

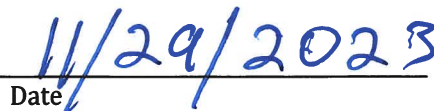
City of Memphis

Annual Report October 1, 2022 through September 30, 2023

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



Christopher Morrical, P.E.



Date

Annual Report

October 1, 2022 through September 30, 2023

On September 20, 2012, the United States District Court for the Western District of Tennessee entered a Consent Decree between the City of Memphis (the City) and the United States, the State of Tennessee, and the Tennessee Clean Water Network.

To fulfill the reporting requirements defined in Paragraph VIII.26. of the Consent Decree, the City has prepared this Annual Report, which includes the following information:

- A summary of Management, Operations, and Maintenance (MOM) programs implemented or modified pursuant to the Consent Decree, including a comparison of actual performance with any performance measures that have been established.
- A trend analysis of the number, volume, duration, and cause of sanitary sewer overflow (SSO) events for the previous twenty-four-month period.

1. Summary of MOM Programs

The Consent Decree, as shown in Paragraph V.10, describes the following MOM Programs that are required to be developed and/or implemented by the City. These include the following:

- Sewer Overflow Response Plan (SORP)
 - Approved by EPA on March 11, 2011, with an update of “form and not substance” on March 30, 2016 and implemented for the full reporting period. The program was reviewed in February 2019 and the City determined that only one change should be made which was submitted to EPA on March 6, 2019. As EPA disapproved the change, the City operates under the 2016 amended SORP. By letter dated March 5, 2021, the City submitted revisions that were deemed “form and not substance”. In 2023, due to the ambiguity with “form” versus “substance”, the City requested EPA written approval of the March 6, 2023, changes.
- Fats, Oil, and Grease (FOG) Management Program
 - The original FOG program was approved as part of the Consent Decree. A subsequent amendment was approved by EPA on April 22, 2014. Subsequent updates of “form and not substance” were submitted on May 30, 2019 and July 22, 2019. The City completed revisions on July 21, 2021 with a number of changes based upon the style of the new Administrator of Environmental Construction. Due to the number of changes, the City, rather than evaluating whether all of the changes were to form versus substance, requested EPA’s written approval. The City is waiting on approval of the revised program. Additionally, the biennial review due in July 21, 2023 was completed and submitted.

- Performance measures described in the FOG Management Program are presented below, along with the actual performance over the reporting period for those items.
 - Commercial FOG Prevention Measures
 - Number of Notice of Violations (NOVs) issued for failure to comply with Food Establishment Wastewater Discharge permits: 8
 - Number of NOVs per 100 food establishments: 0.20
 - Number of food establishment grease removal equipment inspections: 4,062
 - Number of follow-up inspections: 120
 - General Public FOG Prevention Measures
 - Number of FOG public education packets distributed (door hangers and/or “can the grease” lids): 42,403, since CD inception
 - Number of grease related SSOs: 139
 - Note that grease-related SSOs are those identified at the time of the SSO as related to grease, although additional causes, such as roots or an offset joint, may also have contributed to the overflow.

- Lift Station and Force Main Operations and Maintenance (O&M) Program
 - Approved by EPA on March 13, 2017, and implemented for the full reporting period. The program was reviewed March 5, 2021, and the City determined that changes were “form” and not “substance”. In 2023, due to the ambiguity with “form” versus “substance”, the City requested EPA written approval of the March 6, 2023, changes.

- Gravity Sewer System O&M Program
 - Approved by EPA on November 9, 2017, with an update of “form and not substance” on November 14, 2019, the City continued implementation of the program. The City submitted an updated GS O&M Program to EPA on November 12, 2021. The City is waiting on approval of the revised program. (An updated GS O&M Program was subsequently submitted and will be addressed in the next semi-annual report.)

- Inter-Jurisdictional Agreement Program
 - Approved by EPA on March 19, 2018, and the City began implementation of the approved program at this time. The City of Memphis continued negotiations with a number of municipalities concerning the draft IJA’s. The City of Memphis executed revisions to the IJA with the Town of Collierville on May 21, 2020, the City of Millington on October 19, 2021, and City of Lakeland on April 18, 2022. The City remains in discussion with the City of Bartlett and City of Germantown. The City was not successful in seeking to have TDEC include certain interjurisdictional issues

addressed in TDEC NPDES and/or SOP permits it issues to Memphis' outlying jurisdictions.

- In addition, the litigation with the Sewer District proceeded to trial in Tennessee federal court in April 2023. Ten days before trial, the Court issued a ruling that the existing sewer agreement between the parties would expire on September 23, 2023. Following trial, the Court ruled, among numerous other issues, that the District has 8 years from Oct. 1, 2023, to disconnect from the City's system. However, the Court determined that an Interjurisdictional Agreement between the parties is not required. On or about October 20, 2023, the City of Memphis submitted a filing asking the Court to reconsider and requesting that the District be required to enter into an interjurisdictional agreement.
- Continuing Sewer Assessment Program (CSAP)
 - Approved by EPA on November 5, 2018, with an update of "form and not substance" on June 8, 2020, the City continued implementation of the program. The City reviewed and submitted revisions identified as "form" to EPA on June 7, 2022.
 - As described in Paragraph V.10.f of the Consent Decree, the City is required to assess approximately 10 percent of the wastewater collection and transmission system. (WCTS) on average per year following the approval of the CSAP. Also as stipulated in the Consent Decree, the City may include any assessment activity that is conducted after April 1, 2011, as part of the calculation. Through the end of this reporting period, the City has assessed approximately 2,683 of the estimated 2,775¹ miles of pipe contained within the WCTS. This equates to approximately 97% of the system being assessed and does not include reassessment or the additional pipe assessed using either the SL-RAT technology as described in the CSAP. In accordance with the CD, the City is required to assess approximately 10% of the WCTS per year following approval of the CSAP in September 2014 (i.e., 90% of the WCTS should be assessed by September 2023). The current assessment rate of 97% places the City well ahead of the CD-required schedule. Also, within and outside the WCTS there are 95 lift stations, all of which have been assessed. Additionally, ninety-five force mains have been assessed and three reassessments of those force mains.
 - Due to the greater precision associated with the GIS information, the number of miles associated with the WCTS is subject to slight change. In its March 2, 2017, letter to EPA, the City stated that future reports and documents will utilize the total mileage of approximately 2,808 recognizing that the exact number may vary slightly over time as additional new information is developed. Accordingly, this report continues to be based upon 2,808 miles. Nevertheless, for your information, we note that our current estimate of the size of the WCTS is 2,775 miles. The City had originally estimated the system was 2,400 miles. The City is ahead of schedule whether using the 2,808 or 2,400 miles.
 - The CSAP outlines Year 1 and Year 2 Priority Areas for assessment to be completed

¹ Due to the de-annexation of some of the WCTS, the current numbers provided do not reflect prior work that had been done in those areas.

by deadlines specified in the document. The Year 1 area was completed by the September 10, 2015, deadline and the Year 2 was completed by the September 10, 2016, deadline. Additionally, assessment was conducted on areas outside of these boundaries to complete sewer sheds in their entirety.

- Infrastructure Rehabilitation Program (IRP)

The IRP was approved by EPA by transmittal letter dated July 13, 2016 and received several days later. The City began implementation of the approved program at this time. The City continued to prioritize rehabilitation issues in accordance with the approved IRP. Rehabilitation in the North and South Priority Rehabilitation Areas (as designated in Appendix G of the CD) continued. Group 1&2 Relay and CIPP construction contracts used to rehabilitate IRP prioritized lines were completed.

2. Sanitary Sewer Overflow Trend Analysis

As required in the Consent Decree, a trend analysis of the number, volume, duration and cause of SSO events was performed which includes four graphs (all located at the end of this report).

Figure 1 shows monthly SSO events for the previous twenty-four months as a result of the following causes:

- Blockage
 - Related to FOG
 - Not related to FOG
- Break
- Flooded
- Force Main Failure
- Pump Station Failure
- Other / Unknown

The majority of SSOs (64%) shown in **Figure 1** were the result of grease blockages within the system. This trend is consistent with the findings in the previous Annual Reports. These blockages have been organized by those caused by FOG and those caused primarily by other factors such as roots, debris, mud, sand, rocks, or other foreign material obstructing the pipe.

Figure 2 presents a rolling annual average of SSOs per 100 miles of WCTS per month for a given 12-month period. The graph begins with the number of SSOs per 100 miles of WCTS per month for a rolling twelve-month average. Hence, the graph begins on May 2013 and looks back at 12 months of data. The graph continues through the end of this reporting period. As each successive month is added to the annual average, the first month is dropped, creating the rolling 12-month average. This graph better demonstrates SSO trends by eliminating the inconsistent pattern of SSOs month to month and year to year. The long-term trend line shows a decrease in overflows. The graph continues to indicate the SSOs per 100 miles as an industry standard.

Figure 3 shows the monthly SSO volumes for the previous twenty-four months, reported in million gallons. The total volume each month is presented above each bar.

Figure 4 shows the monthly SSO duration during the previous twenty-four month period. The

durations shown are a summation of the total amount of time overflows were occurring within the system at all overflow locations. This data is provided in the units of overflow equivalent hours. For instance, if two overflows related to blockages occur concurrently for two hours each, the overflow duration for that day is four overflow equivalent hours.

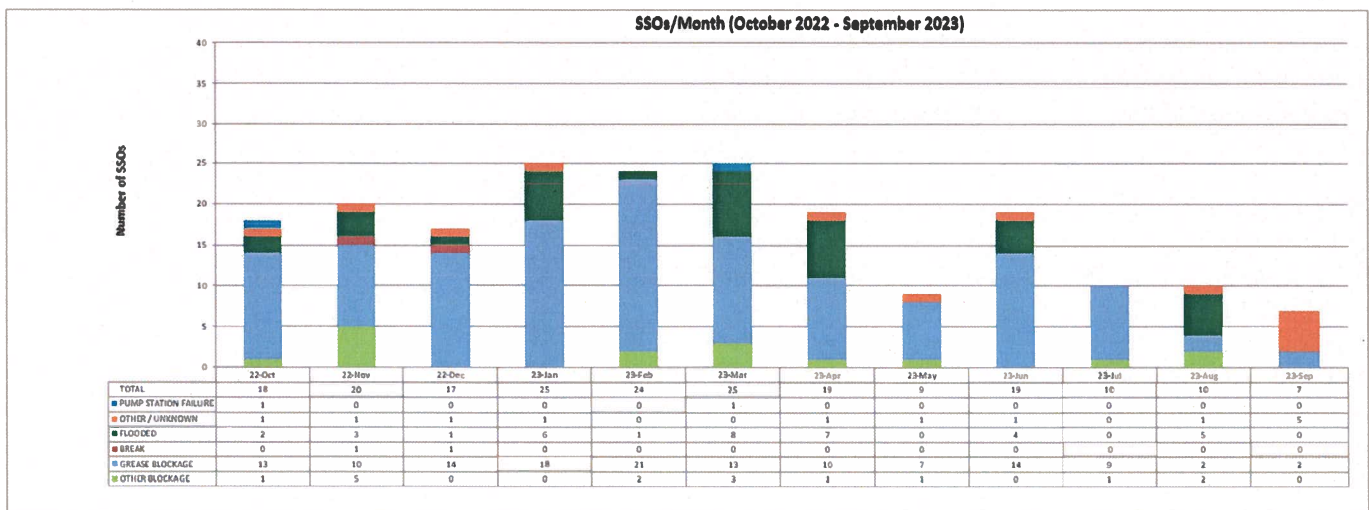


Figure 1 – SSOs by Cause

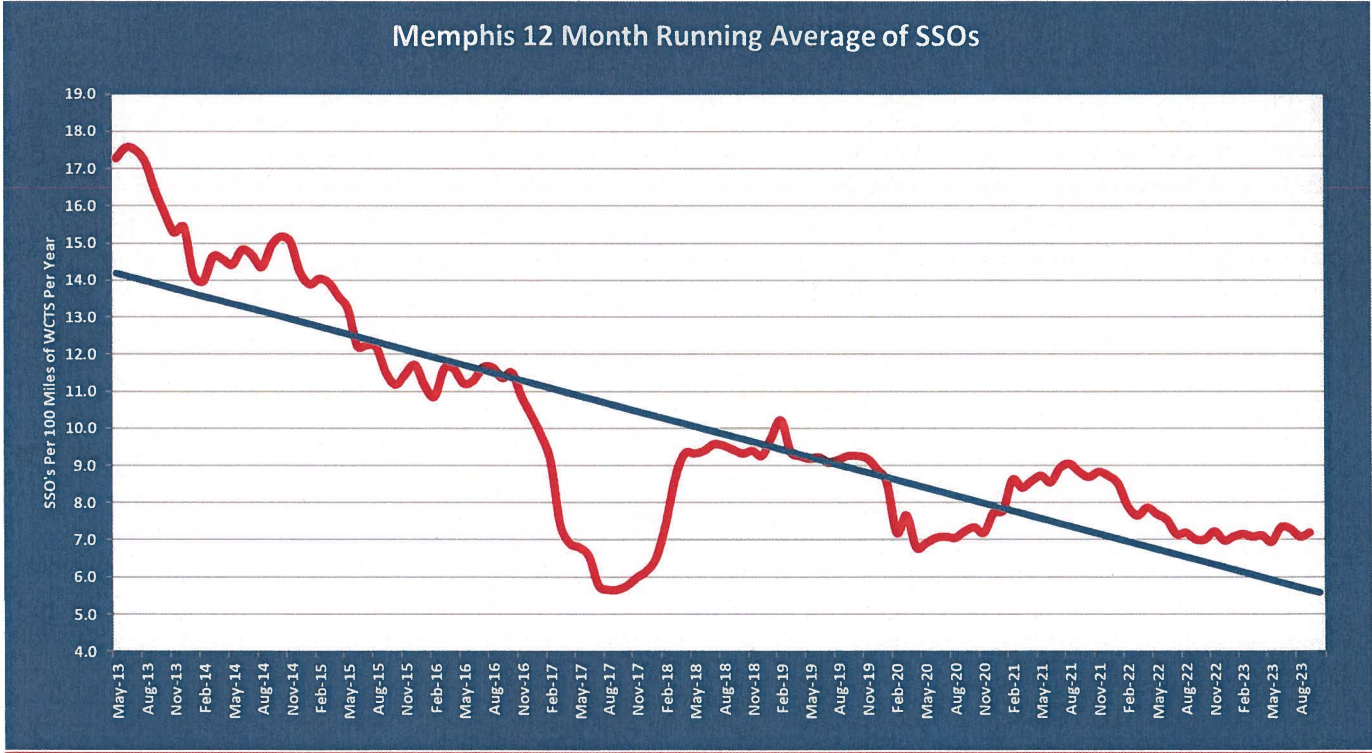


Figure 2 – Rolling Average of SSOs/Month

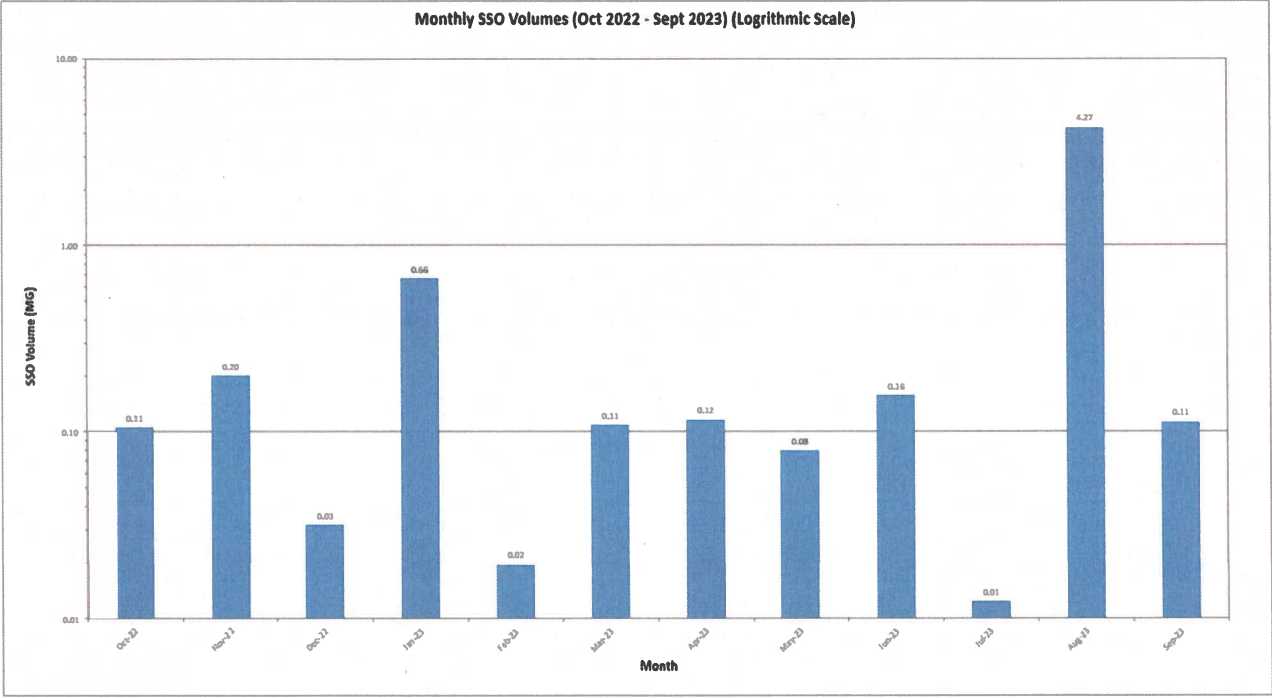


Figure 3 – Monthly SSO Volume

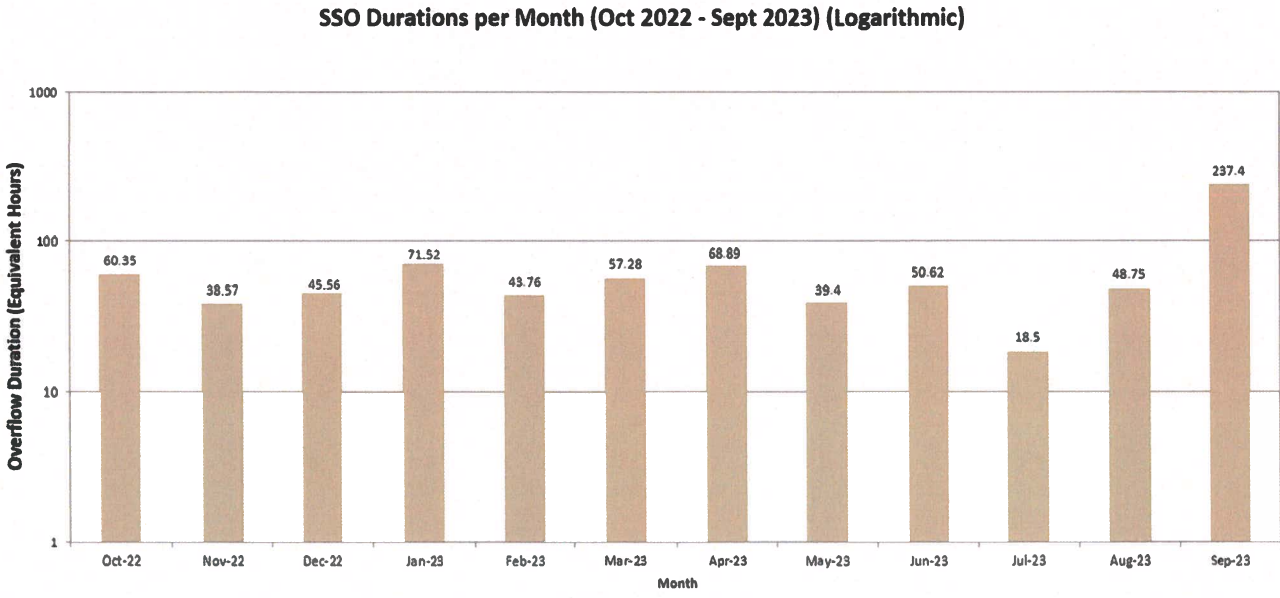


Figure 4 – Monthly SSO Duration