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December 22, 2015

Via Federal Express

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Re: United States of America and State of Arkansas v. City of Fort Smith, Arkansas,
United States District Court, Western District of Arkansas – Case No. 2:14-cv-2266-PKH

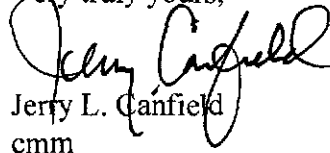
Greetings:

Regarding the Sanitary Sewer Overflow Emergency Response component of CMOM (paragraph 48 of the Consent Decree), the City of Fort Smith hereby submits its Sanitary Sewer Overflow Emergency Response Plan for EPA review and approval. As a deliverable under paragraph 89 of

the Consent Decree, the Plan is also submitted to ADEQ. The submission is made in hard copy as well as in electronic and searchable text format.

Thank you for your attention to this matter.

Very truly yours,



Jerry L. Canfield
cmm

Enclosures

cc: Chief, Environmental Enforcement Section (Via Federal Express)
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CAPACITY, MANAGEMENT, OPERATIONS,
AND MAINTENANCE (CMOM) PROGRAM
AND IMPLEMENTATION PLAN

**Gravity Sewer Line
Cleaning Program Plan**

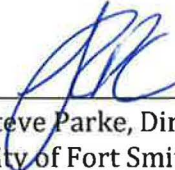
December 2015

CITY OF FORT SMITH, ARKANSAS

Capacity, Management, Operation, and Maintenance Program

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 the information, the information 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.





Steve Parke, Director of Utilities
City of Fort Smith, AR
Utility Department



Date

Gravity Sewer Line Cleaning Program Plan

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List of Acronyms

ADEQ	Arkansas Department of Environmental Quality
CCA	Continuing Capacity Assurance
CCTV	Closed Circuit Television
CMOM	Capacity, Management, Operations, & Maintenance
CSSA	Continuing Sewer System Assessment
CTP	Comprehensive Training Plan
CWA	Clean Water Act
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
FOG	Fats, Oil and Grease
GIS	Geographic Information System
I&I	Infiltration and Inflow
IMS	Information Management System
MACP	NASSCO's Manhole Assessment and Certification Program
MGD or mgd	Million Gallons per Day
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
OERP	Overflow Emergency Response Plan
PACP	NASSCO's Pipe Assessment and Certification Program
SOP	Standard Operation Procedure
SSA	Sewer System Assessment
SSO	Sanitary Sewer Overflow
U.S.	United States
WCTS	Wastewater Collection and Transmission System
WWTP	Wastewater Treatment Plant

Definitions

Unless otherwise defined herein, or expressly stated in the City of Fort Smith Sewer Use Ordinance, terms used in in the plans comprising the CMOM Program and Implementation Plan shall have the meanings given to those terms in the CWA and the EPA Consent Decree lodged for City of Fort Smith, Arkansas. The terms and acronyms are defined as follows:

ADEQ shall mean the Arkansas Department of Environmental Quality, and any successor departments or agencies of the State of Arkansas.

Annual Report shall mean the report to be submitted annually pursuant to Section X of the Consent Decree.

Article shall mean a portion of Section V ("Comprehensive Remedial Requirements" Section) of the Consent Decree.

Basin shall mean a section of a Sewershed that is a distinct wastewater collection area, and designated by Fort Smith as such.

Building/Private Property Backup shall mean a wastewater backup into a building and/or a wastewater overflow onto private property that is caused by blockages, flow conditions or other malfunctions in the WCTS. "Building/Private Property Backup" does not include a wastewater backup into a building and/or a wastewater overflow onto private property that is caused solely by a blockage or other malfunction of a Private Service Lateral or other piping or conveyance system that Fort Smith does not own or operate.

Calendar Year shall mean the twelve (12) month period starting on January 1 and ending on December 31 of a given year.

Capacity Constraint shall mean those discrete components, or groups of components of the WCTS that are determined by the City, consistent with Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree to have capacity deficiency issues that have caused or significantly contributed to previous capacity-related SSOs; that are likely to cause or significantly contribute to future capacity-related SSOs; and/or that are identified as overflow locations for any storm event presented in Section V, Article Four, Paragraph 30.

City or Fort Smith shall mean the City of Fort Smith, Arkansas.

Clean Water Act or CWA shall mean the Federal Clean Water Act found at 33 U.S.C. §§ 1251- 1387.

CMOM or Capacity, Management, Operations, and Maintenance shall mean a program of accepted industry practices to properly manage, operate and maintain sanitary sewer collection, transmission and treatment systems, investigate capacity constrained areas of these systems, and respond to SSO events, including as identified by the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs (EPA, Jan. 2005).

Consent Decree or Decree shall mean the Decree (and all Appendices) lodged by the U.S. EPA against the City of Fort Smith.

Consultant shall mean a professional engineer licensed in the State of Arkansas or other recognized professional within a field of practice, with appropriate qualifications, experience and adequate staff and resources necessary to undertake any program plan, study, analysis, design or report required by the terms of the Consent Decree.

Contractor shall mean a person or entity who in pursuit of its business undertakes to perform a job or piece of work, retaining in himself control of means, method and manner of accomplishing the desired result.

Critical Response Time shall mean the time interval between activation of the high wet well level alarm at a Pump Station and the first SSO from the WCTS tributary to that Pump Station under peak dry-weather flow conditions or under peak wet-weather flow conditions (generated by the analysis rainfalls presented in Section V, Article Four ("Capacity Assessment and Hydraulic Modeling") of the Consent Decree), whichever weather conditions prevail at the time of the SSO.

Cross-Connection shall mean any constructed connection, whether by pipe or any other means, between any part of the WCTS and any part of a storm water drainage system that is capable of conveying flow between the two systems.

Date of Lodging shall mean the date the United States filed a copy of the Consent Decree signed by all Parties with the District Court, along with the Complaint, prior to submitting the Consent Decree for publication in the Federal Register to provide an opportunity for public review and comment thereon. The Date of Lodging for the City's Consent Decree is January 02, 2015 (1/2/2015).

Day or Days shall mean a calendar day or calendar days unless expressly stated to be a business day or business days. In computing any period of time under the Consent Decree, where the last Day would fall on a Saturday, Sunday, or a Federal or State holiday, the period shall run until the close of the next business day.

Deliverable shall mean any written document required to be prepared and/or submitted by or on behalf of Fort Smith pursuant to the Consent Decree.

Direct Discharge shall mean a sewer pipe installed to convey wastewater from a sanitary sewer for release into the environment.

Environmental Protection Agency or EPA shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

Equalization Facilities or EQ Facilities shall mean those components of the WCTS designated, designed or intended for the temporary storage of wet-weather wastewater flows.

Fats, Oil and Grease or FOG shall mean fats, oil and grease, whether petroleum-based, mineral-oil-based, animal-based or vegetable-based.

FOG Control Device shall mean any grease interceptor, grease trap, or other mechanism, device, or process that attaches to or is applied to wastewater plumbing fixtures and/or Private Service Lines to collect, contain, or remove FOG from the wastewater stream of a FOG Generator prior to discharge into the WCTS.

FOG Control Program Plan or Fats, Oil and Grease Control Program Plan shall mean Fort Smith's program to control discharge of FOG into the WCTS as developed and approved under **Section V, Article Seven, Paragraph 37** of the Consent Decree.

FOG Generator shall mean any food service establishment or food-processing establishment that discharges FOG into the WCTS, provided, however, that those establishments covered by the City's industrial user program shall not be considered a FOG Generator for the purposes of the Consent Decree.

Force Main shall mean any pipe that receives and conveys, under pressure, wastewater from the discharge side of a pump. A Force Main is intended to convey wastewater under pressure.

Gravity Sewer Line shall mean a pipe that receives, contains and conveys wastewater not normally under pressure, but intended to flow unassisted under the influence of gravity.

Small-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are less than twenty-four (24) inches in diameter.

Large-Diameter Gravity Sewer Lines shall mean Gravity Sewer Lines that are twenty-four (24) inches or greater in diameter.

Infiltration as defined by 40 C.F.R. § 35.2005(b)(20) shall mean water other than wastewater that enters a WCTS (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes.

Inflow as defined by 40 C.F.R. § 35.2005(b) (21) shall mean water other than wastewater that enters a WCTS (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm water, surface runoff, street wash waters, or drainage.

Infiltration and Inflow or I&I shall mean the total quantity of water from Infiltration and Inflow without distinguishing the source.

Interest shall mean interest accruing on a sum calculated in the manner provided by 28 U.S.C. § 1961.

Manhole Assessment and Certification Program or MACP shall mean the **National Association of Sewer Service Companies (NASSCO)** Manhole Assessment and Certification Program.

Massard Permit shall mean NPDES Permit Number AR0021750 issued to City pursuant to Section 402 of the Clean Water Act, 33 U.S. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the Massard POTW and any future extended, modified or reissued permit.

Massard WWTP shall mean the publicly owned treatment works that is owned and operated by the City and that is located in Fort Smith with an address of **1609 North 9th Terrace, Barling, Arkansas**.

Month shall mean one calendar month running from a numbered day to the same numbered day of the following calendar month, regardless of whether the particular month has 28, 29, 30, or 31 days. If a triggering event would occur on a day of the month that does not exist (for example, February 30), then the event shall be due on the first day of the following month (for example March 1).

NASSCO shall mean the National Association of Sewer Service Companies.

P Street Permit shall mean NPDES Permit Number AR0033278 issued to City pursuant to Section 402 of the Clean Water Act, 33 U.S.C. § 1342, and the Arkansas Water and Air Pollution Control Act, Ark. Code Ann. § 8-4-10, et seq., for the P Street POTW and any future, extended, modified or reissued permit.

P Street WWTP shall mean the publicly owned treatment works that is owned and operated by City and that is located at **13 North P Street in Fort Smith, Arkansas.**

Pipe Assessment and Certification Program or **PACP** shall mean the NASSCO Pipe Assessment and Certification Program.

Pipe Segment shall mean the portion of a Gravity Sewer Line extending from manhole to manhole.

Private Service Line shall mean a sewer line which is not owned or operated by City, but which conveys wastewater from a building to a main line of the WCTS.

Private Service Line Release shall mean any spill, release, or diversion of sewage from a Private Service Line to any location other than the WCTS caused solely by a blockage or other malfunction in that Service Line, even if the release does not reach Waters of the State or waters of the United States.

Pump Station or **Pumping Station** shall mean facilities owned or operated by Fort Smith that contain pumps that lift wastewater from a lower to a higher hydraulic elevation, including all related electrical, mechanical, and structural systems necessary to the operation of that Pump Station within the WCTS.

Recurring Private Service Line Release shall mean a Private Service Line Release that has occurred within three (3) years of a prior Private Service Line Release at the same location.

Recurring SSO, Recurring Dry-Weather SSO, and Recurring Wet-Weather SSO. A "Recurring SSO" shall mean any SSO that has occurred within three (3) years of a prior SSO that occurred at the same location under any weather conditions (wet or dry). A "Recurring Dry-Weather SSO" shall mean an SSO that has occurred during dry weather within three (3) Years of a prior SSO at the same location that also occurred during dry weather. A "Recurring Wet-Weather SSO" shall mean an SSO that has occurred during wet weather within three (3) Years of a prior SSO at the same location that also occurred during wet weather.

Remedial Measures shall mean spot repairs, trenchless sewer rehabilitation, sewer replacement, repair or reconstruction, and any other appropriate WCTS improvement technique for resolving condition deficiencies and/or capacity deficiencies in a particular system asset or group of assets within the WCTS, in accordance with **Appendix D** of the Consent Decree ("Remedial Determination Process"), that have caused or significantly contributed to previous SSOs, and/or, that are likely to cause or significantly contribute to future occurrence of SSOs.

Sanitary Sewer Overflow or **SSO** shall mean any spill, release, or diversion of sewage from the WCTS, including: (1) an overflow that results in a discharge to Waters of the State or waters of the United States, and (2) an overflow of wastewater, including a wastewater backup into a building or wastewater overflow onto private property, such as a Building/Private Property Backup (other than a backup caused solely by a blockage or other malfunction in a privately owned sewer or building

lateral (i.e. a "Private Service Line")), even if that overflow does not reach Waters of the State or waters of the United States.

Sewershed shall mean a section of City's WCTS that is a distinct drainage or wastewater collection area and designated as such by City for the P Street WWTP and the Massard WWTP.

State of Arkansas or **State** shall mean the State of Arkansas acting on behalf of ADEQ.

Sub-basin shall mean a section of a Basin that is a distinct wastewater collection area and designated by Fort Smith as such.

Tabulation shall mean a document in a format containing text searchable cells or fields that is also sortable by data category.

United States or **U.S.** shall mean the United States of America, acting on behalf of EPA.

Wastewater Treatment Plant or WWTP shall mean the Massard or P Street wastewater treatment plants and components thereof.

Wastewater Collection and Transmission System or WCTS shall mean the sanitary sewer collection, retention and transmission systems for both the Massard WWTP Sewershed and the P Street WWTP Sewershed, including all pipes, Force Mains, Gravity Sewer Lines, Pump Stations, EQ Basins, manholes and appurtenances thereto, that are owned or operated by City at any time from the Date of Lodging of the Consent Decree until its termination under Section XXIV.

Waters of the State shall mean all streams, lakes, marshes, ponds, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies of accumulations of water, surface and underground, natural and artificial, public or private, which are contained within, flow through, or border upon the State of Arkansas, or any portion of the State of Arkansas, as defined in Ark. Code Ann. §84-102(10).

Year shall mean a twelve month period regardless of the beginning date. In the event a triggered event shall be due on a year ending date that does not exist (for example, February 29 in some years), then the event shall be due on the first day of the following month (for example, March 1).

Capacity, Management, Operation, and Maintenance (CMOM) Program Summary and Intent

On January 2, 2015, the City of Fort Smith, Arkansas (City) entered into a Consent Decree with the United States Environmental Protection Agency (EPA) and the State of Arkansas to address deficiencies within the City's wastewater collection and transmission system (WCTS). Per Section V, Article Seven of the Consent Decree, the City will prepare an effective WCTS Capacity, Management, Operation, and Maintenance Program ("CMOM Program") consistent with EPA's 2005 Guidance entitled "Guide for Evaluating Capacity, Management Operation and Maintenance Programs at Sanitary Sewer Collection Systems." All components of the CMOM Program, as set forth in Paragraphs 37-56, shall be submitted in report form to EPA for review and approval at a date no later than two (2) years from the Date of Lodging, with shorter submission dates for certain components. The Date of Lodging for the Consent Decree has been established as January 2, 2015.

The aggregate CMOM Program is comprised of 13 separate components that were developed to address deficiencies within specific elements of the City of Fort Smith's WCTS. Upon approval by EPA, each of the respective CMOM components is intended to be used by the City of Fort Smith as guidelines for the implementation of a defined set of procedures to satisfy the long-term requirements of EPA and promote compliance with the Clean Water Act (CWA).

Section 1

Consent Decree Requirements for the Gravity Sewer Line Cleaning Program Plan

The Gravity Sewer Line Cleaning Program Plan described herein has been prepared to satisfy the requirements set forth in Article Seven, Paragraphs 41 and 42 of the Consent Decree and must be submitted to EPA for review no later than twelve (12) months from the Date of Lodging of the Consent Decree (i.e., by December 31, 2015). Following EPA’s approval, the City will initiate the implementation of the Gravity Sewer Line Cleaning Program. **Table 1-1** provides a list of the Consent Decree requirements for the Gravity Sewer Line Cleaning Program and the sections of this document that addresses each requirement.

Table 1-1 Summary of Consent Decree Requirements for the Gravity Sewer Line Cleaning Program

Consent Decree Paragraph	Consent Decree Requirement	Gravity Sewer Line Cleaning Program Plan Section
41.a	Targeted Cleaning Program for Pipe Segments with Frequent Blockages – City shall continue its Targeted Cleaning Program in the areas of recurring blockages and/or recurring dry weather Sanitary Sewer Overflows (SSOs) employing cleaning frequencies required to prevent SSOs based on historical SSO information, closed circuit television (CCTV) investigations, customer complaints, Fats, Oil, and Grease (FOG) Control Program findings when available, and previous sewer cleaning investigations. The CMOM Program shall provide the criteria the City uses to place a pipe segment in this program, the rationale for the initial frequency of cleaning chosen, and the methodology used for changing cleaning frequencies.	3.2
41.b	Small-Diameter Gravity Sewer Line Cleaning Program – City shall implement a system-wide proactive cleaning plan whereby it cleans all small-diameter gravity sewer lines in the WCTS at least once every eight (8) calendar years. The City shall clean a minimum of ten (10) percent of the length of small-diameter gravity sewer lines in the WCTS per Calendar Year. The City shall complete cleaning activities following the schedule laid out in Tables 3-2 and 3-3.	3.3
41.c	Large-Diameter Gravity Sewer Line Cleaning Program – City shall clean all large-diameter gravity sewer lines on a ten (10) year cycle as warranted. City shall clean each large-diameter gravity sewer line pipe segment that City determines, based upon inspection results and other analyses, to have buildups of FOG, grit, debris, roots or other materials in any part of that pipe segment that obstruct more than twenty (20) percent of the pipe diameter. The City shall complete cleaning activities following the schedule laid out in Table 3-4.	3.4
42	Cleaning Program Reporting – City shall report the WCTS Cleaning Program activities performed in each calendar year in the Annual Report for that calendar year as described under Section X ("Reporting") of the Consent Decree	4.2

Section 2

Purpose and Goals of the Gravity Sewer Line Cleaning Program

The Gravity Sewer Line Cleaning Program is a component of the City's comprehensive CMOM Program and is intended to remove accumulated solids, debris, root intrusion, and any other obstructions that have caused or significantly contributed to previous SSOs, or that are likely to cause or significantly contribute to future occurrences of SSOs. The purpose of the Gravity Sewer Line Cleaning Program is to reduce the occurrence of blockages and SSOs and to support compliance, in concert with other CMOM Program components, with the Consent Decree, the CWA, and the City's National Pollutant Discharge Elimination System (NPDES) permits. This plan allows the City to identify priority problem areas within the gravity sewer system and develop an effective cleaning program to improve performance of the gravity sewer system.

Both proactive (i.e., preventative maintenance) and reactive (i.e., corrective maintenance) cleaning regimens are necessary to reduce the impact of blockages, thereby reducing occurrences of SSOs, in the City's gravity sewer system. Once implemented, the Gravity Sewer Line Cleaning Program will serve predominantly as a preventative maintenance component of the CMOM Program; however, the Program also tracks cleaning activities associated with other CMOM Programs.

As part of the Gravity Sewer Line Cleaning Program, the City of Fort Smith Utility Department must meet target lengths for both small- and large-diameter gravity sewer line cleaning. All small-diameter (<24-inch) gravity sewer lines are to be cleaned once every eight (8) years with a minimum of ten (10) percent of the total length of small-diameter gravity sewer cleaned each year. All large-diameter (\geq 24-inch) gravity sewer lines are to be cleaned once every ten (10) years, as warranted. These targets are outlined in the Consent Decree and detailed in Section 3 of this plan.

For purposes of the Gravity Sewer Line Cleaning Program, the term "cleaning" corresponds with the definition provided in Article Seven, Paragraph 41 of the Consent Decree as "removal from the gravity sewer system of fats, oils, and grease (FOG); debris; roots and/or any other obstructions that have caused or significantly contributed to previous sanitary sewer overflows (SSOs); and/or, that are likely to cause or significantly contribute to the future occurrence of SSOs."

Section 3

Elements of the Gravity Sewer Line Cleaning Program

The Gravity Sewer Line Cleaning Program is comprised of the following central elements:

- A Targeted Cleaning Program for pipe segments with frequent blockages;
- A small-diameter (<24 inch) Gravity Sewer Line Cleaning Program; and
- A large-diameter (≥24 inch) Gravity Sewer Line Cleaning Program.

In addition to these central program elements, Standard Operating Procedures(SOPs), training, reporting, and incorporation of Gravity Sewer Line Cleaning Program data into the City’s Information Management System (IMS) are all important to implementing an effective Gravity Sewer Line Cleaning Program and are discussed in more detail in the following sections.

According to EPA’s 2005 *Guide for Evaluating CMOM Programs at Sanitary Sewer System Collection Systems*, accurate recordkeeping is the backbone of an effective sewer cleaning program and shall be the basis for the City’s Plan. Observations and trends in records provide the City with information on areas of the gravity sewer system most susceptible to stoppages and inform an appropriate cleaning schedule.

3.1 Overview of City’s Gravity Sewer System

The City operates and maintains approximately 2,682,000 linear feet (508 linear miles) of gravity sewer lines, consisting of approximately 2,543,000 linear feet (482 linear miles) of small-diameter (< 24 inches) gravity sewer lines and approximately 139,000 linear feet (26 linear miles) of large-diameter (≥ 24 inches) gravity sewer lines. The distribution of gravity lines by pipe size category is presented in **Table 3-1**.

Table 3-1 Gravity Sewer Lines by Pipe Size Category

Pipe Size Category	Quantity (linear feet)	Quantity (linear miles)	Percentage of Total
Small-diameter (<24 inches)	2,543,000	482	95%
Large-diameter (≥24 inches)	139,000	26	5%
Total	2,682,000	508	100.0

3.2 Targeted Cleaning for Pipe Segments with Frequent Blockages

One objective of the Gravity Sewer Line Cleaning Program is to develop a process to identify and remediate areas of the gravity sewer system with a history of chronic/recurring blockages requiring increased frequency of cleaning and maintenance. Article Seven, Paragraph 41.a, of the Consent Decree requires the City to continue its Targeted Cleaning Program in the areas of

recurring blockages and recurring dry-weather SSOs by employing cleaning frequencies required to prevent SSOs based on historical information. When available, CCTV investigations, customer complaints, FOG Control Program findings, information from other available technologies, and documentation from previous sewer cleaning investigations will be considered when setting cleaning frequencies and priorities for Targeted Cleaning.

The City has an existing Targeted Cleaning Program that focuses cleaning activities on pipe segments that experience frequent blockages. Gravity sewer line segments in the Targeted Cleaning Program are cleaned at a frequency sufficient to avoid blockages in these segments, as evidenced by the absence of SSOs since being placed in the Targeted Cleaning Program. In general, as additional gravity sewer line segments are identified as experiencing frequent blockages, the segment is added to the Targeted Cleaning Program. When sewer line segments are addressed by other measures, such as the Condition Remedial Measures Program, the segments may be removed from the Targeted Cleaning Program. **Sections 3.2.1 and 3.2.2** outline the processes and details for identifying pipe segments for inclusion in, or removal from, the Targeted Cleaning Program, respectively.

Potential locations for targeted cleaning include those susceptible to FOG blockages, points of known debris accumulation, and areas with known root intrusion.

If the system is experiencing steady increases in blockages and/or SSOs, City staff will determine the cause (*e.g.*, increase in grease producing activities in the area, deterioration of sewers due to age, root intrusion) and take corrective action as soon as practicable.

3.2.1 Identifying Pipe Segments for Targeted Cleaning

The responsibility for maintenance of the list of sewers identified for Targeted Cleaning lies with the City's Sewer System Program Manager. The foundation of the Targeted Cleaning Program is the identification of pipe segments within the gravity sewer experiencing recurring blockages and dry-weather SSOs or those prone to accumulation of debris, FOG, etc. that may lead to a blockage. The Sewer System Program Manager utilizes available data, such as previous CCTV investigations, work orders or customer complaints, FOG Control Program findings, and documentation from previous sewer cleaning investigations, to determine if specific pipe segments should be included in the Targeted Cleaning Program or addressed through another program. Data that is collected on blockages and/or SSOs and how this translates into pipe segments being added to the Targeted Cleaning Program, or being addressed through another program, will be tracked.

When chronic blockage locations are also locations of known structurally defective piping within the gravity sewer system, the repair and elimination of these structural defects will be evaluated as needed under the Condition Remedial Measures Program. In the event that a segment is not scheduled for repair under the Conditional Remedial Measures Program in the near term, the segment will be evaluated and prioritized as part of the Targeted Cleaning Program, as these segments represent potential locations that may contribute to the future occurrence of SSOs. If and when a pipe segment is rehabilitated, then it will be evaluated for removal from the Targeted Cleaning Program list.

For line segments identified as structurally defective, the evaluation process within the Condition Remedial Measures Program will involve determining, for each identified defective line segment,

whether repair or replacement is the best course of action to eliminate an area of chronic buildup and prevent future blockages as compared to remaining in the Targeted Cleaning Program.

3.2.2 Management of Targeted Cleaning

The cleaning frequency of line segments identified for Targeted Cleaning is primarily determined based upon the amount of debris accumulation observed since the previous cleaning and/or sewer system surcharging observed upstream of the pipe segment. The initial cleaning frequency will be determined by the Sewer System Program Manager, and it will initially be set as either three (3) months, six (6) months, or twelve (12) months. As cleaning on these frequencies progresses, sewer segments that are relatively clean may have their cleaning frequency extended, while those with significant debris accumulation or surcharging of the upstream sewer system may be scheduled for more frequent cleaning in the future.

If a sewer segment included in the Targeted Cleaning Program experiences an SSO due to a blockage, the sewer will be assigned a more frequent cleaning in the future. Additionally, those segments will be further reviewed to determine if additional actions, such as a point repair or actions through the Root Control Program, are warranted. Data reviewed under this evaluation will include information collected from other programs including the FOG Control Program, Sewer System Assessments (SSAs), the Continuing Sewer System Assessment (CSSA) Program, and any other available information including customer complaints and other work order history as tracked within the IMS.

Gravity sewer line segments may be removed from the Targeted Cleaning Program after two years of data demonstrates that debris accumulation leading to blockages is no longer a concern in the line segment. Gravity line segments may also be removed from the Targeted Cleaning Program when other activities that are believed to address the primary cause of the problem at that location, such as repairing a defect or addressing the source of grease, have been conducted.

3.3 Small-Diameter Gravity Sewer Line Cleaning

Small-Diameter Gravity Sewer Line Cleaning will comprise part of the City's system-wide proactive cleaning program. The term "small-diameter gravity sewer lines" includes all gravity sewer lines less than twenty-four (24) inches in diameter. When calculating conformance with the ten (10) percent minimum length annual cleaning requirement, the City may include all unique gravity sewer lines cleaned each year as part of the following activities:

- Targeted Cleaning Program activities;
- SSA activities that include cleaning;
- CCTV inspections that include cleaning;
- Root removal operations;
- CSSA Program activities that include cleaning;
- all other WCTS cleaning services for any purpose, whether performed by City crews, consultants or contractors; and

- Emerging technologies to evaluate whether pipe segments need to be cleaned, as approved by EPA.

3.3.1 Schedule of Minimum Cleaning Benchmarks

The minimum schedule requisites of the Small-Diameter Gravity Sewer Line Cleaning Program are based on the Consent Decree requirements which state the following:

“The City shall implement a system-wide proactive cleaning program whereby it cleans all Small-Diameter Gravity Sewer Lines in the WCTS at least once every eight (8) Calendar Years. City shall clean a minimum of ten (10) percent of the length of Small-Diameter Gravity Sewer Lines in the WCTS per Calendar Year. However, if City cleans more than ten (10) percent of the length of Small-Diameter Gravity Sewer Lines in one Calendar Year (such as 2016) it may “bank” or count the excess length that was cleaned in that Calendar Year (2016) towards meeting the ten (10) percent annual minimum cleaning requirement in the following Calendar Year (2017), and only the following Calendar Year. Multiple cleanings of the same Pipe Segments may not be counted more than once in any Calendar Year.”

As discussed in the Consent Decree, the City is required to clean a minimum of ten (10) percent, or currently 48.2 miles, of the small-diameter gravity sewer lines in each calendar year, assuming there is no banking of sewers cleaned in the previous year. To meet this requirement, a sewer may be counted only once per calendar year. For instance, a sewer segment that is cleaned every six (6) months as part of the Targeted Cleaning Program may only be counted once towards the minimum ten (10) percent requirement for a given calendar year; however, it may be counted again in the following calendar year.

In order to maintain a cycle of a cleaning small-diameter sewer every eight (8) years, however, the City must achieve an annual cleaning goal (on average) that is greater than ten (10) percent. Assuming each small-diameter sewer was only cleaned once during an eight (8) year period, a goal of cleaning 12.5 percent of the small-diameter sewers has been established. Although it is understood that some calendar years may achieve cleaning rates below this goal (but at least ten (10) percent), most calendar years will exceed that value due to the need to frequently clean at certain locations (i.e., sewers in the Targeted Cleaning Program).

3.3.2 Sewer System Assessment (SSA) Cleaning Activities

The annual tracking of sewers cleaned allows for the inclusion of all gravity sewer lines cleaned pursuant to the SSA requirements as outlined in Section V, Article One of the Consent Decree, provided there is no double-counting of the same pipe segment in one calendar year.

The SSA description in the Consent Decree requires that the City complete the SSA activities as outlined in **Table 3-2** below. These benchmarks are based on unique miles of sewer assessed, and where cleaning is conducted, the sewers can be counted towards annual cleaning totals the City must report on in the Annual Reporting process. Although SSA activities include both small- and large-diameter sewer lines, the City anticipates the SSA activities will provide the majority of small-diameter sewer cleaning activities required during the first eight years of the Consent Decree implementation.

Table 3-2 SSA Activity Milestones

Consent Decree Milestone Date	Total Unique Miles of Gravity Sewer
Three (3) Years from Date of Lodging	150
Six (6) Years from Date of Lodging	300
Eight (8) Years from Date of Lodging	All remaining gravity sewer lines in accordance with Appendix C in the Consent Decree

In addition to meeting the SSA milestones outlined in **Table 3-2**, the City must perform SSA activities on no less than forty (40) unique miles of gravity sewer lines in each calendar year until completion of all SSA activities.

3.3.3 Tracking Small-Diameter Sewer Cleaning

Table 3-3 presents the annual goals, in terms of pipe length (miles), to meet the required schedule outlined in the Consent Decree, assuming an even distribution of cleaning activities each year. Because only the cleaning of unique sewers may be counted, the Targeted Cleaning Program is only shown in the first year, but Targeted Cleaning will continue in the following years and the amount of Targeted Cleaning may vary as remedial measures are implemented.

The City may enlist a contractor to assist with the additional cleaning or may complete that cleaning using “in-house” resources. The City may also elect to escalate the amount of cleaning over time as long as the minimum requirements are met.

Following completion of SSA activities, i.e. starting in Year 9, the majority of the small-diameter sewer cleaning will be performed in conjunction with the Continuing Sewer System Assessment Program.

Table 3-3 Annual Cleaning Goals for Small-Diameter Gravity Sewer Lines

8 Year Cycle	Year Number	Pipe Length to be Cleaned (miles)		Additional Length of Pipe to be Cleaned (miles)	Total (miles)**	
		SSA Activities*	Targeted Cleaning Program		Per Year	Cumulative
1st 8 Year Cycle	1	50	10		60	60
	2	50		11	61	121
	3	50		10.5	60.5	181.5
	4	50		10.5	60.5	242
	5	50		10.5	60.5	302.5
	6	50		10.5	60.5	363
	7	50		10.5	60.5	423.5
	8	50		10.5	60.5	484

Note:

*SSA activities are not required beyond year 8. After that point, cleaning will be performed in accordance with the Continuing Sewer System Assessment Program.

**A minimum of 10 percent of small-diameter lines must be cleaned each calendar year.

3.4 Large-Diameter Gravity Sewer Line Cleaning

The Large-Diameter Gravity Sewer Line Cleaning Program provides for the cleaning of sewers twenty-four (24) inches and larger. Unlike small-diameter sewers, the Consent Decree requires large-diameter sewers to be evaluated for cleaning on a ten (10) year cycle. Cleaning is conducted, as warranted, when inspection results or other analyses indicate the sewer has a buildup of FOG, grit, debris, roots, or other materials in any part of the sewer segment that obstructs greater than twenty (20) percent of the pipe diameter.

The City shall complete cleaning activities, as outlined in **Table 3-4**. Cleaning activities are defined as the evaluation of the need for cleaning and completion of cleaning when warranted. Large-diameter sewers will continue to be evaluated for the need for cleaning on a ten (10) year cycle following the initial activities under the Consent Decree. For example, a sewer that was evaluated for cleaning in calendar year 2017 will be re-evaluated for cleaning in 2027 or earlier, regardless of whether cleaning was conducted in 2017.

Table 3-4 Large-Diameter Gravity Sewer Line Cleaning Activities Milestones

Consent Decree Milestone Date	Total Unique Miles of Gravity Sewer
Three (3) Years from Date of Lodging	8
Six (6) Years from Date of Lodging	16
Ten (10) Years from Date of Lodging	All remaining miles of large-diameter lines

Note: Cleaning activities are defined as the evaluation of the need for cleaning and the completion of cleaning when warranted.

Section 4

Record Keeping and Reporting

4.1 Record Keeping

As required by the Consent Decree, records associated with the Gravity Sewer Line Cleaning Program will be saved in the Utility Department document management system and maintained as required under the records retention policy.

Sewer cleaning records currently maintained by the City include:

- Unique asset identifier
- Date, time, and location of cleaning activity;
- Method of cleaning used;
- Cause of blockage (if applicable);
- Identity of cleaning crew; and
- Further actions necessary and/or initiated.

A work order documenting the evaluation activities will be maintained for record-keeping purposes for large-diameter sewers that are evaluated for cleaning but are determined not to warrant cleaning.

Work conducted under SSA activities is currently recorded in a separate database but will be integrated with the City database in the future.

The City is currently updating its strategy for managing its field and office information. The City's plan for modifying its Information Management System (IMS), as described in Article Seven, Paragraph 50 of the Consent Decree, will be submitted to EPA for approval within twenty-four (24) months of the Date of Lodging (i.e., by December 31, 2016).

4.2 Reporting

Sewer line cleaning performance is measured by annual footage of unique sewers undergoing cleaning activities and the occurrence of SSOs resulting from blockages. Performance measures for routine cleaning activities include the following:

- Annual footage of small-diameter gravity sewer lines cleaned;
- Annual footage of large-diameter gravity sewer lines evaluated and/or cleaned; and
- Annual SSO occurrence due to gravity sewer lines blockages.

Per Article Seven, Paragraph 42 of the Consent Decree the City must report all WCTS cleaning activities performed in each calendar year in the Annual Report for that calendar year as described in Section X of the Consent Decree.

Section 5

Training and Standard Operating Procedures

5.1 Training

Per Article Seven, Paragraph 55 of the Consent Decree, the CMOM Program must include a Comprehensive Training Program (CTP) for technical and skills training for appropriate categories of the City's employees. The City's CTP plan will be submitted to EPA for approval within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016). The CTP will be directly related to the operation and maintenance of the sanitary sewer collection system for the purpose of responding to and preventing SSOs.

5.2 Standard Operating Procedures (SOPs)

The plan and schedule for developing Standard Operating Procedures (SOPs) for general operation and maintenance of all components of the WCTS will be detailed in a report submitted to EPA within eighteen (18) months of the Date of Lodging (i.e., by July 1, 2016) per the Consent Decree.