



CAPACITY, MANAGEMENT, OPERATIONS,
AND MAINTENANCE (CMOM) PROGRAM
AND IMPLEMENTATION PLAN

**Standard Operating
Procedures Program Plan**

June 2016

CITY OF FORT SMITH, ARKANSAS

Development of a Capacity, Management, Operation, and Maintenance Program (CMOM) and Assessment and Remediation Plan for Effluent Limit Exceedances

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.



Robert Roddy

Robert Roddy, Interim Director of Utilities
City of Fort Smith, AR
Utility Department

6/22/16

Date

Standard Operating Procedures 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
SCADA	Supervisory Control and Data Acquisition
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 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 Line 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 line

(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 (CMOM) 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 24 months 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 Standard Operating Procedures (SOPs) Program Plan

The SOPs Program Plan described herein has been prepared to satisfy the requirements set forth in Article Seven, Paragraph 53 of the Consent Decree and must be submitted to EPA for review no later than 18 months from the Date of Lodging of the Consent Decree (i.e., by July 1, 2016). Following EPA’s approval, the Utility Department will initiate the implementation of the SOPs Program. **Table 1-1** provides a list of the Consent Decree requirements for the SOPs Program and the sections of this document that address each requirement.

Table 1-1. Summary of Consent Decree Requirements for the SOPs Program

Consent Decree Paragraph	Consent Decree Requirement	SOPs Program Plan Section
53	A plan and schedule for developing Standard Operating Procedures ("SOPs") for general operation and maintenance of all components of the WCTS, including Gravity Sewers, manholes, Pump Stations, Force Mains, and all other major ancillary facilities.	
53	SOPs shall include all major work tasks required for the successful operation and maintenance of WCTS components including, but not limited to:	
53.a	Gravity Sewer Line and manhole cleaning and routine maintenance	3.1
53.b	Gravity Sewer Line CCTV and other internal inspections, including application of a nationally-recognized infrastructure condition scoring system that objectively rates the relative severities of the defects discovered	3.1
53.c	Manhole inspections, including application of a nationally-recognized infrastructure condition scoring system that objectively rates the relative severities of the defects discovered	3.1
53.d	Gravity Sewer Line and manhole construction, renewal, rehabilitation and repair performed by City crews	3.1
53.e	Pump Station general inspection, specific component inspection and testing, routine maintenance, and long-term maintenance to prevent Pump Station failures. Pump Station components include, but are not limited to: pumps, motors, engines, flow control valves, check valves, operating controls, electrical systems, SCADA systems and emergency power systems	3.1
53.f	Pump Station operational procedures, including adjustment/calibration of pump controls and operation of the alternate power system	3.1
53.g	Force Main and ancillary component inspection, routine maintenance and long-term preventive maintenance. Force Main ancillary components include, but are not limited to: check valves, flow control valves, air release valves, and vacuum breakers	3.1
53.h	WCTS ancillary component inspection, routine maintenance, and long-term preventive maintenance. WCTS ancillary components include, but are not limited to: flow splitting/combining structures and equipment, flow control devices, flow measurement devices, and EQ Facilities	3.1
53.i	All major work tasks required under the OERP for responding to and resolving SSOs and blockages in Gravity Sewer Lines, SSOs as a result of Pump Station malfunctions and/or hydraulic overloading, and SSOs resulting from Force Main failures	3.1

Section 2

Purpose and Goals of the SOPs Program Plan

The purpose of the SOPs Program is to provide a standardized set of instructions to be utilized by the Utility Department so as to promote the safe, effective, and successful work processes related to the operation and maintenance of the WCTS.

EPA's 2007 guidance document for SOPs, *Guidance for Preparing Standard Operating Procedures (SOPs) (QA/G-6)*, defines SOPs and their purpose in the following two passages:

“A Standard Operating Procedure (SOP) is a set of written instructions that document a routine or repetitive activity. The development and use of SOPs are an integral part of a successful quality system as it provides individuals with the information to perform a job properly, and facilitates consistency in the quality and integrity of a product or end-result.”

“SOPs detail the regularly recurring work processes that are to be conducted or followed within an organization. They document the way activities are to be performed to facilitate consistent conformance to technical and quality system requirements and to support data quality. They may describe, for example, fundamental programmatic actions and technical actions such as analytical processes, and processes for maintaining, calibrating, and using equipment. SOPs are intended to be specific to the organization or facility whose activities are described and assist that organization to maintain their quality control and quality assurance processes and ensure compliance with governmental regulations.”

Expanding on the EPA's G-6 definition, SOPs are also a formalized mechanism to capture and preserve institutional knowledge from experienced employees to avoid potential knowledge gaps resulting from staff retirements and attrition. Therefore, SOPs are also an important component of an organization's personnel training program, including, but not limited to, the formalized orientation process for new hires.

The purpose of the SOPs Program Plan is to provide a plan and schedule for developing SOPs for general operation and maintenance of the WCTS. It also includes the procedures for developing SOPs including a standardized format.

Section 3

Elements of the SOPs Program Plan

As part of the CMOM program, the SOPs Program, which is based on processes established by the *EPA QA/G-6 Guidance for Preparing Standard Operating Procedures*, is intended to provide the framework for the phased development of SOPs for the general operation and maintenance of the WCTS and includes the following elements:

- List of proposed SOPs for each of the WCTS components;
- Proposed schedule for development of SOPs;
- Procedures for developing or modifying SOPs; and
- Standard composition and outline of SOPs.

In addition to these central program plan elements, training, reporting, and incorporation of SOPs into the Information Management System (IMS) are all critical to the implementation of an effective SOP Program and are discussed in more detail in subsequent sections of this plan.

3.1 Proposed SOPs for Development

As outlined in the Consent Decree, SOPs shall be developed for general operation and maintenance of all components associated with the WCTS including:

- Gravity Sewers and Manholes;
- Pump Stations and Force Mains;
- Equalization (EQ) Storage Facilities;
- Overflow Emergency Response Procedures (OERP); and
- Safety.

The SOPs will function as discrete sets of concise instructions for executing routine activities related to specific work tasks associated with the respective WCTS operation and maintenance component.

Table 3-1 lists the SOPs that the Utility will develop for general operation and maintenance of all components of the WCTS, including gravity sewers, manholes, pump stations, force mains, and all other major ancillary facilities and for the OERP that will be implemented as part of the CMOM Program. The development and implementation schedule, also included in **Table 3-1**, takes into consideration the complexity of the SOPs to be created; the availability of resources; documents needed to establish the SOPs; the availability of key staff that will be interviewed and/or provide review of the SOP; and the scheduling of the subject work covered by each SOP. The schedule includes three phases of development to be completed in either 24 months, 48 months, or 72

months from approval by EPA. SOPs for “safety” and “OERP tasks” are highest priority and will be completed within 24 months.

The operation and maintenance tasks associated with a specific SOP shall be observed in the field, during both the development and implementation phases, so that adjustments can be made to the SOP document based on these observations. In some cases, the subject SOP activity may only be performed on an infrequent basis (such as annually); therefore, the field evaluation will be conducted during the subsequent scheduled activity date. In other cases, the subject activity may be one that occurs infrequently (such as an emergency response to a force main break), and thus, may require the activity to be simulated. Consequently, due to the time-contingent nature of these field evaluations, a minimum 24-month interval for the implementation of the first set of SOPs (**Table 3-1**) has been established to accommodate the field evaluation and subsequent edits to the draft SOP. The field evaluation of the execution of SOPs is discussed in further detail in Section 3.2.3.

Table 3-1. Proposed SOPs

Category	SOP Code	SOP Title	Proposed Schedule* (Months)	Consent Decree Paragraph
Gravity Sewers & Manholes	Gravity Sewer and Manhole Cleaning and Maintenance			53a
	0100-001-SWR	Assessing Blockage Conditions	72	
	0100-002-SWR	Using a Rod Truck to Clear a Blockage	48	
	0100-003-SWR	Using a Wash or Jet Truck to Clear a Blockage	48	
	0100-004-SWR	Normal Cleaning	48	
	0100-005-SWR	Determining the Results	72	
	0100-006-SWR	Work Site Cleanup	48	
	0100-007-SWR	Disposal of Removed Materials	48	
	Gravity Sewer CCTV and Other Inspections			53b
	0200-001-SWR	Setting up for Camera Insertion	48	
	0200-002-SWR	CCTV of Main Lines under 12 inches	24	
	0200-003-SWR	CCTV of Main Lines 12 inches or Greater	24	
	0200-004-SWR	Pipeline Assessment & Condition Coding, Records, and Reports	24	
	0200-005-SWR	Logging Inspection Observations	48	
	0200-006-SWR	Encountering Obstructions and Freeing the Camera	48	
	0200-007-SWR	Removal, Cleaning and Storage of the Camera and Cable	48	
	0200-008-SWR	Documenting the Work	48	
	0200-009-SWR	Inspecting City Cleanouts	72	
	0200-010-SWR	Inspecting Owner Cleanouts	72	
	0200-011-SWR	Inspecting a Main Line for Line Stoppage	72	
	0200-012-SWR	Tracing Service Lines	72	
	0200-013-SWR	Dye Testing	48	
	0200-014-SWR	Smoke Testing	48	
	0200-015-SWR	Inspection of Flow Measurement Devices	72	
	Manhole Inspection			53c
	0300-001-SWR	Manhole Cover Removal and Replacement	48	
	0300-002-SWR	Manhole Inspection Procedures and Forms	48	
	0300-003-SWR	Manhole Assessment & Condition Coding	48	

Category	SOP Code	SOP Title	Proposed Schedule* (Months)	Consent Decree Paragraph
	Gravity Sewer and Manhole Construction, Renewal, Rehabilitation, and Repair			53d
	0400-001-SWR	Manhole (MH) Repair - Point Repair	24	
	0400-002-SWR	Using Rim Inserts to Raise Elevation of MH Frame/Rim	72	
	0400-003-SWR	Patching MH Barrels and Cones Using Cement	72	
	0400-004-SWR	Patching MH Barrels and Cones Using Hand Troweled Grout	72	
	0400-005-SWR	Documenting Site Conditions, Pre-installation	48	
	0400-006-SWR	Main Line Excavation	24	
	0400-007-SWR	Installation of Pneumatic Plugs	24	
	0400-008-SWR	Main Line Point Repair Under 12 inches	24	
	0400-009-SWR	Main Line Point Repair 12 inches or Greater	24	
	0400-010-SWR	Making a Tap into the Main Line	24	
	0400-011-SWR	Connecting the Line and Testing the Connection	24	
	0400-012-SWR	Backfilling, Tamping and Covering Work	48	
	Pump Station Inspection and Maintenance			53e
	0500-001-SPS	Routine Inspection and Testing of Station Facilities (Daily Activities)	24	
	0500-002-SPS	Routine Inspection and Testing of Station Facilities (Weekly Activities)	24	
	0500-003-SPS	Routine Inspection and Testing of Station Facilities (Monthly Activities)	24	
	0500-004-SPS	Routine Inspection and Testing of Station Facilities (Quarterly Activities)	24	
	0500-005-SPS	Routine Inspection and Testing of Station Facilities (Annual Activities)	24	
	0500-006-SPS	Alarm System Functional Testing	48	
	0500-007-SPS	Alternate Power System Inspection	48	
	Pump Station Operational Procedures			53f
	0600-001-SPS	Pump Removal and Installation	48	
	0600-002-SPS	Wetwell Cleaning Procedure	48	
	0600-003-SPS	Troubleshooting Pumping Problems	48	
	0600-004-SPS	Adjustment/Calibration of Pump Controls	48	
	0600-005-SPS	Odor Control Measures	72	
	0600-006-SPS	Flow Splitting Device Operation	48	
	Force Main and Ancillary Component Inspection and Maintenance			53g
	0700-001-SPS	Force Main Locate	48	
	0700-002-SPS	Evaluation of Force Mains for Inspection	48	
	0700-003-SPS	Inspection, Cleaning, and Replacement of Force Main Ancillary Equipment**	48	
	0700-004-SPS	Annual Review of Discharge Head to Determine Cleaning Needs	72	
	Ancillary Component (EQ Basin) Inspection***			53h
	0800-001-SEF	Monitoring for Solids and Cleaning Procedure	72	
	0800-002-SEF	Routine Inspection	48	
	Overflow Emergency Response Program Major Tasks			53i
	0900-001-SWR	SSO Operations - Notification Procedure	24	
	0900-002-SWR	SSO Operations - First Response Procedure	24	
	0900-003-SWR	SSO Operations - Bypass Pumping Operation	24	
	0900-004-SWR	SSO Operations - Treatment of Overflow	24	
	0900-005-SWR	Sewer Blockage or Surcharging	24	
	0900-006-SWR	Response to Sewer Backup into Building	24	
	0900-007-SWR	Sewer Main Break/Collapse	24	
	0900-008-SWR	Wastewater Pump Station Alarms—General Response Actions	24	

Category	SOP Code	SOP Title	Proposed Schedule* (Months)	Consent Decree Paragraph
	0900-009-SWR	Secondary Power Failure During Power Outage	24	
	0900-010-SWR	Sewage Force-Main Break (residential neighborhood and cross country easement non-residential area)	24	
Safety	Safety			
	1000-001-GEN	Work Zone Traffic Control	24	
	1000-002-GEN	Confined Space Entry	24	
	1000-003-GEN	Trenching and Shoring	24	

* Proposed schedule lists number of months, following EPA's approval of the plan, for implementation of each specific SOP.

** Force Main ancillary components include, but are not limited to, check valves, flow control valves, air release valves, vacuum breakers, and all other appurtenance equipment.

*** The WCTS does not currently include any other ancillary components apart from the EQ basins. However, if any future ancillary components are added to system, such as flow control devices, flow measurement devices, SOPs shall be developed accordingly.

3.2 Procedures for Developing or Modifying an SOP

The staple of a successful SOP development program is that it be conducted as a collaborative effort. Therefore, the process of developing effective SOPs will entail leveraging the Utility's institutional knowledge by engaging knowledgeable Utility personnel in order to capture and preserve that expertise as part of the documents.

In developing SOPs, the Utility will follow the process outlined in the following subsections.

3.2.1 Collaboration on the First Draft of the SOP

The process will begin by identifying the key personnel within the Utility who are associated with the subject matter being addressed in each SOP. Once the appropriate personnel are identified, one or more workshops will be conducted with these select staff members to provide a forum where they can share knowledge on operations and related equipment, which they deem as necessary for safe and effective practices relating to the SOP's subject matter. The workshop(s) will also be an opportunity for personnel to provide feedback on potential pitfalls/hazards associated with specific operations and the procedures necessary to minimize/avoid likelihood of encountering such issues in the future.

Once complete, the pertinent information compiled from the workshop(s) will be incorporated into a first draft of the SOP.

3.2.2 Review of the First Draft of the SOP

Following the completion of the draft SOP, the SOP will be reviewed to identify any incorrect information or potential hazards associated with the procedures provided in the SOP. Once reviewed and comments are provided, modifications will be made to the document, as necessary.

3.2.3 Field Evaluation

The next step will involve scheduling a meeting with the appointed representatives to perform a field evaluation (field-proofing). The field evaluation will consist of observing Utility field personnel using the draft SOP to perform operational and maintenance tasks, and checking that crews are able to execute the SOP directives as written. Deficiencies observed during the field

evaluation will be documented, and the draft SOP will be modified, as needed. Additionally, the field evaluation can be used to perform the following tasks:

- Identify any tools and/or personal protective equipment (PPE) required to perform the procedure safely and efficiently to include in the final SOP.
- Take photographs of the process/equipment and or create simple schematics. These photographs and/or schematics can be included in the final SOP.
- Identify or create checklists or other attachments that will enhance the ability to perform the procedure.

In some cases, the subject SOP activity may only be performed on an infrequent basis (such as annually); therefore, the field evaluation will be conducted during the subsequent scheduled activity date. In other cases, the subject activity may be one that occurs infrequently (such as an emergency response to a force main break), and thus, require the activity to be simulated. Consequently, due to the time-contingent nature of these activities, a minimum 24-month interval for the implementation of the first set of SOPs (**Table 3-1**) has been established to accommodate the field evaluation and subsequent edits to the draft SOP.

3.2.4 Incorporation of Changes

Following the field evaluation, the document will be modified to reflect any remaining changes identified during the walk-through and integrate photographs and/or schematics into the text. The final draft of the SOP will be distributed for review to the individuals identified for review. Some review comments may require further clarification, either with the individual and/or at the site.

To assist in cataloging the SOP documents, Utility-appointed personnel will use a SOP Code based upon process/activity location, process/activity type, or equipment/location ID numbers corresponding to an index of the SOPs applicable to that particular equipment or location (see code examples in **Table 3-1**). The final SOP should incorporate a revision date and a coding to account for revised versions.

3.3 Standardized Composition of SOPs

SOPs should be written in a concise, step-by-step, easy-to-read format with sufficient detail, so that a person with limited experience or knowledge of the procedure, can successfully reproduce the procedure unsupervised. The information presented should be unambiguous and not overly complicated. Typical format and composition for development of an SOP are provided in the following subsections, 3.3.1 and 3.3.2.

3.3.1 SOP Page Setup

A critical element of a suitable SOP is consistency in the formatting. A consistent SOP format would begin with the document's headers. A typical header will contain the minimum information as provided in **Figure 3-1**.

STANDARD OPERATING PROCEDURE CATEGORY: SOP CODE: SOP TITLE:	REVISION NUMBER: XXX REVISION DATE: XX/XX/XXXX PAGE 1 of n
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Figure 3-1. Typical SOP Header

3.3.2 Typical Outline for SOPs

Table 3-2 describes a typical outline for the SOPs. Adhering to this sectional outline will facilitate a level of consistency/uniformity throughout the SOPs pertaining to the WCTS.

Table 3-2. Typical SOP Outline

Subsection Number	Subsection Title
1.0	Objective
2.0	Background
3.0	Safety Procedures
4.0	Potential Hazards
5.0	Associated Procedures
6.0	Responsibilities
7.0	Required Equipment
8.0	Restrictions or Limitations
9.0	Procedure
10.0	References
11.0	Review and Updating

Once the SOP Program has been implemented, abbreviated file names, such as the SOP code, may be used for identification purposes. As such, when a new SOP is created, or an existing SOP is amended, the abbreviated file names will serve in identifying the SOPs. Furthermore, when a new SOP is developed, the outline in **Table 3-2** will provide the standardized list of information for inclusion in the document.

Section 4

Record Keeping and Reporting

4.1 Record Keeping

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

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

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

4.3 Periodic Review, Evaluation, and Revision

As part of the Utility's annual reporting process, the Program shall be reviewed and evaluated by Utility personnel in order to determine whether the objectives set forth by the Consent Decree are being met, or if improvements to the plan are needed. If an element of the Program is identified as being ineffectual or impracticable, then the Utility will propose the necessary amendments, or submit a revised plan, as part of the Annual Report.

Section 5

Training

Training on SOPs will involve managers reviewing relevant SOPs with staff and confirming their understanding.

Per Article Seven, Paragraph 55 of the Consent Decree, the CMOM Program must also include a Comprehensive Training Program (CTP) for technical and skills training for appropriate categories of the Utility's employees. The CTP plan will be submitted to EPA for approval within 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 WCTS and include the details of staff training on SOPs as appropriate.