable wastewater and water utility systems.

As discussed in Section 2.3, the City is currently exploring funding opportunities that could supplement its currently available funding and enable these projects to be completed. If additional funding becomes available, the City plans to use an Integrated Planning Approach to select projects for further implementation and construction. The approach will allow the City to consider all of its compliance and utility obligations, including the City's obligations to provide reliable water service. As stated previously, detailed design and construction of all of the City's project identified in this report, as well as others that may be identified in future years, will be dependent upon financial assistance from federal and state agencies, and the lack of such assistance is expected to delay program implementation.

4.5 Capacity Projects Program

The City will continue planning, design and construction of the portfolio of capacity related projects and initiatives that were identified by the CARMP and listed in Table 3-14 above. These 23 projects focus on areas that were shown to have capacity restrictions that are related to wet weather related SSO occurrences and predicted by the hydraulic model to degrade level of service during the 2-year wet weather event. In addition, the approximately 43 additional areas identified as potential areas of concern will be monitored for SSO activity during both dry and wet weather conditions during the Year 10 reporting period.

4.6 Condition Assessment Program

The City plans to continue assessing its wastewater system during the Year 10 reporting period as described below. Condition assessments will be completed through ongoing activities in the following five (5) programs.

4.6.1 Collection System Assessment Program

The City will use its prioritized approach for inspection and assessment of its gravity sewer mains and manholes in 2023 and beyond. In Year 10, the City plans to collect GPS coordinates and complete visual inspections of manholes within the Martin Luther King, Lower Cross Lake, Agurs, and Cross Bayou subbasins. In total, approximately 1,050 manholes are anticipated to be inspected and GPS-located. Upon completion of this work, the City will have conducted GPS locates and inspections of approximately 13,000 manholes in its collection system since 2014.

4.6.2 Sewer Risk and Rehabilitation Program

The City will continue to develop and deploy a sewer risk and rehabilitation program. The risk and rehabilitation program will support development and prioritization of condition remedial measures to address the highest ranked assets at risk of structural failure. The risk and rehabilitation program is anticipated to be developed by October 2023 and will be maintained and updated once the initial deployment is completed.

4.6.3 Lift Station Assessment Program

The City will continue to routinely assess its lift stations to determine if other remedial actions are required.

4.6.4 Force Main Assessment Program

The City will continue to routinely assess its force mains to determine if other remedial actions are required by developing and maintaining a database of information regarding force main pipe condition data.

4.6.5 Wastewater Treatment Plant (WWTP) Assessment Program

The City will continue to routinely assess its wastewater treatment and residuals facilities to determine if previously identified projects, or others identified in subsequent assessments, require action to maintain reliable operations or compliance with the City's LPDES permits. The City will also continue development of a Supervisory Control and Data Acquisition (SCADA) Master Plan to identify needed improvements along with costs and a timeline associated with implementing SCADA upgrades.

ATTACHMENT 1 – INDUSTRIAL USERS OF THE PRE-TREATMENT PROGRAM

Industrial Users of the Pre-Treatment Program
Year 9 Summary

Count	Facility Name	Address	City	State	Zip code
1	Alfasigma USA, Inc. Claiborne	2008 Claiborne Avenue	Shreveport	LA	71103
2	ALSCO	5000 Hollywood Ave	Shreveport	LA	71109
3	Benteler Steel/Tube Manufacturing Corp.	11650 Hwy. 1	Shreveport	LA	71115
4	Calumet Lubricants & Waxes, L.L.C.	3333 Midway	Shreveport	LA	71133
5	CB&I	740 North Market	Shreveport	LA	71107
6	Certainteed	620 Aero Drive	Shreveport	LA	71107
7	Christus Schumpert Highland	1453 E. Bert Kouns	Shreveport	LA	71105
8	Crown Health Care Laundry Services	3305 Mansfield Road	Shreveport	LA	71103
9	Dr. Reddy's Laboratory	8800 Line Avenue	Shreveport	LA	71106
10	Energy Solutions (US) LLC	5677 North Industry Road	Shreveport	LA	71107
11	Frost Industries	5320 Greenwood Road	Shreveport	LA	71109
12	Frymaster	8700 Line Avenue	Shreveport	LA	71106
13	Integrated Power Services	1245 North Hearne Avenue	Shreveport	LA	71107
14	International Paper	1212 Tolmak Road	Shreveport	LA	71107
15	Jones Environmental, Inc. Monkhouse	5112 Monkhouse Dr.	Shreveport	LA	71109
16	Jones Environmental, Inc. W. Bert Kouns	6910 West Bert Kouns	Shreveport	LA	71129
17	KCS	4601 Shreveport-Blanchard Hwy	Shreveport	LA	71107
18	Libbey Glass	4302 Jewella Avenue	Shreveport	LA	71109
19	Liberty Oilfield Services	2675 Valley View Dr.	Shreveport	LA	71108
20	Liquid Environmental Solutions	437 Fortson	Shreveport	LA	71107
21	Omni Specialty Packaging	10399 Hwy 1 South	Shreveport	LA	71115
22	Overton Brooks VA Medical Center	510 East Stoner Avenue	Shreveport	LA	71101
23	Pel State Oil	3102 Jewella	Shreveport	LA	71109
24	Penske Truck Leasing	6890 Bert Kouns Industrial Loop	Shreveport	LA	71129
25	Pratt Paper (LA), LLC	10429 Richard Pratt Drive	Shreveport	LA	71115
26	Prolec GE USA	7000 W. Bert Kouns Industrial Loop	Shreveport	LA	71129
27	Purina Mills	223 West 63rd Street	Shreveport	LA	71136
28	Republic Services	6896 Industrial Loop	Shreveport	LA	71129
29	Ryder Truck Rental	2510 Lakeshore Drive	Shreveport	LA	71103
30	Safety-Kleen Systems, Inc.	2760 Valley View Drive	Shreveport	LA	71108
31	Ternium	2500 Ron Bean Blvd	Shreveport	LA	71115
32	Twin States Trucking	7690 West 70th	Shreveport	LA	71107
33	Union Pacific-Jewella	6215 E. Jewella	Shreveport	LA	71108
34	University Health - Kings Hwy	1541 Kings Highway	Shreveport	LA	71103
35	University Health One St. Mary Place	One Saint Mary Place	Shreveport	LA	71101
36	Willis-Knighton Medical Center	2600 Greenwood Road	Shreveport	LA	71103
37	Willis-Knighton Pierremont	8100 Youree Drive	Shreveport	LA	71115
38	Willis-Knighton South	2500 Bert Kouns Industrial Loop	Shreveport	LA	71118
39	Woolworth Landfill	10581 Woolworth Road	Keithville	LA	71047

ATTACHMENT 2 – FOG PROGRAM PUBLIC OUTREACH

Public Outreach for FOG Program
Year 9 Summary

Count	Date Public Outreach Performed	Grease Source	Apartment or Area Name	Address	Notes
1	6/10/2022	Residential	Clear Horizons Apartments	4305 Illinois Ave.	Left posters, scrappers, and lids, rack cards
2	6/15/2022	Residential		Turtle Creek Dr. & Youree Dr.	Distributed 20 door hangers
3	7/25/2022	Residential		2350 Levy St.	Left leaflets with Hope Connection (Christian Services)
4	8/3/2022	Residential		518 Dresden Ct.	15 rack cards
5	8/15/2022	Residential		136 Robinson Pl.	Left 20 door hangers/pamphlets
6	8/17/2022	Residential		516 Dalzell St.	15 door hangers
7	9/9/2022	Residential		1249 Oakland St.	Only one run down house, left door hanger
8	9/15/2022	Residential	Stonegate Manufactored Homes	6801 W 70th St.	100 pamphlets
9	9/16/2022	Residential		160 E Jordan St.	Left 15 door hangers
10	10/4/2022	Residential	Orleans Square Apartment	8528 Chalmette Dr.	Left approximately 100 pamphlets
11	10/26/2022	Proactive Measure for Grease Control	Louisiana State Fair		Left pamphlets for vendors at the state fair
12	10/31/2022	Residential		8717 St. Vincent Ave.	Left door hangers and pamphlets
13	11/21/2022	Residential	Lakeview Townhouses Apartments	1103 Dudley Dr.	Left approximately 100 pamphlets/door hangers
14	12/1/2022	Residential		2732 W. College St.	Left 20 door hangers
15	12/7/2022	Residential		8971 Hawthorne Dr.	Left 10 door hangers
16	12/21/2022	Residential	Copper Road Apartments	2929 Peach St.	Arrived at the apartment complex. Shreveport Fire Department was distributing bikes and toys for the children, did not see Erica, but left information with maintenance
17	12/29/2022	Residential		519 Dalzell St.	Left 12 door hangers
18	12/29/2022	Residential		2002 Murphy St.	Left 13 door hangers
19	12/30/2022	Residential	The Towers at Crosslake	5638 S. Lakeshore Dr.	Left approximately 78 pamphlets
20	1/6/2023	Residential		Line Ave. & Evangeline Pl.	Left pamphlets and door hangers
21	1/9/2023	Residential		2601 Devaughn St.	Left 10 door hangers
22	2/7/2023	FSE	Chuckwagon Crawfish	8696 Youree Dr.	Went out to facility, observed grease in grease trap. Also observed Field Ops working on collapsed pipe in front of the facility. Advised Mr. Rice to call and have trap pumped again, they had just pumped on 1/17/23, he did have manifest on site.
23	2/13/2023	Residential		3046 Fulton St.	Left approximately 20 door hangers around the neighborhood
24	2/13/2023	Residential	Holy Cross Villas West	9333 Normandie Dr.	Left approximately 50 door hangers for residents
25	2/23/2023	Residential		10840 Longfellow Tr.	Left 20 door hangers
26	3/13/2023	FSE		3108 W. Bert Kouns Industrial Loop	Left pamphlets
27	3/13/2023	Residential	Lakeside Garden Apartments	2440 Carrie St.	50 pamphlets
28	3/13/2023	Residential	Riverside Oaks	109 Southfield Rd.	Left door hangers and pamphlets
29	4/20/2023	FSE		5920 Line Ave.	Left approximately 50 handouts/pamphlets with McDonalds, Another Broken Egg and Superior Steak House
30	4/20/2023	Residential		556 E. 79th St.	Left 15 pamphlets/door hangers

ATTACHMENT 3 – YEAR 9 SANITARY SEWER OVERFLOWS

Sanitary Sewer Overflows (SSOs)
Year 9 Summary

Count	Date	Facility ID	Location	Duration of Overflow	Cause of Overflow	Observed Environmental Impact	Action Taken to Address SSO	Receiving Body of Water	Gallons Returned to System	Gallons Lost
1	5/31/2022	10DD-37	6901 Bert Kouns Industrial Loop	1.78 hrs	debris	sewage was not contained	unstopped by wash truck	Gilmer Bayou	0 gal	75 gal
2	6/12/2022	31GG-59	Turtle Creek	5.78 hrs	grease	sewage was not contained	vacuum manhole	Bayou Pierre	0 gal	2500 gal
3	6/21/2022	35AAA-55	622 Unadilla Street	0.97 hrs	roots	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	50 gal
4	6/28/2022	N/A	862 Haven Road	2.0 hrs	bypass pump malfunction	sewage was not contained	set up bypass pump	McCain Creek	0 gal	50 gal
5	7/1/2022	38ABB-52	5875 2nd Street	0.95 hrs	debris	sewage was not contained	unstop main with wash truck	Brush Bayou	0 gal	30 gal
6	7/3/2022	17II-48	9017 Avalon Drive	0.67 hrs	debris	sewage was not contained	unstopped by wash truck	Gilmer Bayou	0 gal	50 gal
7	7/4/2022	06BB-51	347 Waldomar Lane	0.75 hrs	bypass pump malfunction	sewage was not contained	N/A	Brush Bayou	0 gal	400 gal
8	7/18/2022	04JJ-50	1002 Bert Kouns Industrial Loop	1.45 hrs	debris	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	200 gal
9	7/23/2022	14X-52	2350 Levy Street	0.63 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	50 gal
10	7/29/2022	03II-59	518 Dresden Ct	0.58 hrs	grease	sewage was not contained	unstopped by wash truck	Sand Beach Bayou	0 gal	50 gal
11	8/13/2022	28X-56	136 Robinson Place	2.35 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	100 gal
12	8/15/2022	67X-55	519 Dalzell Street	0.75 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	50 gal
13	8/16/2022	17X-54	1117 College Street	1.15 hrs	main break	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	100 gal
14	8/22/2022	12X-53	2102 Southern Avenue	0.75 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	1500 gal
15	8/22/2022	27GG-52	Sugarleaf Tr & Potomac Drive	1.0 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	700 gal
16	8/22/2022	01DD-55	412 Trinity Circle	0.75 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	1500 gal
17	8/22/2022	1000FF-51	809 Browning Street	0.70 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	700 gal
18	8/22/2022	28DD-56	6711 Querbes Drive	0.92 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	25 gal
19	8/22/2022	N/A	6706 Querbes Drive	1.57 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	450 gal
20	8/23/2022	N/A	1628 Dilg League	N/A	heavy rain and flooding	N/A	N/A	Cross Lake	N/A	N/A
21	8/23/2022	12GG-52	Janet Lane	0.75 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	60 gal
22	8/24/2022	16GG-52	Janet Lane	0.50 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	5000 gal
23	8/29/2022	N22V-53	1249 Oakland Street	0.67 hrs	grease	sewage was not contained	unstopped by wash truck	Cross Bayou	0 gal	75 gal
24	8/29/2022	N/A	6000 Fern Avenue	N/A	lift station down	sewage was not contained	N/A	Bayou Pierre	unknown	unknown
25	9/10/2022	04EE-38	6801 70th Street	3.15 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	6000 gal
26	9/10/2022	E35AAA-55	622 Unadilla Street	0.93 hrs	roots	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	10 gal
27	9/11/2022	42P-43	3224 Redstone Drive	1.05 hrs	grease	sewage was not contained	unstopped by wash truck	Cross Bayou	0 gal	75 gal
28	9/21/2022	26Q-51	Corporate Drive	1.48 hrs	grease	sewage was not contained	unstopped by wash truck	12 Mile Bayou	0 gal	50 gal
29	10/3/2022	21BB-27	276 Arthur Avenue	3.15 hrs	main break	sewage was not contained	set up pump	Bayou Pierre	0 gal	50 gal
30	10/4/2022	48EE-56	7721 Creswell Road	3.75 hrs	lift station down	sewage partially contained	lift station back in service	Bayou Pierre	250 gal	100 gal
31	10/17/2022	N/A	5546 S. Lakeshore Drive	4 hrs	bypass pump was down	sewage spill confined to land	repaired bypass pump	Cross Lake	0 gal	100 gal
32	10/24/2022	13V-49	3200 Milam Street	1.33 hrs	grease	sewage was not contained	washed sewer main	Cross Lake	0 gal	10 gal
33	10/25/2022	16Y-53	2940 Samford Avenue	0.62 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	50 gal
34	10/25/2022	54X-48	4434 Fairway Drive	4 hrs	main break	sewage partially contained	re-established connection	Cross Lake	15500 gal	unknown
35	10/29/2022	N/A	9606 Debra Joy Street	1.13 hrs	lift station down	sewage was not contained	Sewer lift personnel	Brush Bayou	0 gal	15 gal
36	10/30/2022	11GG-53	8717 St. Vincent Avenue	0.75 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	40 gal
37	11/2/2022	13LL-51	9541 Overlook Drive	1.67 hrs	bypass pump malfunction	sewage was not contained	reestablished connection	Gilmer Bayou	0 gal	10 gal
38	11/5/2022	35Z-55	400 Dudley Drive	16.35 hrs	bypass pump malfunction	sewage was not contained	Sewer lift personnel	Bayou Pierre	0 gal	1000 gal
39	11/6/2022	09CAA-55	514 Ockley Drive	1 hrs	rain event	sewage was not contained	set up pump	Bayou Pierre	0 gal	1000 gal
40	11/7/2022	N/A	1662 Reunion Drive	2.33 hrs	lift station down	sewage was not contained	lift station back in service	Wallace Lake	0 gal	25 gal
41	11/8/2022	36U-55	Marshall Street & Fairfield Avenue	0.75 hrs	debris	sewage was not contained	unstopped by wash truck	Red River	0 gal	50 gal
42	11/8/2022	14II-48	9025 Jewella Avenue	2.0 hrs	grease	sewage was not contained	unstop main with wash truck	Gilmer Bayou	0 gal	300 gal
43	11/9/2022	27U-55	217 Jones Street	1.22 hrs	debris	sewage was not contained	unstopped by wash truck	Red River	0 gal	200 gal
44	11/13/2022	S16CC-51	6100 Bowie Street	0.80 hrs	debris	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	200 gal
45	11/14/2022	N/A	Highland Avenue & Dudley Drive	0.67 hrs	bypass pump malfunction	sewage was not contained	reestablished connection	Bayou Pierre	0 gal	50 gal
46	11/14/2022	N/A	Colquitt Road	N/A	N/A	N/A	N/A	Gilmer Bayou	N/A	N/A
47	11/16/2022	02AA-55	3804 Creswell Avenue	0.45 hrs	rain event	sewage was not contained	washed sewer main	Bayou Pierre	0 gal	10 gal
48	11/18/2022	PR4Z-54	1103 Dudley Drive	0.58 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	15 gal
49	11/18/2022	12X-50	2938 College Street	1.02 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	15 gal
50	12/1/2022	10JJ-46	9143 Walker Road	0.88 hrs	grease	sewage was not contained	unstopped by wash truck	Gilmer Bayou	0 gal	15 gal
51	12/1/2022	10DD-37	6901 Bert Kouns Industrial Loop	1.75 hrs	debris	sewage was not contained	unstopped by wash truck	Gilmer Bayou	0 gal	200 gal
52	12/5/2022	35U-55	Marshall Street	2.47 hrs	debris	sewage was not contained	unstopped by wash truck	Red River	0 gal	200 gal
53	12/6/2022	26II-49	8971 Hawthorne Drive	0.75 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	20 gal
54	12/10/2022	18DD-41	Pines Road	1.0 hrs	bypass pump malfunction	sewage was not contained	N/A	Gilmer Bayou	0 gal	2500 gal
55	12/13/2022	18ADD-41	Pines Road	1.22 hrs	bypass pump malfunction	sewage was not contained	N/A	Gilmer Bayou	0 gal	2500 gal
56	12/14/2022	13AHH-50	1709 S. Reunion Drive	3.42 hrs	bypass pump malfunction	sewage was not contained	Sewer lift personnel	Wallace Lake	0 gal	350 gal
57	12/16/2022	68X-55	519 Dalzell Street	2.025 hrs	grease	sewage was not contained	washed sewer main	Bayou Pierre	0 gal	90 gal
58	12/20/2022	47V-51	2002 Murphy Street	1.05 hrs	grease	sewage was not contained	unstopped by wash truck	Cross Bayou	0 gal	15 gal
59	12/21/2022	22W-45	5638 Lakeshore Drive	1.25 hrs	grease	sewage was not contained	unstopped by wash truck	Cross Lake	0 gal	100 gal
60	12/30/2022	N/A	Fern Avenue	unknown	force main break	N/A	main repaired	Bayou Pierre	N/A	N/A
61	12/30/2022	18DD-41	Pines Road	0.72 hrs	bypass pump malfunction	sewage was not contained	set up bypass pump	Gilmer Bayou	0 gal	50 gal
62	12/30/2022	10GG-52	8636 Coyth Lane	1.25 hrs	rain event	sewage was not contained	N/A	Brush Bayou	unknown	unknown
63	1/2/2023	31P-47	1948 Russell Road	0.58 hrs	Lift station down	sewage was not contained	Sewer lift personnel	12 Mile Bayou	0 gal	4000 gal
64	1/3/2023	N/A	5600 W. Bert Kouns	1.0 hrs	loss of power	sewage was not contained	N/A	Gilmer Bayou	0 gal	unknown
65	1/3/2023	01DD-55	405 Trinity Circle	2.40 hrs	rain event	sewage was not contained	returned to system	Bayou Pierre	0 gal	10 gal

Sanitary Sewer Overflows (SSOs)
Year 9 Summary

Count	Date	Facility ID	Location	Duration of Overflow	Cause of Overflow	Observed Environmental Impact	Action Taken to Address SSO	Receiving Body of Water	Gallons Returned to System	Gallons Lost
66	1/3/2023	55CC-54	Line Avenue	1.5 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	25 gal
67	1/4/2023	12GG-52	8636 Coyth Lane	4.65 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	unknown
68	1/5/2023	14BB-51	2601 Devaughn Street	0.83 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	25 gal
69	1/5/2023	01DD-55	408 Trinity Circle	2.0 hrs	bypass pump malfunction	sewage was not contained	set up bypass pump	Bayou Pierre	0 gal	5 gal
70	1/10/2023	02FF-51	7718 Woodfield Drive	1.47 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	25 gal
71	1/14/2023	33BB-54	931 Delmar Street	3.40 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	15 gal
72	1/16/2023	21PP-58	10496 Keysburg Ct	1.65 hrs	debris	sewage was not contained	unstop main with wash truck	Bayou Pierre	0 gal	100 gal
73	1/18/2023	43W-56	126 Wichita Street	1.63 hrs	main break	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	75 gal
74	1/18/2023	18EE-41	6935 Pines Road	1.33 hrs	bypass pump malfunction	sewage partially contained	re-established connection	Gilmer Bayou	1800 gal	9800 gal
75	1/20/2023	07Y-47	4434 Fairway Drive	unknown	main break	sewage was not contained	set up pump	Cross Lake	0 gal	unknown
76	1/24/2023	12GG-52	Coyth Lane	4.08 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	700 gal
77	1/24/2023	05X-47	1636 Dilg League	0.5 hrs	rain event	sewage was not contained	N/A	Cross Lake	0 gal	4800 gal
78	1/24/2023	02FF-51	7718 Woodfield Drive	3.67 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
79	1/24/2023	16X-53	1250 Dalzell Street	0.5 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	10000 gal
80	1/24/2023	12X-53	2102 Southern ave	0.25 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	8000 gal
81	1/24/2023	56X-53	2400 Southern Ave	0.25 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	5000 gal
82	1/24/2023	45Z-55	Highland Avenue	2.08 hrs	rain event	sewage was not contained	lift station back in service	Bayou Pierre	0 gal	6000 gal
83	1/24/2023	46II-50	8943 Kingston Road	0.5 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	250 gal
84	1/24/2023	1016AA-56	4041 Fern Ave	0.25 hrs	rain event	sewage was not contained	lift station back in service	Bayou Pierre	0 gal	600 gal
85	1/24/2023	42P-46	2424 Legardy Street	0.5 hrs	rain event	sewage was not contained	Sewer lift personnel	12 Mile Bayou	0 gal	2500 gal
86	1/24/2023	N/A	5553 Lakeshore Drive	0.58 hrs	lift station down	sewage was not contained	lift station back in service	Cross Lake	0 gal	10 gal
87	1/25/2023	35U-55	Marshall Street	2.22 hrs	grease	sewage was not contained	washed sewer main	Red River	0 gal	40 gal
88	1/25/2023	12GG-52	8636 Coyth Lane	0.92 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	20 gal
89	1/25/2023	10DD-56	Querbes	2.28 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	350 gal
90	1/26/2023	22GG-52	534 Lynbrook Blvd	1.28 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	40 gal
91	1/26/2023	06Y-47	4434 Fairway Drive	1.42 hrs	bypass pump malfunction	sewage was not contained	re-established connection	Cross Lake	0 gal	200 gal
92	1/26/2023	16CC-54	Pierremont Road & Line Ave	0.85 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	300 gal
93	1/29/2023	31Z-55	501 Slattery Blvd	0.5 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	unknown
94	1/30/2023	11DD-56	6345 Querbes Drive	3.33 hrs	rain event	sewage was not contained	returned to system	Bayou Pierre	0 gal	5 gal
95	1/30/2023	35W-56	151 E. Topeka Street	0.60 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	20 gal
96	2/1/2023	12GG-52	Janet Lane	1.0 hrs	rain event	sewage was not contained	washed sewer main	Brush Bayou	0 gal	500 gal
97	2/1/2023	08NN-67	1 Nathan Sedley Road	4.25 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	10 gal
98	2/2/2023	34Z-55	Dudley Drive	0.65 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	80 gal
99	2/2/2023	18DD-41	70th Street	0.82 hrs	rain event	sewage was not contained	N/A	Gilmer Bayou	0 gal	500 gal
100	2/2/2023	12GG-52	Coyth Lane	1.0 hrs	rain event	sewage was not contained	returned to system	Brush Bayou	0 gal	500 gal
101	2/2/2023	40X-53	2524 Samford Ave	0.50 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	1000 gal
102	2/2/2023	16X-53	1250 Dalzell Street	0.25 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	200 gal
103	2/2/2023	12X-53	2102 Southern Ave	0.25 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	300 gal
104	2/2/2023	99W-56	100 Olive Street	0.93 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	80 gal
105	2/2/2023	35Z-55	504 Dudley Drive	0.50 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	4000 gal
106	2/2/2023	44Z-55	458 Slattery Blvd	0.50 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	10000 gal
107	2/2/2023	11DD-56	300 Brookmeade Drive	0.17 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	80 gal
108	2/3/2023	1002GG-53	8717 St. Vincent	0.17 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
109	2/3/2023	16GG-52	574 Sally Ann Drive	0.33 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
110	2/3/2023	29GG-52	600 Sugarleaf Tr	0.30 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
111	2/3/2023	101GG-52	534 Lynbrook Blvd	0.58 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
112	2/3/2023	09NN-67	1 Nathan Sedley Road	2.25 hrs	N/A	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	10 gal
113	2/6/2023	47DD-47	6913 Lavender Dr.	1.67 hrs	debris	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	100 gal
114	2/6/2023	03II-59	520 Dresden Ct	1.20 hrs	debris	sewage was not contained	unstopped by wash truck	Sand Beach Bayou	0 gal	50 gal
115	2/7/2023	54Z-56	232 E Gregg Street	3.23 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	200 gal
116	2/8/2023	02FF-56	562 Spring Lake Drive	0.78 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	25 gal
117	2/8/2023	N/A	1326 Hearne Ave	2.38 hrs	Lift station down	sewage was not contained	re-established connection	Red River	0 gal	200 gal
118	2/9/2023	16Y-53	2916 Samford Ave	1.27 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	30 gal
119	2/10/2023	25Z-50	3046 Fulton Street	1.45 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	75 gal
120	2/10/2023	20II-49	9041 Mansfield Road	2.78 hrs	debris	sewage was not contained	unstopped by wash truck	Gilmer Bayou	0 gal	350 gal
121	2/11/2023	05X-47	1636 Dilg League Drive	0.10 hrs	rain event	sewage was not contained	unstopped by wash truck	Cross Lake	0 gal	200 gal
122	2/11/2023	44Z-55	450 Slattery Blvd	1.68 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	1000 gal
123	2/11/2023	45Z-55	460 Dudley	2.02 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	3000 gal
124	2/11/2023	33GG-51	601 Kingtowne Place	0.50 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	10000 gal
125	2/11/2023	18DD-41	6900 Pines Road	1.32 hrs	rain event	sewage was not contained	N/A	Gilmer Bayou	0 gal	20000 gal
126	2/11/2023	11DD-56	6706 Querbes Drive	0.50 hrs	rain event	sewage was not contained	N/A	Bayou Pierre	0 gal	1500 gal
127	2/11/2023	13KK-47	9333 Normandie	2.40 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	2500 gal
128	2/11/2023	12GG-52	578 Janet Lane	1.0 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	50000 gal
129	2/12/2023	13KK-47	9333 Normandie Drive	1.5 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	500 gal
130	2/12/2023	60W-53	1881 Texas Ave	1.15 hrs	N/A	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	100 gal

Sanitary Sewer Overflows (SSOs)
Year 9 Summary

Count	Date	Facility ID	Location	Duration of Overflow	Cause of Overflow	Observed Environmental Impact	Action Taken to Address SSO	Receiving Body of Water	Gallons Returned to System	Gallons Lost
131	2/13/2023	33LL-48	2507 Sundsvall Ct	1.05 hrs	debris	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	100 gal
132	2/13/2023	61W-53	1881 Texas Ave	2.67 hrs	N/A	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	5 gal
133	2/14/2023	N/A	5929 S. Lakeshore Drive	N/A	Overflow due to excessive rain water.	sewage was not contained	N/A	Cross Lake	N/A	N/A
134	2/19/2023	N/A	Highland Ave	1.25 hrs	lift station down	sewage was not contained	Sewer lift personnel	Bayou Pierre	0 gal	10000 gal
135	2/20/2023	N/A	Highland Ave & Dudley Drive	0.68 hrs	lift station down	sewage was not contained	lift station back in service	Bayou Pierre	0 gal	5000 gal
136	2/20/2023	N/A	622 Unadilla Street	1.88 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	25 gal
137	2/21/2023	16RR-58	10840 Longfellow Trace	3.97 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	750 gal
138	2/22/2023	03R-51	Corporate Drive & Forum Drive	1.63 hrs	Lift station down	sewage was not contained	Sewer lift personnel	Red River	0 gal	750 gal
139	2/23/2023	N/A	622 Unadilla Street	1.5 hrs	roots	sewage partially contained	unstopped by wash truck	Bayou Pierre	500 gal	1500 gal
140	2/26/2023	13BB-54	960 Thora Blvd	0.85 hrs	N/A	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	3 gal
141	2/28/2023	57MM-49	2048 Sand Crest Drive	2.33 hrs	Lift station down	sewage was not contained	lift station back in service	Brush Bayou	0 gal	20 gal
142	2/28/2023	28X-51	2440 Carrie Street	3.80 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	300 gal
143	3/2/2023	N/A	1849 Hollyhock Drive	1.25 hrs	debris	sewage was not contained	unstopped by wash truck	Boggy Bayou	0 gal	100 gal
144	3/2/2023	48II-47	2844 Lynda Lane	2.80 hrs	main break	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	10 gal
145	3/4/2023	04KK-52	9340 Crooked Creek Drive	1.48 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	25 gal
146	3/10/2023	N/A	9905 Chase Island Drive	2.97 hrs	bypass pump malfunction	sewage was not contained	N/A	Brush Bayou	0 gal	20 gal
147	3/10/2023	05X-47	1636 Dilg League Drive	0.5 hrs	rain event	sewage was not contained	N/A	Cross Lake	0 gal	3000 gal
148	3/11/2023	07JJ-46	3108 W. Bert Kouns	2.98 hrs	grease	sewage was not contained	unstopped by wash truck	Gilmer Bayou	0 gal	30 gal
149	3/12/2023	06CC-59	109 Southfield Road	0.67 hrs	grease	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	75 gal
150	3/23/2023	03HH-57	1030 Bert Kouns	1.97 hrs	Lift station down	sewage was not contained	lift station back in service	Bayou Pierre	0 gal	5000 gal
151	3/23/2023	N/A	3618 Maywood Drive	unknown	force main break	N/A	force main repair	Cross Lake	unknown	unknown
152	3/29/2023	07HH-57	1030 Bert Kouns	1.57 hrs	Lift station down	sewage was not contained	Sewer lift personel	Bayou Pierre	0 gal	650 gal
153	4/3/2023	02FF-51	7718 Woodfield Drive	0.58 hrs	rain event	sewage was not contained	returned sewage to system	Brush Bayou	0 gal	50 gal
154	4/3/2023	12GG-52	8636 Coyth Lane	1.0 hrs	rain event	sewage was not contained	returned sewage to system	Brush Bayou	0 gal	1400 gal
155	4/4/2023	01DD-55	412 Trinity Circle	2.28 hrs	debris	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	200 gal
156	4/4/2023	1001AA-51	2601 Devaughn Street	1.0 hrs	debris	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	100 gal
157	4/4/2023	100FF-51	813 Browning Street	0.40 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	100 gal
158	4/4/2023	W13BB-54	1132 Erie Street	1.25 hrs	rain event	sewage was not contained	washed sewer main	Bayou Pierre	0 gal	15 gal
159	4/5/2023	25AA-54	919 Monrovia Street	1.07 hrs	rain event	sewage was not contained	washed sewer main	Bayou Pierre	0 gal	100 gal
160	4/6/2023	12AA-50	3400 Hearne Avenue	1.05 hrs	rain event	sewage was not contained	returned sewage to system	Cross Bayou	0 gal	500 gal
161	4/6/2023	35W-56	151 E. Topeka Street	0.55 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	2500 gal
162	4/6/2023	44Z-55	501 Slattery Blvd	0.33 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	2500 gal
163	4/6/2023	07AA-56	4041 Fern Avenue	0.25 hrs	rain event	sewage was not contained	lift station back in service	Bayou Pierre	0 gal	700 gal
164	4/6/2023	31X-56	136 Robinson Pl	2.93 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	2500 gal
165	4/6/2023	64FF-52	8139 Fork Bayou Lane	0.50 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	1250 gal
166	4/6/2023	15FF-51	8000 Wyngate Blvd	0.50 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	2500 gal
167	4/6/2023	12GG-52	8700 Coyth Lane	0.25 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	2500 gal
168	4/6/2023	28GG-52	8900 Coyth Lane	0.25 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	2500 gal
169	4/6/2023	16GG-52	8600 Coyth Lane	0.25 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	1700 gal
170	4/6/2023	22GG-52	8800 Coyth Lane	0.25 hrs	rain event	sewage was not contained	N/A	Brush Bayou	0 gal	2800 gal
171	4/7/2023	22DD-56	Querbes Drive	0.25 hrs	rain event	sewage was not contained	lift station back in service	Bayou Pierre	0 gal	25 gal
172	4/7/2023	02FF-51	7718 Woodfield Drive	0.25 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
173	4/7/2023	05X-47	1636 Dilg League	0.25 hrs	rain event	sewage was not contained	lift station back in service	Cross Lake	0 gal	700 gal
174	4/7/2023	38RR-58	10140 Poydras Street	2.50 hrs	Lift station down	sewage partially contained	Sewer lift personel	Bayou Pierre	2000 gal	700 gal
175	4/7/2023	51CC-54	828 Drexel Drive	21.0 hrs	main break	sewage was not contained	set up bypass pump	Brush Bayou	0 gal	350 gal
176	4/10/2023	unknown	2910 Long Lake Drive	N/A	Lift station down	N/A	lift station back in service	Long Lake	N/A	N/A
177	4/10/2023	27VV-55	1002 Leon Street	1.78 hrs	main break	sewage was not contained	washed sewer main	Red River	0 gal	100 gal
178	4/10/2023	02BB-54	919 Monrovia Street	2.42 hrs	main break	sewage was not contained	washed sewer main	Bayou Pierre	0 gal	100 gal
179	4/12/2023	27VV-55	1002 Leon Street	4.50 hrs	debris	sewage was not contained	unstop main with wash truck	Red River	0 gal	1000 gal
180	4/13/2023	57PP-43	4715 Hilry Huckaby Ave	0.80 hrs	main break	sewage was not contained	re-established connection	12 Mile Bayou	0 gal	500 gal
181	4/25/2023	20SS-58	200 Southern Trace Parkway	1.30 hrs	grease	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	75 gal
182	4/27/2023	51X-55	Gilbert Drive	1.68 hrs	debris	sewage was not contained	unstop main with wash truck	Bayou Pierre	0 gal	200 gal
183	4/27/2023	1002GG-53	8717 St. Vincent Avenue	1.32 hrs	rain event	sewage was not contained	lift station back in service	Brush Bayou	0 gal	50 gal
184	4/29/2023	12KK-47	Colquitt Road	3.05 hrs	debris	sewage was not contained	unstop main with wash truck	Gilmer Bayou	0 gal	200 gal
185	5/10/2023	13II-48	9025 Jewella Ave	1.02 hrs	bypass pump malfunction	sewage was not contained	re-established connection	Gilmer Bayou	0 gal	25 gal
186	5/11/2023	02Y-42	5804 Parkwood Drive	1.0 hrs	rain event	sewage was not contained	unstopped by wash truck	Bickham Bayou	0 gal	10000 gal
187	5/11/2023	09X-53	2100 Southern Avenue	1.0 hrs	rain event	sewage was not contained	unstopped by wash truck	Bayou Pierre	0 gal	16000 gal
188	5/11/2023	14GG-53	8717 St. Vincent Avenue	0.75 hrs	rain event	sewage was not contained	unstopped by wash truck	Brush Bayou	0 gal	100 gal
189	5/11/2023	14W-48	3854 Michigan Blvd	0.13 hrs	rain event	sewage was not contained	washed sewer main	Cross Lake	0 gal	200 gal
190	5/11/2023	14Y-57	611 Washington Street	0.92 hrs	rain event	sewage was not contained	unstopped by wash truck	Red River	0 gal	300 gal
191	5/11/2023	05X-47	1636 Dilg League Drive	0.5 hrs	rain event	sewage was not contained	unstopped by wash truck	Cross Lake	0 gal	1000 gal