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**METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY**

May 27, 2009

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Re: DOJ Case No. 90-5-1-1-09000  
Submittal of Updated Spill and Overflow Response Plan (SORP)

Gentlemen:

In accordance with the provisions of the Consent Decree, Section VII (Performance of the Work), Subsection C (Capacity, Management, Operation and Maintenance "CMOM" Programs), Paragraph 2 (Specific CMOM Program Development – Spill and Overflow Response Plan "SORP"), herewith we are transmitting an updated SORP along with a



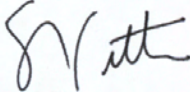
summary document highlighting changes that were made to the SORP that was previously submitted on May 4, 2007.

A copy of this report and summary is concurrently being placed in the Public Document Repository (PDR).

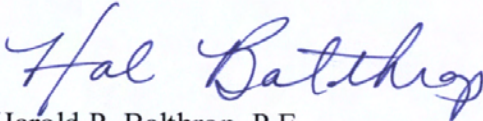
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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.

If you have any questions concerning this updated plan please contact me.

Sincerely,



Scott A. Potter, P.E.  
Director



Harold P. Balthrop, P.E.  
Assistant Director – System Services

Cc: Mr. Cyrus Q. Toosi, P.E., Assistant Director, Engineering  
Mr. David Tucker, Assistant Director, Operations  
Mr. Thomas G. Cross, Associate Director, Metropolitan Department of Law

## **Summary of Key Changes to Metro Water Services' (MWS) Spill and Overflow Response Plan (2007 comparison to 2009)**

The following are examples of key additions and/or modifications of issues and practices in the new SORP that are either a refinement of original practices or an addition to the May 4, 2007 SORP. They are listed as a brief for advisement to readers and users of the MWS SORP.

### **Change of Sewer Overflow Response Plan to Spill and Overflow Response Plan (SORP)**

This change was made to be consistent with reference of document in Consent Decree.

### **Addition of Combined Sewer Overflow (CSO) to SORP**

MWS incorporates SORP principals in the combined sewer system (CSS) in addition to the sanitary sewer system (SSS) as appropriate and applicable

### **Proactive use of MIKE URBAN Sewer Model to predict locations of overflows in certain storm events to do field investigations and corrective actions**

MWS is continuing to refine use of technologies in the management of the collection system. One of these is the calibration and interpretation of the sewer model to advise of potential overflow locations for certain rain events. This enables preliminary field observation during non-events for evaluation of any physical modifications to enhance system containment such as the installation or re-establishment of water-tight castings or manhole casting elevation changes. It also enables the establishment of work orders for specific assets (manholes) for field response during rainfall events to visit and observe any spill and overflow activity for reporting and any needed clean-up. This technology has and continues to be a vital tool in MWS' long-term corrective action as will be determined in the Corrective Action Plan / Engineering Report (CAP/ER).

### **Preemptive site visits of known overflow locations during certain rain events**

See descriptions of activity above

## **All overflow activity will be documented including sewer back ups into homes and business as a result of public infrastructure**

MWS reports overflow events to the Tennessee Department of Environment and Conservation (TDEC) as soon as possible after an event and then reconciles all events in the Monthly Operational and Overflow Reports. This monthly report includes information that is reported on the notification (date, time, location, impacted waters of the state, clean-up, etc) and includes additional information such as event duration, volumes and related rainfall if applicable. These notifications and reports include all overflows including sewer back ups into homes and businesses. This information is also kept in MWS' asset database (currently Hansen).

## **Wet weather overflows will be investigated to determine if defect or blockage contributed and take corrective action, as needed**

MWS investigates all overflow locations that are not rain-induced or that are rain-induced but do not have a recorded history of activity. This enables necessary any needed corrective action such as replacing manhole frames and covers, repairing broken pipe, replacing missing service line clean-out caps, etc. MWS utilizes Pipeline Assessment and Certification Program (PACP) coded technology (currently via Granite XP) as a means to qualify and quantify the severity of the problem. Often times cleaning will remedy the problem. More serious infrastructure problems are addressed through point repairs, rehabilitation or replacement. On chronic overflow locations awaiting system-wide address, MWS utilizes flow monitoring data and/or observed activity levels to detect any increases that may result in further investigation and subsequent intermediate corrective action of discovered defects that might be easily solved thus lessening overflow volumes and durations.

## **Monthly Overflow Committee, Overflow Abatement Program and CAP/ER results in projects for Capital Improvement Program**

MWS reviews, both immediately following an event and then during a monthly review, all discovered sewer defects and determines any corrective action necessary. As mentioned earlier, corrective action may include cleaning, repair, rehabilitation, replacement or paralleling or a combination depending on the problems and/or the needed capacity improvements. Rain-induced overflow locations that are due to system-wide defects and related inflow and infiltration (I/I) will be addressed through the development of projects in the CAP/ER. This Plan is under development and is expected to be completed no later than two years from March 12, 2009 (entry date in the Consent Decree). Non-CAP/ER project defects and/or more immediate public health and safety related defects are reviewed to determine any immediate action needed. Examples of severe defects requiring more immediate action would include (via PACP coding) visible soil, missing pipe, protruding tap, etc. Collapse or blockage are considered an emergency and are addressed immediately. All activities are

reviewed for expensing as capital budget expense or an operating budget expense depending on the corrective action taken.

### **Modifications of First Responder to various types of overflows**

MWS is staffed 24 hours a day, 365 days a year. Staffing levels for each shift has been determined utilizing best practice for routine work and historic record of emergency events. This information is used to determine staffing levels in number of personnel and skill sets. In terms of response to sewer complaints, MWS utilizes various personnel and methods when responding. Outside normal business hours, MWS utilizes mandatory on-call staffing for emergencies including major sewer overflow events. All staff on every shift is trained in the processes of the SORP. This enables a more unified and consistent response.

### **Addition of dedicated Trunk Line Crew to supplement original CSS Regulator Crew to perform regular manhole inspections in dry weather and wet weather conditions**

This crew was determined to be necessary due to the miles of wastewater infrastructure and the objective to find defects in the collection system that are potentially dangerous to the public and may result in system failure and/or the introduction of extraneous flow. Other crews, including the Regulator Crew, had specific assignments that including trunk line and smaller line size segments but it was determined that a more directed measure be taken. Both the Regulator Crew and the Trunk Line Crew may perform routine and emergency work in both the CSS and the SSS as system demands warrant.

### **Mobile Workflow Management (MWM) has been implemented enabling better follow up of needed actions**

Through this mobile dispatch tool's completion screen, MWS' field personnel are able to complete work and report problems in real-time. This enables more reliable asset data in MWS' Computerized Maintenance and Management System (CMMS) and reduces or eliminates the potential for missing or lost requests for needed follow-up work. Field personnel can create work orders from the field that is then processed through MWM for completion. MWM did not exist at the time of the original submittal of the SORP dated May 4, 2007.

### **Pilot partnership with RedZone Robotics to inspect 8-inch to 12-inch sewer with new technology for faster inspections and better information**

This May through June, 2009 pilot project is to evaluate and determine any long-term relationship with robotic technology for sewer inspection. Preliminary results are favorable but full determination will not be made until June/July of

2009. This technology is to supplement MWS' current Closed Circuit Televising (CCTV) technology.

### **Flow Monitors**

MWS continues to refine its use of flow monitors for mainline monitoring, sub-basin delineation and incorporation at overflow locations where hydraulic conditions are conducive for monitoring. This ability to quantify flows assists in the determination of rain-induced impacts, groundwater effects and any subsequent corrective action. It also plays a vital role in calibrating the hydraulic sewer model (MIKE URBAN) which is used in the development of the CAP/ER.

### **If suspicious materials are discovered or suspected in overflows, MWS Environmental Compliance Officer and MWS NPDES Section will assist**

MWS responses to overflows that demonstrate (sight, smell, etc) non-typical sanitary characteristics may require the involvement of others departmental resources. These resources may include the Environmental and NPDES sections. Steps taken to determine content may include sampling and/or further field investigations to identify and isolate point source. Depending on any determinations, HAZMAT protocols may be incorporated as needed. MWS' personnel are trained in appropriate responses to such events.

### **Sensitivity to endangered wildlife**

Consideration is given to endangered species habitat in the Nashville collection system service area watershed as it relates to maintenance, repair and remediation activities. Coordination of activities are made with appropriate agencies.

### **Use of filtration methods during SSO events**

Where containment and retrieval may not be practical, MWS may incorporate the use of tools to capture solids of overflowing sewers until total corrective action may be achieved. Tools used for this purpose may include hay bales and booms. Coordination of such activities may involve NPDES staff.

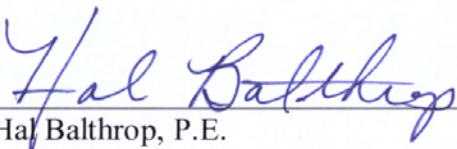


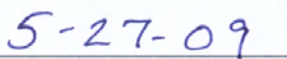


**Spill and Overflow Response Plan  
For  
Metro Water Services  
Nashville, TN**

**Submitted to EPA May 27, 2009**

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.

  
Hal Balthrop, P.E.

  
Date

# **Executive Summary**

## **MWS's Spill and Overflow Response Plan**

The Spill and Overflow Response Plan (SORP) outlines the actions Metro Water Services (MWS) will take to reduce the impact of sanitary sewer overflows (SSO) and combined sewer overflows (CSO) on our customers and the environment as well as to comply with regulatory requirements.

### **1. Staff Communication and Duties**

To ensure that MWS is made aware of each SSO or CSO as expeditiously as possible, there are several methods by which SSO or CSO will be identified. From a proactive standpoint MWS is utilizing its MIKE URBAN Sewer Model to predict locations that may overflow under certain storm event conditions. This enables field investigations and the determination of corrective actions such as water-tight frame and covers and/or the raising of manhole elevations. Care has to be taken to ensure that until more comprehensive corrective action such as rehabilitation, parallel sewers or replacement can be performed that the modifications to the potential overflow locations do not result in a back-up into homes or businesses. Another common means of overflow notification comes from individuals who witness the event and call MWS's Customer Service Center (CSC) at 862-4600. CSC representatives or MWS Dispatcher take reports ranging from manhole overflows to sewage on private property. MWS employees/field crews, city employees, 911, or other agencies may also report SSO or CSO to the MWS Dispatch. Some calls originate in the Control Room at the Omohundro Water Treatment Plant as a result of the Department's Supervisory Control and Data Acquisition System (SCADA). Automated systems, such as ADS flow monitors with Intelliserve and Data Acquisition System (SCADA) at pumping facilities, alert MWS that an investigation is warranted. The processes by which SSO or CSO are reported and the actions generated from a report of an overflow are detailed in Sections 4.1, 4.2, and 4.3.1. The responsibilities of MWS employees charged with responding to SSO or CSO are outlined in Sections 3.3-3.6.

### **2. Prompt Response to SSO or CSO**

MWS performs pre-emptive site visits of known wet-weather overflow locations during certain rainfall events. Although field conditions can vary that may result in an overflow (water table, rain intensity, etc), these site visits are based on historic overflow activity during certain rainfall events. These investigatory activities are documented in MWS Computerized Maintenance and Management System (CMMS) and any required follow-up action is performed in accordance with this SORP. For reported overflow events, MWS will make all reasonable efforts to respond to a reported SSO or CSO with qualified and equipped personnel within sixty (60) minutes of being notified (Section 4.2). Allowances will be made to ensure that the safety of the Responder and the public is the first priority. As with all field work, record of all verified SSO or CSO activities, including response times, will be maintained (Sections 3.4, 4.3.1, and 4.6). The details pertaining to MWS's response to SSO or CSO will be stored in a database that will be used for reporting and to analyze and evaluate MWS's performance. All overflow activity will be documented including events that result in sewer backing up into homes and businesses as a result of public infrastructure issues.



### **3. Assessment of Cause and Impact**

An important first step is the identification of the cause of an SSO or CSO (Section 4.3.2). The various causes will determine the type of mitigation or remediation that is most appropriate. Wet weather overflows are usually caused by inflow and infiltration (I/I), while dry weather overflows may result from blockages caused by roots, debris, grease or a combination of some or all. SSO or CSO occurring during rain events may be as a result of a combination of I/I and blockage. At locations that are not chronic wet-weather overflow locations, as soon as system flow conditions allow, MWS will perform closed circuit television (CCTV) work to determine whether there is a defect or blockage that may be contributing to the overflow. Any subsequent corrective action required is taken.

When evaluating the potential impact of an SSO or CSO on public health and the environment, sensitivity factors will be evaluated. These factors will determine the level of public notification and clean up activity required. These sensitivity factors may include proximity or impact to:

- Streams, creeks, and other natural waterways
- Heavy pedestrian or inhabited areas
- Special facilities such as schools, public parks, walking trails, etc.

The process by which MWS will assess if an SSO or CSO has had any adverse impact on human health or the environment is described in Sections 4.3.5, 4.3.6, and 4.3.9.

If a backup has occurred on private property, MWS will respond to backups in accordance with the SORP. MWS will conduct an investigation to determine if the cause is a problem in the MWS system or is as a result of a failure on the customer's side (considered private trouble). The process by which a property owner may follow to dispute MWS' determination that a building backup is caused by a failure in their private lateral is outlined in Section 4.3.2.

### **4. Elimination of Cause and Mitigation of Impact**

Once the cause of an SSO or CSO has been identified, the proper type of remediation can be chosen. Section 4.3.11 summarizes common abatement resolution activities and repairs that can be used independently or combined based on field conditions and television inspection. The MWS resources, including personnel and equipment needed and available to perform these activities and repairs, are listed in Sections 3.5, 3.6 and 3.8. When possible, flow diversion techniques provide an effective means of conveying the overflow back into the sewer system. This procedure reduces additional potential impact on the immediate area and the possible impact downstream. Flow diversion techniques employed by MWS when practicable are listed in Section 4.3.10. Where practical, control zones will be established for every SSO or CSO to help prevent public access around the perimeter of the affected surface area using appropriate signs and barricading practices (Section 4.3.6). Other methods for minimizing human contact with overflows can be found in Sections 4.3.9, 4.3.10, 4.3.12, and 4.4. Standard containment procedures for typical SSO or CSO can be found in Section 4.3.9.

### **5. Clean up of SSO or CSO**

After an overflow has occurred, MWS's clean up of the impacted area will be thorough and comprehensive. General practices, depending on the individual situation, are outlined in Section 4.3.12. To minimize any further impact on human health or the environment, follow-up inspections and root cause analyses will be performed to identify the specific cause of the overflow. Methods for determining the causes of SSO or CSO may include television inspection, smoke testing, visual

inspection, etc. (Section 4.3.13). If a building backup is found to be caused by a collection system failure on the public main, MWS notifies Metro Nashville Legal Claims to dispatch an independent cleaning and restoration contractor to assist in cleaning, sanitizing, and repairing damage (Section 4.3.2). If a building backup is found to be caused by a service lateral failure, the customer will be advised that the public collection system is functional and that they may need to seek the services of a third party agent (plumber) to remedy the problem. If efforts on the part of the customer to remedy their service lateral failure is unsuccessful, and owner has provided clear and open access to service line, MWS will perform any investigatory and corrective work on portions of the customer's service lateral that are inside the right-of-way or easement. Residential customers will not be charged for this service. Commercial customers will be charged the actual cost of this service at no profit.

## **6. Routine Reports to the Public**

MWS will provide an initial notice to TDEC of an SSO or unpermitted CSO within twenty-four (24) hours of the time it becomes aware of an SSO or CSO, as required by NPDES permits. The complete reporting process that includes the initial and Monthly Overflow Reports by which MWS notifies TDEC is summarized in Sections 4.2 and 4.5. MWS will post a monthly summary of each SSO or CSO on MWS's Web site.

## **MWS' Spill and Overflow Response Plan (SORP)**

### **1. Utility-Specific**

Based on the needs of our service area and customer base, MWS has developed this Spill and Overflow Response Plan (SORP) to serve as a guide to provide an efficiently maintained and operated sanitary sewer system and to reduce the negative impact on the environment and hazards to public health.

### **2. Purposeful**

This program will reduce the potential negative impact of SSO or CSO on public health and the environment through the implementation of a systematic response to overflows. This program:

- Supports customer service
- Standardizes reporting procedures
- Establishes system performance goals
- Protects system assets
- Protects public health
- Protects water quality

### **3. Goal-Oriented**

MWS developed this SORP to reduce the impact of SSO or CSO for our customers and the environment and to comply with regulatory requirements. It provides structured guidance for response to overflows, including a range of appropriate and effective field activities MWS can choose from to meet the needs of each situation. MWS will use its discretion and best professional judgment to evaluate each event and choose the appropriate remediation tools.

### **4. Uses Performance Measures**

To measure the performance of the “respond to wastewater trouble” process, MWS reports the date/time an overflow was reported to MWS and the date/time MWS Responder arrived on scene and actually observed the overflow to begin addressing the problem. Other performance indicators reviewed include, but are not limited to:

- Quality of response
- Safety of personnel and equipment during wastewater service response
- NPDES compliance
- Adherence to SORP

### **5. Periodically Evaluated**

MWS will review the SORP annually and amend it as appropriate. The review will include, at a minimum, the following activities:

- Conduct workshop with managers and key personnel to review response activities and gather suggestions for new or revised procedures
- Review all contact lists and update as necessary.



## **MWS' Spill and Overflow Response Plan (SORP), cont.**

### **6. Available in Writing**

Hard copies and/or electronic versions of the SORP and any amendments will be available to any employee involved in responding to an overflow. (Also available in shared electronic storage: Q:/SYSSERV/SEWER/Spill and Overflow Response Plan). An electronic copy is also available on MWS' website.

### **7. Implemented by Trained Personnel**

MWS personnel will conduct training for the appropriate response crews and support staff to ensure their understanding and proper execution of the SORP. Training sessions will be supplemented with a practical hands-on field component to ensure all response personnel are prepared for anticipated situations. Also, MWS will conduct refresher sessions annually or when changes are made to the SORP to ensure the same results. Maintenance Managers and Supervisors will oversee the SORP to ensure that the established procedures are being followed during implementation and field operation.

# Table of Contents

<b>Executive Summary</b>		i
<b>MWS's Spill and Overflow Response Plan</b>		iii
<b>Section 1</b>		1
1.0	Definitions	1
1.1	General Definitions	1
1.2	Types of Overflows	6
<b>Section 2</b>		
2.0	Process Overview	7
2.1	Process Objective	7
2.2	Scope and Summary	7
2.3	Assumptions and Limitations	7
<b>Section 3</b>		
3.0	System and Organizational Structures	10
3.1	MWS Wastewater System	10
3.2	MWS Operational and Functional Structure	10
3.3	Resources for Customer Inquiries	11
3.4	Resources for Dispatching Work	11
3.5	Resources to Respond to SSO or CSO Events at Pump Stations	11
3.6	Resources to Respond to SSO or CSO Events in the Gravity Line System	15
3.7	Engineering Activities	18
3.8	Equipment Resources	19
3.9	Approach for System Evaluation for the Purposes of Mitigating Wet Weather SSO or CSO	20
<b>Section 4</b>		
4.0	SORP Goals and Procedures	22

4.1	MWS Receives Report of Possible SSO or CSO	22
4.2	System Operations (Workflow)	27
4.3	First Responder and Underground Construction Crews (Workflow)	30
4.4	Public Advisory Procedures	37
4.5	Notification Procedures for External Organizations	39
4.6	Required Reporting Information	40
4.7	SSO or CSO Tracking	40
4.8	Critical Incident Review Process	41
4.9	Quality Assurance	41

## **Section 5**

5.0	Update, Availability, and Training Procedures for the SORP	
5.1	Training	42
5.2	Review and Update SORP	42
5.3	Distribution and Availability of SORP	42

## **Appendices**

### Supporting Information

A	Information Technology Resources and Descriptions	44
B	Public Advisory Procedure Examples	48
C	Field Manual SORP	54
D	On-call List	62
E	Sewer Overflow Response Flowchart	67
F	Standard Operating Procedures for SSO or CSO	68



# Section 1

## 1.0 Definitions

This section is designed to help familiarize readers with common terms and acronyms used in this report. It includes basic definitions of a sanitary sewer system and sanitary sewer overflows which will give readers an overview to help understand the following sections.

### 1.1 General Definitions

**Basin:** Basins are small portions of the sanitary sewer system separated by boundaries of natural topography or system configuration (i.e. pumping stations). Separating the system into basins allows MWS to better identify and monitor system performance in those smaller areas.

**Building Backup:** A building backup means a wastewater backup into a building that is caused by blockages, malfunctions, or flow conditions in the collection system. A wastewater backup into a building that is caused by a blockage or other malfunction of a private lateral (service line) is not reported as a Building Backup.

**Catch basin:** an open to the surface structure used to collect surface run-off including rain and surface waters. This structure is connected to a gravity piping system or mechanically pumped facility used to transport to discharge locations.

**Closed-Circuit Television (CCTV):** MWS uses closed-circuit television to visually inspect the internal condition of pipes and sub-surface structures.

**Combined Sewer Overflow (CSO):** An overflow of combined storm and sanitary sewer in MWS' 450 miles of combined sewer system (downtown).

**Combined Sewer System (CSS):** A sewer collection system that collects both storm and sanitary sewers in the same pipe. MWS' CSS enables collected sanitary and stormwater flows to be transported and treated at the POTW (Publicly Owned Treatment Works). In heavy rainfalls, MWS' CSS may result in overflow causing a CSO.

**Control Room:** MWS's Control Room is an operating center at the Omohundro Water Treatment Plant that monitors pumping station, reservoir and other infrastructure monitoring devices for operating status. Controls and alarms throughout the system alert the Control Room of any anomalies that result in investigation and correction. The Control Room interfaces with Route Service, Sewer Maintenance, CSC Dispatch and other managerial and supervisory personnel in the notification of system issues. The Control Room is staffed 24/7/365.

**Customer Service Center (CSC):** MWS's Customer Service Center handles requests for emergency service including but not limited to outage or overflow reports, etc.

**Computerized Maintenance and Management System (CMMS):** The Computerized Maintenance and Management System (currently Hansen) maintains records of assets including physical properties and any maintenance and repair records. It also generates

work orders and facilitates workflow to other systems, such as Mobile Dispatch, (see MWM, Mobile Workforce Management System), or between departments.

**Customer Information System (CIS):** The Customer Information System (currently H T E) maintains records of account numbers, premise details, and other customer information. It also generates work orders and facilitates workflow to other systems, such as Mobile Dispatch (see MWM, Mobile Workforce Management System), or between departments.

**Cleanout:** A cleanout is a vertical pipe with a removable cap extending from a private service lateral to the surface of the ground. It is used for access to the private service lateral for inspection and maintenance.

**Collection System:** The network of pipes, manholes, and associated equipment that transports wastewater from homes and businesses to the treatment plant is referred to as the collection system.

**Combination Cleaners:** Combination cleaners are mechanical equipment with flushing and suction capabilities. This equipment is used to clear or collect wastewater and related debris from the sanitary sewer system.

**Control Room:** MWS' 24/7/365 manned operations center that utilizes remote communications including SCADA to monitor and report the status of all the departments, water and wastewater pumping stations, water reservoirs and critical sewer flow monitored sites.

**Disruption of Service:** A disruption of service is an interruption in customers' sanitary sewer service due to various reasons, such as blockages, pipe failures, etc.

**Dry Weather SSO:** An overflow of untreated sewage from a sanitary sewer system due to flow restrictions or system disruptions. [See Section 1.2]

**Dry Weather CSO:** An overflow of untreated sewage from a combined sewer system due to flow restrictions or system disruptions. [See Section 1.2]

**Environmental Protection Agency (EPA):** United States Environmental Protection Agency.

**First Responder:** Typically a designated sewer maintenance employee, or, any qualified MWS employee who performs initial inspection of a suspected or reported SSO or CSO activity.

**Force Mains:** A pressurized line that conveys wastewater from a pump station.

**FROG:** Fats, Roots, Oils and Grease are components that affect collection system performance and are a source of system discharges. MWS has a dedicated FOG Program that manages, tracks and reports on all related activities. The "R" of FROG is in stages of further development to be more comprehensive and include private lateral contribution to this system problem.

**Full Time Equivalent (FTE):** An employee working at least forty (40) hours per week and receives full benefits.

**Gravity or Main Lines:** Gravity or main lines represent the largest portion of the MWS system. They use changes in elevation to transport sewage between points by gravity.

**Inflow and Infiltration (I/I):** extraneous surface or ground water that enters the sanitary sewer.

**Impacted Areas:** Impacted areas are sites where sanitary sewage has collected or areas that have been affected as the result of an overflow from the sanitary sewer system.

**Infiltration:** Infiltration is the introduction of groundwater into a sanitary sewer system through cracks, pipe joints, manholes, or other system leaks.

**Inflow:** Inflow is the introduction of extraneous water into a sanitary sewer system by direct or inadvertent connections with storm water infrastructure, such as gutters and roof drains, uncapped cleanouts, and cross-connections with storm drains.

**Interactive Voice Response (IVR):** MWS' automated Interactive Voice Response system, which gives callers to the Customer Service Center various options to direct their calls appropriately. It also enables out-bound calls to customers affected by collection system problems such as grease, roots, and/or debris that is not acceptable in sanitary sewer collection systems.

**Nashville - Davidson County - Metro Water Services (MWS) Geographic Information System (GIS):** The GIS is an automated mapping and geographic information system created, owned, and funded by the City of Nashville, Davidson County, and MWS. The GIS maintains digital geographic data for all of Davidson County, Tennessee. Some of the core mapping information, including topography and aerial photography, are managed by Metro Planning Commission, while other map "layers," such as property, utility information, and address data, are maintained by the respective Metro Nashville departments.

**MWS:** Metro Water Services.

**Lift or Pump Station:** A lift or pump station is a mechanical method of conveying wastewater to higher elevations.

**Manhole:** A manhole provides a connection point for gravity lines, private service laterals, or force mains, as well as an access point for maintenance and repair activities.

**Mobile Workforce Management System (MWM):** MWM is a workforce management system that includes desktop management for dispatchers, schedulers and GPS (Global Positioning System) for crew location. MWM uses cellular phone technology to transmit field orders directly to field crews through laptop computers located in various MWS



vehicles to reduce response time. Field activity is then entered by the field respondent and uploaded into the CIS and CMMS as the field order is completed.

**National Pollutant Discharge Elimination System Section (NPDES Section):** MWS utilizes the NPDES Section of its Stormwater Division that assists in the investigation, remediation and public notification of any sewer overflows within the Nashville Davidson County watershed.

**Overflow Abatement Program (OAP):** The Overflow Abatement Program consists of system assessment, capital improvement projects, maintenance programs, operational standards, and emergency response. MWS began the OAP in 1990. The first steps in the program (upgrading treatment plants, pumping stations and reducing the number of Separated Sewer Overflows (SSOs) and Combined Sewer Overflows (CSO)) have been completed, and the focus now is on continuing to upgrade and maintain the collection system further eliminating SSO and CSO.

**Overflow:** An overflow is any release of treated or untreated wastewater (including that combined with rainfall induced by infiltration and inflow, or I/I) from a sanitary sewer system.

**Private Service Lateral:** Private sewer lateral shall mean that portion of a sanitary sewer pipe, which is not owned or operated by MWS, that extends from a structure to the point at which such pipe connects to the MWS collection system.

**Public System:** Public system refers to MWS' sanitary sewer system, excluding private service laterals and connections with private systems.

**Sanitary Sewer Overflow (SSO):** SSO shall mean an overflow, spill, or release of wastewater from the separated sewer system, including: (a) all Unpermitted Discharges; or (b) overflows, spills, or releases of wastewater that may not have reached waters of the United States or the State; and (c) all Building Backups excluding those caused by private service lateral failure.

**Sanitary Sewer System:** A sanitary sewer system collects, conveys, and treats residential, commercial, and industrial wastewater through a complex network of infrastructure that includes these components:

- Private service laterals
- Gravity or main lines
- Manholes, catch basins or junction boxes
- Sewer lift or pump stations
- Force mains
- Treatment plants.

**Sanitary Spill and Overflow Response Plan (SORP):** MWS' Spill and Overflow Response Plan provides structured guidance, including a range of field activities to choose from, for a uniform response to overflows.

**Sewer Maintenance (SM):** Sewer Maintenance focuses specifically on collection system preventive and corrective maintenance activities. SM team members have diverse backgrounds, including collection system operation, safety, engineering, process improvement, and communications. In certain locations within this document, SM may include collection system sewer maintenance performed out of the System Services Division and pumping station sewer maintenance performed out of the Operations Division's Route Services Section.

**Supervisory Control and Data Acquisition System (SCADA):** SCADA is automated sensory control equipment that monitors the operation of the pump stations. The SCADA system will convey alarms when predetermined conditions occur. Monitoring parameters include, but are not limited to, power failures, high wet well levels, pump failures and high pipe depths that could potentially cause overflows.

**Suspicious Substance:** Any material not normally found in a wastewater system, including, but not limited to, caustic substances.

**TDEC:** Tennessee Department of Environment and Conservation.

**Unpermitted Overflow:** An overflow of pollutants from any location within the treatment works which reaches waters of the United States or the State, and which is not authorized by an NPDES Permit, including but not limited to any SSO or CSO which reaches waters of the United States or State.

**Waters of the State:** Waters of the State shall have the same meaning as "Waters" defined at TCA § 69-3-103 (33).

**Wet Weather Overflow:** A discharge of untreated sewage from a sanitary sewer system due to excessive flows during rain events or elevated ground and surface water conditions.  
[See Section 1.2]

## 1.2 Types of Overflows

*Sanitary sewer overflow* is an encompassing term to describe the overflow of sewage from a sanitary sewer system anywhere except at a permitted overflow point. This SORP is developed to address the two fundamental types of SSO s:

- **Wet Weather Overflows**  
Wet weather overflows result from excessive flows during significant rain events and/or elevated ground and surface water conditions. They can be attributed to a number of factors, including, but not limited to, the following:
  - Downspouts
  - Footing drains
  - Sump pumps
  - Leaking service laterals
  - System Infiltration
  - Flooding from the stormwater system
  
- **Dry Weather Overflows**  
Overflows during dry weather are most often caused by flow restrictions or system disruptions. Dry weather SSO or CSO can be attributed to a number of factors including, but not limited to, the following:
  - Bottlenecks and/or blockages
  - Grease
  - Roots
  - Debris
  - Mechanical failures
  - System overloads
  - Sewer main breaks
  - Treatment facility malfunctions and/or overloads.

The SORP Goals (Section 4.0) discuss the type, location, destination, cause, impact, and containment and remediation requirements of SSO or CSO, as well as prevention measures.

## Section 2

### 2.0 Process Overview

MWS continues to work to provide an efficiently designed, maintained, and operated sanitary sewer system to safely collect and convey sewage to a wastewater treatment plant for appropriate treatment and discharge.

An SSO occurs when sewage escapes from the sanitary sewer system anywhere other than at an approved discharge point. An SSO can result from flow restrictions or system disruptions, or it may also result from excessive flows caused by elevated ground and surface water during significant rain events.

MWS developed this SORP to reduce the impact of SSO or CSO for our customers and the environment and to comply with regulatory requirements. It provides structured guidance for response to overflows, including a range of appropriate and effective field activities MWS can choose from to meet the needs of each situation. MWS will use its discretion and best professional judgment to evaluate each event and choose the appropriate remediation tools and any needed long-term corrective action.

### 2.1 Process Objective

MWS's response to an SSO or CSO begins when a customer, MWS employee, internal automated system, or outside party reports a possible overflow. The SORP is intended to

- Protect public health and the environment
- Satisfy regulatory agencies and discharge permit conditions that require procedures for managing sewer overflows.

### 2.2 Scope and Summary

The SORP entails a series of steps or procedures that begins with a report of a possible SSO or CSO in the MWS system. The notification initiates a series of protocols to confirm the report, reduce the impact on the environment, report the occurrence to the appropriate individuals and agencies, and track the occurrence to help reduce or eliminate further incidents.

These are the key components of MWS' SORP:

- Receive, record, and dispatch calls in response to notification of a possible SSO or CSO
- Monitoring known wet weather active and watch list (chronic wet-weather) locations for overflow activity
- Assess the reported occurrence
- Determine if the cause of the SSO or CSO falls under MWS' area of responsibility or is a private lateral issue
- Contain and recover the overflow, when practicable, to reduce any further negative impact
- Resolve system disruption
- Advise customers if the overflow is due to a problem on their property
- Implement appropriate notification procedures
- Track SSO or CSO occurrences
- Establish procedures to assess adverse impact to human health and the environment
- Develop and implement any needed system improvements.

### 2.3 Assumptions and Limitations

MWS initiates the SORP promptly after notification of a possible SSO or CSO from a customer, passerby, emergency agency, or other individual or entity through the MWS Dispatch or when alerted directly through Supervisory Control and Data Acquisition System (SCADA).

MWS' CSC is the primary contact for customers who have utility questions or need to report problems with their service, such as wastewater trouble. The CSC Dispatch is staffed 24-hours a day, seven days a week. CSC personnel receive customer calls and enter the information regarding the customer request or concern into the Customer Information System (CIS) and/or CMMS. MWS Control Room, utilizing SCADA, may also initiate needed field response. Any wastewater trouble calls are immediately transmitted to First Responder to initiate the SORP field response. [Refer to Section 4.1 for additional details of this process.]

Once dispatched, the process may vary depending on these factors:

- Determination of responsibility
  - MWS' wastewater system
  - Customer's private lines
- Location of SSO or CSO
- Potential impact on health and the environment.

When evaluating the potential impact of an SSO or CSO on public health and the environment, sensitive factors will be identified. These factors will determine if additional response activities are required and whether to consult with regulatory assistance agencies.

Sensitive factors include, but are not limited to:

- Streams, creeks, and other natural waterways
- Heavy pedestrian or inhabited areas
- Special facilities such as schools, public parks, walking trails, etc.

A backup caused by failure in the customer's private system is referred to as "private trouble." If MWS identifies the problem is on the private portion of the system, the customer is notified. In these situations, the customer (often through a plumber) is responsible for any repair or clean up required. Depending on the severity of the problem and its impact to public health and safety, MWS may also notify the Metro Health Department for assistance. If the customer's effort to correct the problem are not successful and are inside the public easement or right-of-way, MWS will assist in performing any needed corrective action. This is reflected in the Metro Nashville Davidson County Code which states:

15.40.020 Regulation and enforcement--Authority of director.

The director is authorized and directed to promulgate and enforce such rules and regulations as he may deem necessary for the enforcement of this chapter and for the safe, economical and efficient management, control and protection of the government's public sanitary sewerage system.

15.40.050 Maintenance of service connection--Owner's and Department's responsibility.

A. The Owner will own and maintain his sewer service line from the public sewer main to the structure served.

B. If the Owner experiences sewer service interruption as a result of a sewer service line failure and has demonstrated a good faith effort to remedy the problem, the Department shall make any necessary repair on the portion of sewer service line inside the public right-of-way or easement from the main to the boundary of right-of-way or easement. Provided, however, that before the Department will make such repairs, the Owner must provide an excavated clear and

open access to the sewer service line at the right-of-way or easement boundary. Residential customers will not be billed for any repair performed by the Department under this Section. Commercial customers shall pay all costs of repair incurred by the Department under this Section and such costs shall be billed on the customer's next bill.

MWS will provide the same level of response to a building backup as prescribed for an SSO or CSO in the SORP. If a problem in MWS' system causes a backup into a building, MWS notifies its Claims Department immediately to coordinate communication with the customer and contract for any necessary clean up. MWS maintains emergency contracts with contractors and cleaning agencies that are equipped to address damage caused by the backup.

For backup emergencies, MWS personnel can contact the Claims Department staff on shift or on-call through the weekly generated emergency contact list (On-call). This list of contacts includes all personnel involved in emergency response including but not limited to repair, water quality (NPDES), laboratory (monitoring), claims, etc. Refer to Section 4.3.2 for additional clarification of MWS' process for determining the cause of building backups.

MWS is a steward of the environment, and the first priority at an overflow is containing the overflow to minimize possible harmful impacts to the environment and public health to the extent reasonably possible. If the cause of the disruption of service and ultimately the SSO or CSO is found to be a private issue, then MWS representatives will notify the appropriate parties. Under those circumstances, MWS is not responsible for remediation although assistance may be offered in accordance with our Sewer Service Line Policy.



## **Section 3**

### **3.0 System and Organizational Structures**

Implementing the SORP requires these types of coordination among several MWS divisions and sections:

- Effective and timely communication
- Well-trained and experienced responders
- Structured and concise response procedures
- Accurate and comprehensive monitoring procedures
- Continuous and annually scheduled re-evaluations of the plan.

### **3.1 MWS Wastewater System**

Today, MWS' wastewater system serves more than 191,000 customers in a 533-square-mile service area.

The system is composed of:

- 2,911 miles of gravity main lines
- 77,090 manholes
- 158 miles of force main
- 103 pump stations
- 3 wastewater treatment plants.

### **3.2 MWS Operational and Functional Structure**

MWS is a multifaceted organization with a systematic organizational structure in place to provide wastewater service, as well as water and stormwater services. The Sewer Maintenance Section of the System Services Division (SSD) performs all scheduled and emergency maintenance on the collection system piping network. The Operations Division's Route Services Section performs all scheduled and emergency maintenance and repair of the system's 103 sewer pumping stations. All work activities are recorded in the department's CMMS.

Execution and enforcement of the SORP includes professionals throughout MWS with backgrounds in engineering, wastewater collection system operations, process improvement, and communications.

## **Figure 1: MWS Organizational Structure**

### **3.3 Resources for Customer Inquiries**

MWS' CSC receives, records, and initiates response to customer inquiries or concerns through a dedicated phone number: (615) 862-4600, option 1, option 3.

Currently, 24 representatives are employed in the CSC that may have responsibility of receiving, dispatching and documenting collection system emergencies and/or complaints. Approximately 9 of the representatives provide around-the-clock customer service seven days a week in the Dispatch Section answering customer complaint calls and interfacing with field operations personnel. CSC representatives take reports ranging from manhole overflows to sewage on private property.

CSC enters customers' trouble calls into CMMS, which translates it into a field activity. This information is collected and reported for operational review and compliance reporting.

### **3.4 Resources for Responding to SSO or CSO**

The MWS Dispatch and Operation's Control Room provides dispatching function 24 hours a day, seven days a week. These groups receive Service Requests from customers, employees or other notification systems, such as the SCADA system, and dispatches wastewater trouble orders to the appropriate MWS responder crew.

Nextel direct talk enables field communication to the First Responder to initiate the field component of the SORP. CMMS tracks the orders a crew has worked, the time spent on the event, and the resolution of the wastewater trouble. Since October 2008, MWM has been utilized to monitor all such activity from initial complaint through resolution. .

Dispatch and the Control Room not only dispatch orders but also serve as a resource to field crews. They can obtain additional assistance from other crews to mitigate or clean up an SSO or CSO, as well as provide system information from various MWS databases such as CIS, CMMS, SCADA and GIS.

### **3.5 Resources to Respond to SSO or CSO Events at Pump Stations**

Route Services, within the Operations Division, is responsible for the operations and maintenance of MWS' 103 wastewater pump stations.

Each pump station is equipped with a SCADA system that monitors the operation of the stations. The SCADA system will convey alarms when predetermined conditions are present at the station. Monitoring parameters include, but are not limited to: power failures, high wet well levels, and pump failures that could potentially cause overflows.

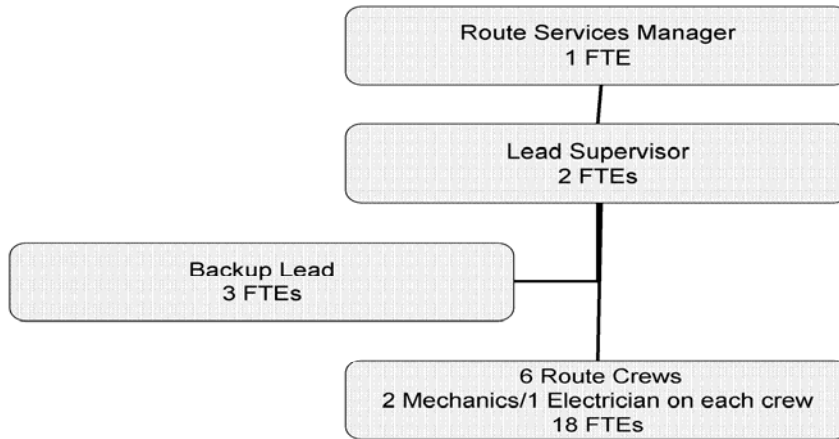
In addition to the continuous monitoring, each station is inspected on a regular basis. The frequency of these inspections is based on factors such as facility age, operating history and size of facility. Route Services maintenance personnel perform service and calibration of all instrumentation, such as flow meters, level sensors, alarms, and SCADA equipment, on a periodic basis.

Route Services personnel serve as the First Responders for pump station trouble calls. For any incident that involves an overflow, Route Services executes the requirements of the SORP and takes the appropriate action to contain the overflow. Response to any overflow that may involve pumping stations including high wet well alarms, force main breaks, etc will be coordinated with Route Services

Route Services is broken up into different areas of maintenance responsibilities. This includes predictive, routine, preventive and corrective maintenance. This group also performs any emergency repair necessary. The following chart identifies which operating section is responsible for predictive, routine, preventive, and corrective maintenance.

Figure 2 summarizes the organizational structure of MWS' response to SSO or CSO events at pump stations.

**Figure 2**



**Route Service Manager**

The Route Services Manager is a member of the Operations Division Management Team. This Manager position assists in the coordination of emergency field responses to pumping station issues. This position also oversees resource allocation and monitors maintenance activities.

**Lead Supervisor**

The Route Services Lead is a member of the Route Services Management Team. This Lead position is responsible for the day-to-day field activities that maintain pumping stations and respond to emergencies. This position schedules and tracks activities in CMMS.

**Backup Lead**

The Route Services Back-up Lead is a functional apprentice program format that enables a level of duplication in the event of Lead absence.

**Mechanics**

The Mechanics are functional positions charged with the maintenance and repair of pumps, piping and internal non-electrical components of the pumping stations.

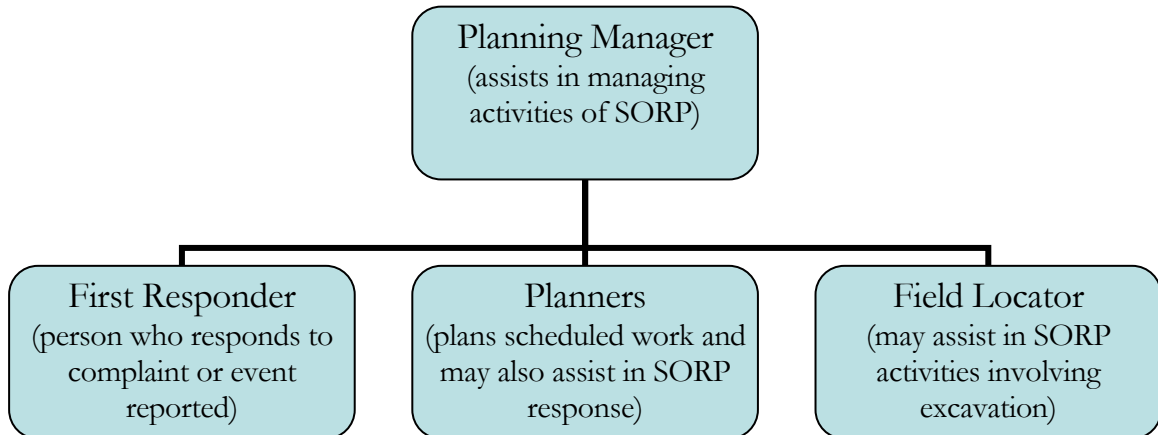
**Electricians**

The Electricians are functional positions charged with the maintenance and repair of motor, controls and non-mechanical components of the pumping stations.

### 3.6 Resources to Respond to SSO or CSO Events in the Gravity Line Systems

The following organization charts and job titles summarizes MWS' response to SSO or CSO events in the gravity line system.

**First Responder- Planning Manager role is with Repair Manager, or others depending on day and shift.**



#### **First Responder – Planning Manager**

The First Responder - Planning Manager is a member of the System Service Division Management Team. Depending on the shift and day, others such as Assistant Managers, Repair Manager, Engineers, and Supervisors may function in the capacity of First Responder and/or Planning Manager.

This Manager position assists in the coordination of emergency field responses to wastewater and water complaints. This position also helps coordinates emergency and plans non-emergency corrective actions. This functional section which provides single First Responders is typically in the Repair Section, which now includes the Planners and the Field Locator activities that field mark underground infrastructure for excavation activity within the Department. (for third-party excavation activity, field locating and marking is performed by an outside contractor, currently UtiliQuest).

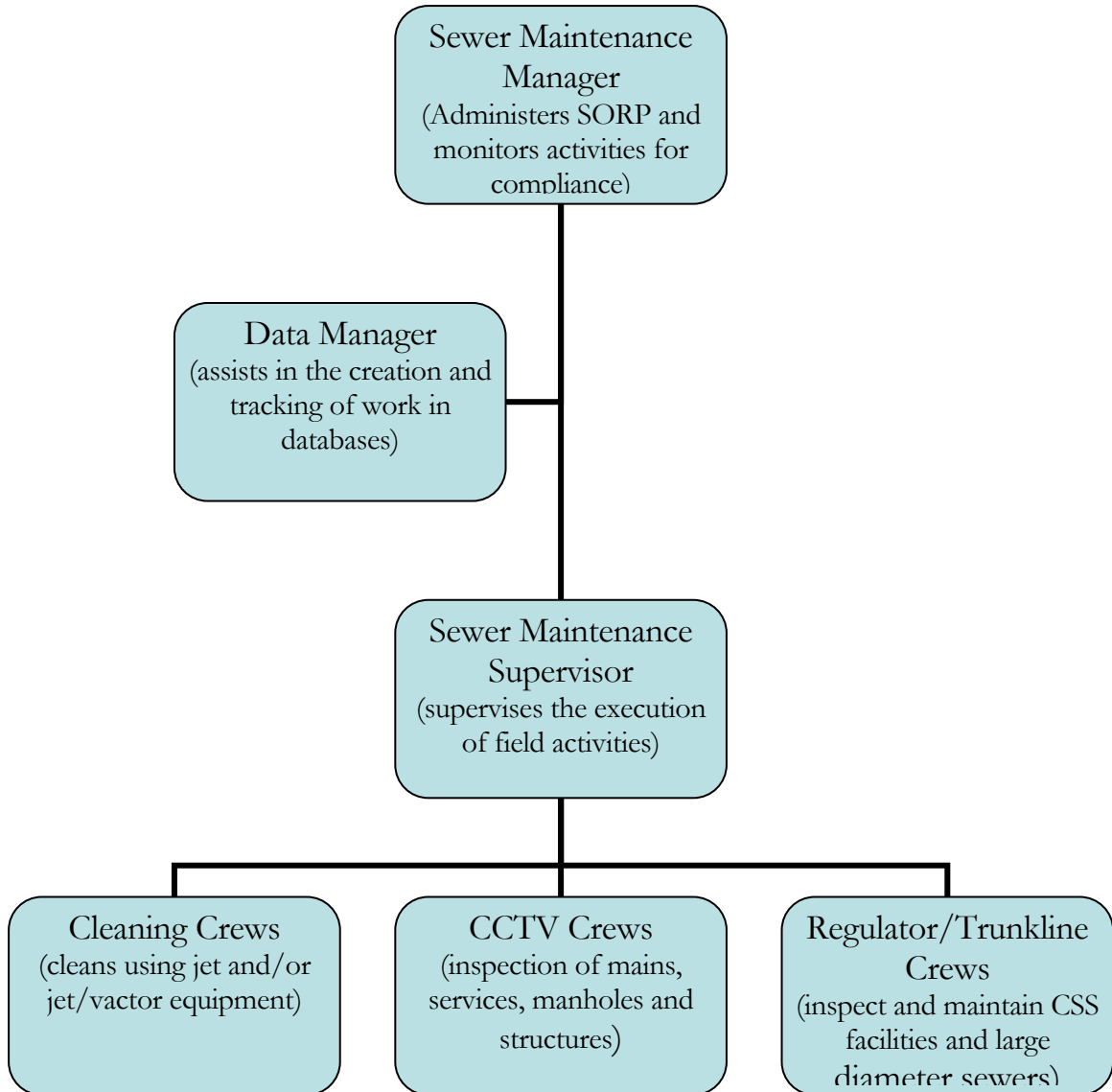
#### **First Responder:**

For piping system issues, the First Responders are employees of the System Services Division and may be on any work shift (days, nights, and weekends). They provide the initial response to SSO or CSO or other unscheduled wastewater trouble. These resources traditionally are the first MWS representatives to arrive at a reported overflow. When CCTV crews are on shift they perform the first response. Other shifts will result in a first response by Sewer Maintenance Cleaning Crews and/or other personnel trained in system evaluation and action determination. They will initiate the MWS field response per this SORP. As wet weather events necessitate, other employees of MWS may serve as First Responders, depending on the severity of the weather event.



For pump station issues, First Response will be performed by Operation's Division Route Services personnel. They are available 24/7/365 and as with System Services response will collaborate with other MWS staffing as appropriate.

**Sewer Maintenance – sewer collection system piping network operation and maintenance. Regulator / Trunkline/ Manhole Inspections crews also participate as containment and restoration crews.**



**Sewer Maintenance (SM) Manager**

The SM Manager is a member of the System Service Division Management Team. The SM Manager develops and tracks sewer maintenance activities, productivity goals and collection system compliance. This Manager also works on special projects and assists in solving system and customer problems and resolving special cause variations outside standard operating procedures.

**Data Manager**

This person serves as an administrative support to sewer maintenance activities. This job involves the creation and review of work through the various technologies (Granite XP and Hansen). This position also assists in the evaluation of conditions towards any corrective action needed.

**Sewer Maintenance Supervisor**

The SM Supervisor is a member of the System Service Division Management Team. The Sewer Maintenance Supervisor oversees the day-to-day activities of the CCTV and Cleaning Crews including scheduled preventive maintenance, SSO or CSO and CSO coordination and reporting and collection system facility operation such as regulator chambers, trash traps, etc for collection compliance. This position also addresses any short-term (daily) or long-term resource issues that impact sewer maintenance production goals involving staffing and equipment.

**Cleaning Crew**

The Cleaning Crews are part of Sewer Maintenance Section of the System Services Division. These crews primarily perform routine and emergency response cleaning and may function as a First Responder depending on their location in relation to sewer complaint. These crews will perform any containment and cleaning activities prescribed by this SORP in all areas of the public sewer collection system.

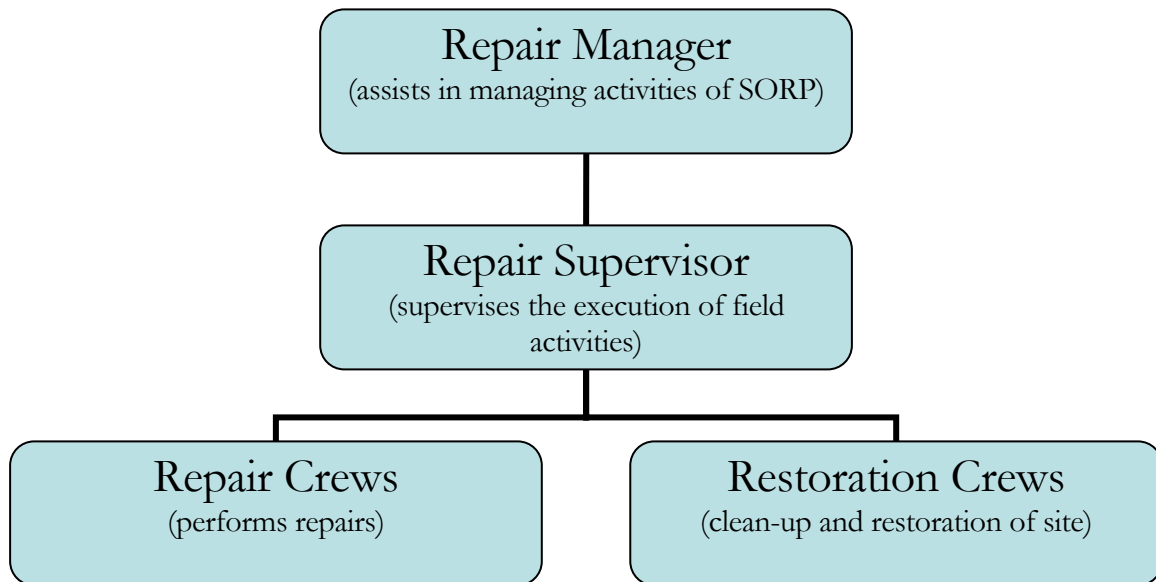
**CCTV Crew**

The CCTV Crews are employees of the Sewer Maintenance Section of the System Services Division. These crews primarily perform routine and emergency response closed circuit televising and may function as a First Responder depending on their location in relation to sewer complaint. Their historic records of maintenance and condition assessment are also used in the evaluation of any chronic system problems in coordination with our FROG and Overflow Abatement Programs.

**Regulator/Trunkline Walking Crew**

The Regulator/Trunkline Walking Crews are employees of the Sewer Maintenance Section of the System Services Division. These crews primarily perform routine and emergency activities of the CSS regulators. They also perform manhole inspections in both the CSS and SSS as assigned both during dry weather and wet weather. They may also serve as First Responder depending on their location in relation to sewer complaint. They may also assist with the overflow containment and restoration work. Their activities are recorded in the Department's CMMS and any follow-up inspection or corrective work is performed as a result of their investigatory work.

**Repair – crews perform work on both the collection system and distribution system**



**Repair Manager**

The Repair Manager is a member of the System Services Division Management Team. The Repair Manager coordinates work activities requiring excavation and repair including all plan development, permitting, resource allocation and material needs. Depending on the shift and day, others Assistant Managers and Supervisors may function in the capacity of Repair Manager. Single First Responders, Planners, and Locators also report to the Repair Manager. Our utilities are now located for Tennessee-One-Call by an outside contractor, UtiliQuest.

This position also addresses any short-term (daily) or long-term resource issues that impact sewer maintenance production goals involving staffing and equipment.

**Repair Supervisor**

The Repair Supervisor is a member of the System Service Division Management Team. The Repair Supervisor oversees the day-to-day activities of the crews involved in repair, valve operation and restoration.

**Repair Crew and Restoration Crew** (Water Maintenance Leader, Equipment Operators and Tech)

The Repair and Restoration Crews are employees of the System Services Division. These crews perform point repairs and restoration and can provide specialized resources during unique clean up activities following an SSO or CSO. Typically, the Repair Crew is utilized when the cause of the SSO or CSO cannot be resolved by flushing or root cutting and may require excavation.

### **3.7 Engineering Activities – Overflow Abatement Program and Flow Monitoring Program**

The following are activities that have impact on the SORP. The Overflow Abatement Program's objective is to eliminate extraneous flow in the collection thus eliminating wet-weather overflows. The flow monitoring activity is a tool used in conjunction with other maintenance activities in the operation and maintenance of the collection system. Flow data is also used to calibrate the sewer model and to initiate investigation of collection system flow abnormalities.

#### **Overflow Abatement Program (OAP) Manager**

The OAP Manager is a member of the Engineering Division Management Team. The OAP Manager and assigned engineering staff develop and implement sewer system projects for with the goal of abating overflows caused by wet weather issues, in order to bring MWS into regulatory compliance. In conjunction with the Overflow Committee (this committee meets monthly to review the previous month's overflow activities for reporting to the state agency), locations where wet weather overflows occur are annually reviewed and ranked. This information is used to aid in the development of the Corrective Action Plan/ Engineering Report (CAP/ER) which results in projects that are included in the total department's Capital Improvement Program (CIP). Management of planning, design, and construction activities for these projects are performed by OAP engineering staff.

#### **Flow Monitoring (FM) Manager**

The FM Manager is a member of the Engineering Division Management Team. The FM oversees the collected data from MWS' network of permanent monitors and rain gauges. This information is used to generate regulatory reports, as a diagnostics tool for collection system performance and needed improvement, and to assess the effectiveness of OAP projects. Work also includes the definition and execution of additional flow monitors to further develop collection system objectives, operation and reporting of the MIKE URBAN Sewer Model for capacity allocation and trending and special projects related to collection system performance.

### **3.8 Equipment Resources**

See Table 1 below for a list of equipment resources available for sewer system maintenance and SSO OR CSO response.

Table 1

<b>SEWER MAINTENANCE</b>			
	<i>CCTV TRUCKS</i>	<i>ARIES</i>	<i>3</i>
		<i>CUES</i>	<i>2</i>
		<i>PIERPOINT</i>	<i>1</i>
	<i>JET RODDER TRUCKS</i>	<i>VACTOR</i>	<i>2</i>
		<i>SEWER EQUIPMENT COMPANY OF AMERICA (1 OR 3 IS BACK UP UNIT)</i>	<i>3</i>
		<i>SUPER PRODUCTS (BACK UP UNIT)</i>	<i>1</i>
	<i>COMBINATION JET/VACUUM TRUCKS</i>		
		<i>VACTOR</i>	<i>2</i>
		<i>VAC-CON</i>	<i>2</i>
<b>SSD REPAIR</b>	<i>CREW TRUCKS (R&amp;M)</i>	<i>FORD</i>	<i>8</i>
	<i>TANDEM 10-YD DUMPS</i>	<i>FREIGHTLINER</i>	<i>14</i>
	<i>BACKHOE/LOADER</i>	<i>JCB</i>	<i>6</i>
	<i>BACKHOE/LOADER</i>	<i>NEW HOLLAND</i>	<i>4</i>
	<i>BACKHOE W/HYDL HAMMER</i>	<i>CASE</i>	<i>1</i>
	<i>BACKHOE TRAILERS</i>	<i>HURST</i>	<i>9</i>
	<i>PORTABLE AIR COMPRESSOR</i>	<i>LEROI</i>	<i>3</i>
	<i>PORTABLE AIR COMPRESSOR</i>	<i>INGERSOLL RAND</i>	<i>3</i>
	<i>PORTABLE AIR COMPRESSOR</i>	<i>SULLIVAN</i>	<i>4</i>
	<i>HYDL EXCAVATOR (TRACK)</i>	<i>JOHN DEERE</i>	<i>1</i>
	<i>SMALL DUMPTRUCKS (2 1/2 YD)</i>	<i>FORD</i>	<i>2</i>
<b>FLEET/GENERATOR</b>			
<b>SUPPORT SERVICES</b>	<i>HYDL POWER UNITS W/PUMP</i>	<i>H&amp;H</i>	<i>4</i>
	<i>REPAIR/MAINTENANCE SHOP TRUCK</i>	<i>FORD</i>	<i>1</i>
	<i>GENERATOR SERVICE/FUEL TRUCK 800 GALLON</i>	<i>GMC</i>	<i>1</i>

	<i>GENERATOR/SERVICE/FUEL &amp; PUMP TRUCK 100 GAL.</i>	<i>DODGE</i>	<i>1</i>
	<i>GENERATOR/SERVICE/FUEL &amp; PUMP TRUCK 100 GAL.</i>	<i>FORD</i>	<i>1</i>
	<i>CRANE TRUCK/8-TON</i>	<i>RO STINGER</i>	<i>1</i>
	<i>CRANE TRUCK/28-TON</i>	<i>MANITEX</i>	<i>1</i>
	<i>TRUCK/TRACTOR W/5,000 GAL TANKER</i>	<i>MACK</i>	
	<i>SEWER BUCKET MACHINES</i>	<i>SRECO</i>	<i>5</i>
	<i>TRUCK/TRACTOR W/LOWBOY</i>	<i>MACK</i>	<i>1</i>
<b>CWWTP UNITS</b>	<i>TANDEM 10-YD DUMP</i>	<i>FREIGHTLINER</i>	<i>1</i>
		<i>INTERNATIONAL</i>	<i>1</i>
	<i>COMBINATION JET/VACUUM TRUCK</i>	<i>VACTOR</i>	<i>1</i>
<b>ROUTE SERVICES</b>	<i>CREW TRUCKS W/CRANE</i>	<i>FORD</i>	<i>5</i>
	<i>CREW TRUCK 3/4-TON</i>	<i>DODGE</i>	<i>7</i>
	<i>SKID STEER LOADER</i>	<i>NEW HOLLAND</i>	<i>1</i>
	<i>PORTABLE GENERATORS</i>	<i>500 KW</i>	<i>2</i>
		<i>250 KW</i>	<i>5</i>
		<i>125 KW</i>	<i>3</i>



### **3.9 Approach for System Evaluation for the Purposes of Mitigating Wet Weather SSO or CSO**

#### **Wet Weather Investigations**

In addition to the preventive maintenance, flow monitoring and reports of system problems, MWS' Wet Weather Investigations are an additional tool used to qualify the performance of the collection system. This program is a structured proactive inspection of locations in the sanitary sewer system that have demonstrated the likelihood to overflow during heavy rain events. These locations are identified in response to past activity, system flow monitoring and/or modeling data. Information gathered during these wet weather investigation may result in the need for system upgrade and/or pipeline rehabilitation or replacement.

Wet Weather Investigations will be initiated under the following conditions:

- Forecasted weather conditions
- Current and/or recent wet weather conditions that are likely to have caused an overflow at historically active locations such as increased water tables
- Flow data at key monitoring points that indicate increased likelihood of an overflow at active and watch list locations.

Wet weather investigations are predetermined to enable optimization of resources. The need for this activity is defined both through determination of the SSD Sewer Maintenance Section or through the program objectives of MWS' Overflow Abatement Program. Wet weather field activities are executed independently through SSD or through collaborative efforts of many divisions and/or contract services depending on the scale and need for the operation.

## Section 4

### 4.0 SORP Goals and Procedures

The goal of the SORP is to document MWS' procedure for responding to all SSO or CSO and to ensure a consistent response. It is also a goal to educate stakeholders of our activities both internal and external as we also incorporate the principals of continuous improvement in this process. These SORP protocols are intended to address all types of events and ensure that every effort is made to reduce the impact on the environment and protect the public from any potential health hazards associated with an overflow or backup. MWS will use its discretion and best professional judgment to evaluate each event and choose the appropriate response.

The SORP details events from the time MWS receives notification of a possible overflow until the confirmed SSO or CSO is contained and the site is remediated. The identification of the responsibilities and responses for typical SSO or CSO is detailed in Appendix E, titled Spill and Overflow Response Plan Flowchart.

Appendix F outlines the standard operating procedures used in response to SSO or CSO events and the responsible parties for each work step.

### 4.1 MWS Receives Report of Possible SSO or CSO

MWS may receive a report of a possible SSO or CSO in a variety of ways. The most common and effective notification comes from individuals who observe the event and call the CSC at (615) 862-4600 option 1, option 3. As mentioned in Section 3.3, 24 representatives are employed in the CSC that may be involved in activities with collection system issues. Twelve of these representatives provide around-the-clock customer service seven days a week. CSC representatives take reports ranging from manhole overflows to sewage on private property. Other Customer Service employees, as well as cross-trained employees throughout MWS, can be pulled into Dispatch during emergencies.

MWS' more than 191,000 wastewater customers (estimated 650,000 persons) can identify a possible problem in the sanitary sewer system and alert MWS, through CSC, to initiate the SORP. When CSC representatives receive reports of potential wastewater problems, they initiate a Service Request through the CMMS as illustrated below. The call is then immediately dispatched to the First Responder.

Upon initial review by the First Responder, wastewater trouble calls associated with clean up require immediate investigation by the Claims Division of the Metro Nashville Legal Department. This requirement is weighed against the time of response by the Claims representative if customers are experiencing health and safety threat or property damage within their premises necessitating clean-up efforts beyond the scope or capability of MWS personnel. Immediate clean up efforts are begun ASAP in these cases. Non-threatening property damage and many other claims related calls are non-emergency situations and can be handled during Claims regular business hours. Examples include yard damage, driveway or walkway damage, or damage to a vehicle from debris falling from a MWS truck, as long as no personal injury was involved. Any standing sewer is handled as an emergency and remediated ASAP by MWS.

Calls from crews or other MWS employees, city employees, 911, or other agencies may go through CSC, MWS' dispatching center. System Operations personnel are highly trained in responding to trouble calls and receive frequent updates from crews by two-way radio or cellular telephone.

Since October 2008, MWS has used MWM in addition to current communication means. MWM allows for the electronic dispatch of work orders to the most available crew possible. Results of implementation have been favorable in relaying and capturing accurate information in addition to improve response times.

MWS also uses its many employees in the field for day-to-day operational purposes as a resource. As MWS employees are working throughout the system, they have a duty to observe problems and notify MWS of wastewater trouble issues. This is especially true through our CCTV work and the discovery of any impending collection system problems. These pre-emptive or preventive activities assist us in avoiding potential failures that may result in collection system overflows. MWS has recently incorporate robotic CCTV technology through a relationship with Red Zone LLC. Continuing relationship is pending as a result of the testing phase (May – June 2009).

Designated field crews also proactively look for overflows at “active and watch lists” locations that MWS has identified by tracking SSO or CSO that occurred during certain rain events. The crews initiate the survey based on predicted or recognized conditions that may cause wet weather SSO or CSO. These locations are also tracked through hydraulic modeling and calibration of the systems 84 permanent flow monitors and 19 rain gauges. Where hydraulically practical, flow monitors are installed, maintained and monitored in existing overflow locations. This enables MWS to report duration and volumes of overflow events with the intended purpose of defining needed system corrective action. Temporary flow monitors are added as needed to further delineate basin activities.

### **Active and Watch List Locations**

<b>Dry Creek Basin Sites - Active</b>			
106	Vandiver SPS		
109	Dry Creek SPS		
110	Loves Branch SPS		
112	Gibson Creek SPS		
117	Neely’s Bend SPS		
123	Lakewood SPS		
127	Madison Heights SPS		
132	Berwick Trail SPS		
150	Hidden Acres SPS		
<b>Whites Creek Basin Sites - Active</b>			
104	Whites Creek SPS		
107	West Park SPS		
114	Davidson Branch SPS		
136	River Drive SPS		
217	Basswood		
337	Richland Creek – TDOT		
339	Richland Creek – 23rd Street		
379	622 Davidson		
<b>Central Basin Sites - Active</b>			
103	McCrary Creek SPS		

124	Williamson Ferry SPS		
130	Browns Creek SPS (Visco Dr.)		
133	Holiday Travel Park SPS		
176	Dodson Chapel SPS		
189	Langford Farms SPS		
222	Barker Road		
226	Cowan Street SPS		
329	Village Ct		
338	Benita Drive		
<b>CSO Locations</b>			
18	Van Buren		Active
19	Kerrigan		Active
23	Benedict & Crutcher		Active
24	Washington Dee Cee		Active
33	Schrader Lane		Active
35	Driftwood		Active
47	Boscobel		Active
20	Broadway		Active

In addition, automated systems also alert System Operations to possible problems. The SCADA system, for example, is installed on all 103 MWS pump stations, and it helps predict or identify an event and determine its duration and volume. There are also historic overflow activity threshold alerts correlated to the systems 19 rain gages. A SCADA notification prompts dispatchers to contact the First Responder and/or Sewer Maintenance personnel either on shift or on-call, which investigates and remediates problems. Using a Web browser, IntelliServe by ADS Environmental Services allows MWS to monitor real time flows in the collection system at strategic locations. Rain data is combined with high depth identification to produce wet and dry weather-induced overflow alarm notification. These alarm notifications can then be sent through email or directly to a phone for further investigation by MWS' personnel.

**[See Appendix A for Information Technology Resources and Descriptions.]**

For all reports of possible sewer overflows, MWS collects the following information:

- Time and date of the call
- Name of person reporting the occurrence
- Location of the event
- Description of the event
- Time noticed
- Name and phone number of the caller
- Observations such as odor and duration
- Any other information to help in response time, containment, and remediation.

When CSC receives a report of wastewater trouble, the data is entered in the CMMS as a Service Request (below) and dispatches to the MWS First Responder.

The following is a sample CMMS screen used to complete a sewer complaint field investigation.

Metro Water Services		Service Request Detail	
Nashville, TN ( ) -			
Report Date	04/27/2007 10:41 AM	Submitted By	Lyn Fontana
Page 1			
Service #	127102		
Problem	SSSBU SEWER(AGE) BACKING UP		
Address	2501 FINLAND ST NASHVILLE TN 37208-		
Call Date	04/12/2007 09:28	Priority	
Taken By	FRAJ2 FRAZIER, JOHN W.	Responsibility	SM SEWER MAINTENANCE
Source		Project	
<input type="checkbox"/> Customer Contact Requested		Budget #	
<b>Service Request Progress</b>			
Schedule	(resolved)		
Inspect	Not inspected with no due date. Assigned to MCCSP STEVEN MCCLAIN.		
Resolve	Resolved at 04/12/2007 10:55 AM with code RES RESOLVED. No work orders are required		
Location	XST OSAGE		
Area		Sub-Area	
District		Map #	
Parcel	08110016000		
Template Type		A/P #	
Asset			
<b>Primary Caller</b>			
Name	KING		
First,MI	DARRELL,		
Address		Title	
City			
State/Province		ZIP/PC	
Country	<input type="checkbox"/> Foreign	Reference #	
E-Mail			
Day Phone	(615)569-2584 x	Evening Phone	
Call Date	04/12/2007 09:28	Taken By	FRAJ2
Comments	SEWER BACKING UP  CALLED OUT TO MCCLAIN @ 0930 4/12 JF		
<b>Call List</b>			
There are no additional callers for this service number			
<b>Log</b>	<b>Description</b>	<b>Log Started</b>	<b>Log Ended</b>
<b>Log Type</b>			<b>Entered By</b>
<b>Comments</b>			
RES	RESOLUTION	04/12/2007 10:55	ERNJD
	CHECKED METRO LINES, CLEAR, TALKED TO PROPERTY OWNER. PRIVATE TROUBLE		
<b>Inspected</b>		<b>Resolution</b>	
<b>By</b>	<b>Date</b>	<b>Time</b>	<b>Code</b>
<b>Scheduled Resources</b>			
<b>Employee ID</b>	<b>Scheduled Start</b>	<b>Scheduled End</b>	<b>Work Description</b>
No resources scheduled.			
<b>Equipment ID</b>	<b>Scheduled Start</b>	<b>Scheduled End</b>	<b>Work Description</b>
No resources scheduled.			
<b>Vehicle ID</b>	<b>Scheduled Start</b>	<b>Scheduled End</b>	<b>Work Description</b>
No resources scheduled.			

**4.2 System Response to Reported Discharges**  
**Receive a Call and Dispatch First Responder**

MWS CSC Dispatch receives a call or automated (SCADA) notification that initiates the field response, creates a Service Request in CMMS, and dispatches a field order by direct talk, land to cell phone and/or MWM to a First Responder in MWS’ SSD. All reports of sewer system failure or overflow is handled as an emergency and is responded to immediately.

The table below illustrates MWS’ activated actions.

**Response Actions**

<b>Response Level</b>	<b>Definition</b>	<b>Response</b>	<b>Actions</b>
Emergency	Pump Station Failure ( <i>Mechanical, Electrical, Electronic, or Power Supply</i> ) Collection System Overflow	Dispatch First Responders immediately and available crews if necessary	First Responders will assess situation and begin SORP activities. They can request additional resources through dispatch.
Routine	Typical Wet Weather Events	During/after wet weather events, Sewer Maintenance Crews investigate for activity or signs of activity for clean-up and any corrective action	Sewer Maintenance Crews field verify each site and begin SORP activities.

MWS considers all system failures resulting in an overflow or backup to be an emergency.

MWS will make all reasonable efforts to respond to an SSO or CSO within sixty (60) minutes of notification with qualified and equipped personnel. Allowances will be made to ensure that the safety of the Responder and the public is the first priority.

Dispatch waits for the First Responder to confirm the SSO or CSO report. Until the First Responder confirms there actually is an overflow, the reported situation is not considered an SSO or CSO.

After confirmation of the overflow, Dispatcher(s) stand by to dispatch additional resources as needed or close out Service Requests.

All sewer complaints and overflows are recorded and reported through the Department's CMMS and can be generated in a variety of ways including by date, by cause, by location, etc.

First Responders and/or SSD Crew Leaders managing the overflow correction is also responsible for making the initial and any follow-up Overflow Notification Form to TDEC. There is also collaboration with MWS' NPDES Staff to ensure proper and complete handling utilizing appropriate best practices. Any public notice beyond what was necessary at the overflow site is then determined.

**MWS Overflow Notification Form:**

This form is transmitted to TDEC (Ann Rochelle) within 24 hours of an overflow. Up-date notices are also sent to advise of additional information as needed. All overflow incidences are reconciled on MWS' Monthly Overflow Report to TDEC and are posted on the MWS website. (see next page)

## Sewer Overflow Notification Form

**From: Metro Water Services – Nashville**

**E-mail to: MWS Sewer Overflow Notification Group – this e-mail address includes (Ann Rochelle) TDEC FAX: (615) 687-7078 OR (615) 687-7072)**

**Check all that applies (fill in every line even if entry is n/a or unknown)**

ORIGINAL NOTICE <input type="checkbox"/>	UPDATED NOTICE <input type="checkbox"/>	DATE: <input style="width: 100%;" type="text"/>
REPORTING CONTACT: <input type="checkbox"/> Anthony Waggoner (615-566-3953) <input type="checkbox"/> Billy Raines (615-456-9212) <input type="checkbox"/> Eddie Waynick (615)-566-4015 <input type="checkbox"/> Other: <input type="checkbox"/> phone: <input style="width: 100%;" type="text"/> MWS Control Room (615) 862-4980		
MWS TELEPHONE NUMBER: 615-862-4600 (option 1, option 3 and then option 1)		
DATE OVERFLOW REPORTED:		TIME:
TIMES: <input type="checkbox"/> Observed <input type="checkbox"/> Alarmed start: <input style="width: 100%;" type="text"/> am/pm end: <input style="width: 100%;" type="text"/> am/pm		
VOLUME OF OVERFLOW (Estimated): <input type="checkbox"/> seep <input type="checkbox"/> over 100 gallons <input type="checkbox"/> over 1000 gallons Other: <input style="width: 100%;" type="text"/>		
LOCATION OF PUMPING STATION, MANHOLE or BREAK : <input type="checkbox"/> MH map Quad <input style="width: 100%;" type="text"/> # <input type="checkbox"/> SPS name: <input style="width: 100%;" type="text"/> Street or address <input style="width: 100%;" type="text"/> cross street <input style="width: 100%;" type="text"/>		
WATERBODY IMPACTED: <input type="checkbox"/> none ( surrounding ground only) <input type="checkbox"/> stormwater system <input type="checkbox"/> Waterbody name <input style="width: 100%;" type="text"/> if unnamed indicate downstream waterbody		
CAUSE: <input type="checkbox"/> grease <input type="checkbox"/> grit/debris <input type="checkbox"/> roots <input type="checkbox"/> line break <input type="checkbox"/> under review <input type="checkbox"/> I/I (rain caused) <input type="checkbox"/> SPS mechanical <input type="checkbox"/> SPS power outage <input type="checkbox"/> other (explain) <input style="width: 100%;" type="text"/>		
CORRECTIVE ACTION TAKEN/INCORPORATED: <input type="checkbox"/> remove blockage <input type="checkbox"/> Contained, est. volume <input type="checkbox"/> recovered, est. volume <input type="checkbox"/> bypass pumpage <input type="checkbox"/> filtration (hay bales) <input type="checkbox"/> other <input style="width: 100%;" type="text"/>		
EXPECTED COMPLETION TIME & DATE FOR CORRECTIVE ACTION or REPAIRS & CLEAN-UP: Follow-up clean-up necessary <input type="checkbox"/> yes <input type="checkbox"/> no Date <input style="width: 100%;" type="text"/> :Time: <input style="width: 100%;" type="text"/> am/pm <input type="checkbox"/> wildlife impacted (fish kill, etc) Reported for televising <input type="checkbox"/> yes <input type="checkbox"/> no		
ACTION TAKEN TO MINIMIZE HEALTH HAZARDS TO PUBLIC & IMPACT ON WATER QUALITY: <input type="checkbox"/> none necessary <input type="checkbox"/> coordinated with MWS NPDES <input type="checkbox"/> WQ sampling public notice: <input type="checkbox"/> barricades <input type="checkbox"/> signage <input type="checkbox"/> door hanger <input type="checkbox"/> outbound call <input type="checkbox"/> website <input type="checkbox"/> press release		



### 4.3 First Responder

#### 4.3.1 Receive Work via Direct Talk (two-way radio) or cellular communication

Depending on the time of day and work shift, First Responders will be Technicians, Maintenance and Repair Supervisors or Sewer Maintenance Crew Leaders. They will receive notices from either Dispatch or the Operation's Control Room indicating a sewer complaint or system alarm. All activities are logged into CMMS and dispatched through MWM.

#### 4.3.2 Confirm Sanitary Sewer Overflow

The First Responder immediately dispatches and investigates the scene of a possible overflow, and then reports to Dispatch to confirm system status and any needed resources. Until field confirmed, the report of a possible overflow is not considered a SSO or CSO.

The First Responder is responsible for ascertaining the source of any discharge or origination point of observed flow and determining the cause of the discharge if possible. This determination may vary depending on the type and location of the overflow.

To determine the location and cause of a reported overflow, the First Responder will investigate the manholes in the overflow location and/or trace the flow or watermarks indicating the path of flow back to its source. In this example, the manhole would be recorded for the SORP notification practices. The SORP Training Component contains more information relating to the process of confirming if the overflow is an SSO or CSO.

Backup in buildings require additional investigation to determine if the wastewater trouble is due to problems on the MWS' system or are a result of a failure on the service lateral. To determine responsibility for a backup, the First Responder will need to ascertain the location of the cause of the backup. CCTV resources are utilized immediately if practical or as soon as possible once overflow is corrected. This assists in determining whether there is a mainline defect or if a service lateral is causing system failure.

#### **Process for Investigating Building Backups**

##### 1. MWS Responsibility

- a. MWS inspects water levels in manholes to determine if the backup may be

caused by a blockage in the main. This type of manhole inspection is conducted by inspecting downstream manholes with respect to the blockage location. If flow is holding in upstream manhole and/or no water is flowing in the downstream manhole, or if a significant change in the flow is observed in the manhole, then MWS will televise or flush the line. If it is only flushed, then it is followed up with mainline CCTV to determine any system defect that may be causing the blockage or result in further problems.

- b. If the First Responder inspects the manholes and no evidence of a blockage is found in the main, then MWS will either televise or jet clean the segment. If line is only jet cleaned, MWS will later physically inspect the main using CCTV technology. If this investigation process does not reveal a blockage in MWS' wastewater collection system, then MWS will advise the customer to contact a plumber to resolve the disruption on private property.
- c. During severe wet weather events, or if the blockage is found to be MWS' responsibility, the First Responder will advise the customer and contact Claims to assist with cleanup and any other property restoration determined to be MWS' responsibility. If Claims is not immediately available, the First Responder will initiate clean-up activities through Metro contracts and emergency contact lists.

## 2. Customer Responsibility

- a. Consistent with Metro Code, the customer owns and is responsible for the maintenance of their service line from the main to the structure served. If the property is unsuccessful in making correction of the service line blockage, MWS will assist after the property owner has provided a clear and open access to the service line at the right-of-way or easement line.
- b. If the private service lateral is not retaining wastewater at the cleanout or open access located at property or easement lines, then the cause of the disruption is probably located toward the structure served. MWS will utilize a service line camera to inspect the service line from the cleanout or open access toward the main. If there is a blockage or failure in this segment, MWS will perform the necessary work to restore service. Residential customers will not be billed for this service. Commercial customers will be billed at-cost.
- c. If the private service lateral is retaining wastewater at the cleanout, then the cause of the disruption is downstream from this location toward MWS' main; therefore, additional investigation is required to determine if the blockage is in the main or in the remaining portion of the private service lateral.
- d. If a property owner disputes a determination by MWS that a building

backup is due to “private trouble,” then they may appeal the First Responder’s assessment through the Metro Claims.

### **Property Damage**

As needed, MWS Claims and MWS uses independent cleaning and restoration contractors to assist in cleaning, sanitizing, and repairing damages caused by SSO or CSO that are directly attributed to blockages or structural failures within MWS’s wastewater collection system. All restoration contractors are licensed professionals in their area of expertise and are available to MWS through a Metro Government contracts. MWS also has in-house capability of assisting with and handling system overflow clean up at the manhole or clean-out point source. Private property clean up is always handled through third party contractors. All SSO or CSO claims are managed in-house with a MWS Claims Investigator assigned to each incident. The investigator coordinates work tasks between MWS work crews and the independent contractors while keeping the customer informed of progress.

#### **4.3.3 Determine Whether Suspicious Substances May Be Present**

The First Responder then determines if there are any possible suspicious substances in the overflow. If there is indeterminate material in the discharge or an atypical odor or coloration sampling and further investigation may ensue. For example, the First Responder will contact the MWS Environmental Compliance Officer for site review and then subsequently the Department’s NPDES contact as needed for guidance on protecting the watershed from any environmental impacts.

If directed by the MWS Environmental Compliance Officer, there is an establishment of an interim control zone while awaiting additional resource review by a hazardous materials (HAZMAT) team or the fire department. Responders will take direction from the lead authority of the team until the area is deemed safe and then shall proceed with containment and remediation.

#### **4.3.4 Locate Disruption**

To determine the total impacted area and the necessary remediation techniques, the Responder must first identify the location of the disruption to the sanitary sewer system and the configuration of the infrastructure.

The First Responder will have either a computerized (GIS) or paper graphic of the sanitary sewer system to determine the infrastructure configuration and the necessary investigation points to be evaluated, such as downstream manholes, types of connections and other infrastructure or potential problem areas.

#### **4.3.5 Identify Impacted Area**

After locating the disruption, the next step is to identify the total impacted area. The Responder will trace the impacted area and determine what environmental impacts and potential hazards to public health are present and take the appropriate steps described in the SORP Training Component to mitigate the problem. Factors to be included in evaluating the impacted or potentially impacted area, include, but are not limited to the following:

- Streams and creeks and other natural waterways
- Stormwater infrastructure
- Private property
- Public safety and accessibility

Note: The Mill Creek Watershed will be given additional consideration due to the sensitivity of the Nashville Crayfish.

#### **4.3.6 Establish Control Zone Procedures**

When the First Responder identifies the area impacted by the SSO or CSO, the next step of the initial overflow response stage is to develop and implement a control zone around the impacted area. The control zone will help prevent public access around the perimeter of the affected surface area using appropriate signs and barricading practices. The purpose of the control zone is to warn those who may enter this area of potential health hazards associated with contact with SSO or CSO. The temporary signs and barricades will warn passersby to avoid contact with this area. This activity may be coordinated with MWS NPDES Section and/or TDEC representatives as appropriate.

#### **4.3.7 Assess the Site**

After the total impacted area has been identified and a control zone installed, the next step for the Responder is assessing the most appropriate response plan.

SSO or CSO can occur anywhere in the sanitary sewer system, including along creeks and within public right-of-ways or dedicated public easements. The Responders understand that each event may require a unique plan of action. Water monitoring may be necessary depending on the impacted area, the feasibility of containment during the SSO or CSO, and the potential for material to reach the waters of the state. Consistent with standard operating procedures, First Responders should contact the MWS NPDES Section if waters are impacted based on the flow path in the area and it is a dry weather SSO or CSO event.

MWS will employ all reasonable means to remediate the site and restore service to customers. The Responder will determine what resources should be used. The Responder should request specific guidance immediately from the SSD Supervisor or other designated resources for unusual situations or to ensure the proposed plan of action will meet the goals of the SORP.

#### **4.3.8 Identify Resource and Technique Requirements**

MWS will use all necessary response procedures and implement essential methods to ensure that the goals of the SORP are satisfied.

The following resources are available as needed:

- Trained personnel (Supervisors, Managers and Field Techs)
- Excavation equipment
- Combination and stand alone cleaner/flusher equipment
- Closed-circuit television equipment
- By-pass pumping equipment
- Other materials, such as sand bags, silt fences, lime, signs, barricades etc.
- Regulatory Agency contact
- Police Officers for needed site security

The Responder will identify the necessary resources and techniques based on site accessibility, location of disruption of service, size of impacted area, and need to minimize the impact on the environment and the risk of hazards to public health.

Refer to Section 3.0 for additional information relating to resources available to achieve the goals of the SORP.

#### **4.3.9 Mitigate Further Impact on the Environment and Hazards to Public Health**

MWS will reduce the negative impact on the environment and hazards to public health by employing all reasonable containment activities during overflow events. Refer to the Spill and Overflow Response Plan Flowchart in Appendix E and Standard Operating Procedures for SSO or CSO in Appendix F for procedures. The timing of this will be concurrent with mainline jetting, vactoring or televising to either eliminate the blockage or discover any system failure creating the overflow.

##### **4.3.9.1 Isolate or Contain SSO or CSO Overflows**

Containing spills is the concept of establishing a physical barrier to control the further dispersal of sewage thus reducing the impact on downstream areas such as private property and streams. An appropriately developed and established containment plan will consolidate the escaped sewage into a defined area. The use of vactor and/or combination cleaners to reclaim or vacuum the overflowed sewage is now practicable. This collected volume will be estimated and included in our SORP notification process.

Containment procedures will vary on a case-by-case situation. The Responders should request specific guidance immediately from the SSD Supervisor, MWS NPDES Coordinator, or other designated resources for unusual situations or to ensure that the proposed plan of action will meet the goals of the SORP.

MWS will reduce the potential negative impact on the environment and public health by employing all practicable containment activities during overflow events. Typically, the type of overflow event or the size of the overflow is the criteria for deciding if filtration or containment is the most feasible approach.

##### **Sandbagging or other constricting methods**

When site and weather conditions allow, entry points into the stormwater system may be obstructed with various methods that may include sand bags, hay bales,

inflatable plugs, or simply redirecting the flow using construction equipment to “dam-up” areas with available materials.

#### **4.3.9.2 Filtration of SSO or CSO Overflows**

Filtering spills establishes a physical strainer to reduce the impact of solids, paper, etc., from the flow by stopping or reducing the spread to downstream areas, such as private property and streams.

MWS will reduce the negative impact on the environment by employing all practicable filtration activities during overflow events. Typically, the type of overflow event or the size of the overflow is the criteria for deciding if filtration or containment is the most feasible approach.

MWS understands that this methodology would be used when other methods of containment are not practical. MWS further understands that this method does not offer complete bacteriological protection of the surrounding area and would exercise judgment to implement further measures to protect the watershed.

#### **Wet Weather Overflows**

During Wet Weather Overflows, the volume of the overflow can exceed the ability of the field crews to successfully contain it. For example, containment might not be practical or safe during an intense rain event with a high volume of overflow. Filtration may be the only option until the flow subsides. Filtration will be utilized where practical.

#### **4.3.10 Determine Whether Flow Diversion Techniques Are Practicable**

When possible, flow diversion techniques provide an effective means of conveying the overflow back into the sewer system. This procedure reduces additional potential impact on the immediate area and the possible impact downstream. The flow diversion techniques employed by MWS when practicable include, but are not limited to, the following:

- **By-passing measures**

Portable by-pass pumps can be used in certain situations to collect overflowed sewage from the environment and convey it back into the sanitary sewer system beyond the disruption of service. This method is most effective in bypassing a single identified problem area when the overflow can be directed to the next downstream manhole. It is not appropriate in wet weather overflows. This type of equipment can be used in conjunction with other containment measures or may be used independently.

- **Vector/Combination cleaner/flusher procedures**

Combination cleaner/flusher equipment provides an additional resource for collecting overflowed sewage and conveying it back into the sanitary sewer system beyond the disruption of service. This equipment can be used in certain situations in conjunction with other containment measures or may be used independently. Like portable by-pass pumps, this equipment may not be effective in wet weather

situations.

#### **4.3.11 Mitigation/Remediation Solutions**

The timely use of flow restrictions is the most effective instrument to reduce additional negative impact on the environment. Also, this phase of field activities may enable restoration of service to MWS wastewater customers.

The type of mitigation and remediation will vary depending on the cause of the SSO or CSO. Wet weather SSO or CSO are usually caused by inflow and infiltration (I/I), not by blockages or other problems in the system. Mitigation of wet weather overflows may not be possible until the overflow subsides, but when it does, MWS will implement all necessary steps to clean up and disinfect the overflow site.

Dry weather events may be addressed using several methods. The field professionals should identify the most effective method or combination of methods to return service to the system. Field crews should use television inspection to determine the most effective way to resolve any service disruption. CCTV inspection will identify the cause and location of the blockage and the necessary techniques needed to eliminate it.

The following summarizes common abatement resolution activities. These resolution techniques can be used independently or combined based on field conditions and CCTV inspection.

- **Roots/Grease**

Combination cleaner/flusher equipment is used to remove any grease, roots, or other obstructions from the line. A root cutter attachment may be necessary to remove the obstruction. Heavy roots and related pipeline integrity problems (through CTTV inspections) are reviewed for potential replacement and/or rehabilitation. Heavy cleaning may also be achieved through third party services as appropriate.

- **Collapsed Pipe/Sewer Breaks**

An emergency pipe repair is required to replace the defective or collapsed pipe. A work order will be initiated immediately and necessary containment and diversion procedures will be in place until the appropriate repairs are completed.

- **Mechanical Failures/Treatment Facility Malfunctions**

By-pass pumping or pump around may be used until the mechanical repairs are completed at the pump station or treatment facility. The responding crews should notify System Services to acquire additional support from construction crews as soon as the emergency repairs are identified.

- **Remove I/I**

MWS will evaluate systemic wet weather SSO or CSO and implement corrective measures as part of the Overflow Abatement Program. Currently MWS is completing a Corrective Action Plan Engineering Report (CAP ER) to specify projects and timeframes for more comprehensive system corrective action.

#### **4.3.12 Begin Clean Up**

MWS' clean up of the impacted area will be thorough and comprehensive. The extent and methods employed during clean up will vary. Methods to be used will include wet vacuuming or other removal of spillage, containment, bypass pumping to on-site tanker or nearby sanitary manhole. Private property clean-up including wiping floors with cleaning solution and disinfectant, flushing out and disinfecting plumbing fixtures, carpet cleaning and/or replacement, and other measures to disinfect and/or remove items potentially contaminated are typical with companies MWS utilizes for the clean up process. MWS NPDES are involved as appropriate depending on overflow location, proximity to waters of the state and/or impact to the environment.

MWS follows these general practices, depending on the individual situation:

- **Manual Practices**

Manual clean up techniques use hand tools, such as rakes, shovels, brooms, etc., to remove all readily identifiable material (sewage solids, papers, plastics, etc.) originating from the sewer system and properly dispose of it.

#### **Disinfection Practices**

Apply lime or other disinfectant and deodorization agents.

- **Mechanical Practices**

When warranted, MWS will take extra steps (prior to disinfection) to remove contaminated soil. Mechanical clean up techniques, for example, use specialized excavating equipment, combination cleaner/flushers, or by-pass pumps, etc., to remove all impacted substances and properly dispose of them. This could include the removal of impacted soil if determined by SSD Supervisor and/or MWS NPDES Coordinator.

The goal of the clean up practices is to restore the site to pre-event conditions. One or more of the practices may be required, depending on the size and duration of the overflow and the area impacted. SSD Supervisor will perform a site visit to confirm site status after remediation for any follow-up work.

#### **4.3.13 Conduct Follow-Up Inspections**

CCTV equipment, along with other investigative tools, should be used after remediation to verify the exact cause of the disruption and the success of the applied procedure or technique. The follow-up inspection should occur within two to three or days of remediation. Records of these activities are kept in CMMS.

### **4.4 Public Advisory Procedures**

This section describes actions MWS takes, with TDEC and other appropriate authorities, to temporarily limit public access to areas potentially impacted by overflows from the wastewater collection system.

#### **4.4.1 Control Zones**

The First Responder will attempt to prevent public access by establishing a control zone



around the perimeter of the affected surface area using appropriate signs and barricading practices. The temporary signs and barricades will warn passersby to avoid contact with this area.

Barricading practices will include, but are not limited to, cones, warning tape, barrels, barricades, etc. The limits, duration, and most appropriate control zone plan will vary on a case-by-case situation.

The control zone does not necessarily prohibit use of recreational areas, unless posted otherwise, but provides a warning of possible public health risks from contact with sewage.

#### **4.4.2 Location of Control Zones**

Although the location of temporary signs and barricades will vary for each site, the goal will always be to warn the public to avoid contact until the clean up is complete.

When possible, the control zone will be posted:

- Just beyond the limits of the impacted surface area
- Near high pedestrian and/or vehicular traffic areas
- Other appropriate locations.

#### **4.4.3 Duration of Control Zones**

Signs and barricades will be posted as soon as the overflow is confirmed and they will remain in place until clean up activities are complete. The timeframe may vary depending on the extent of the response activities, which may include significant mitigation and clean up requirements.

#### **4.4.4 Public Information**

The Public Information Officer (PIO) or their designee will answer questions from customers about MWS' response to SSO or CSO and, when necessary, will respond to the customer reporting the SSO or CSO to explain MWS' response. The control zone signs also include the contact number (615) 862-4600 for the public to call for additional information. In the event property damage has occurred, Metro Claims will respond. The department may also use outbound calling to affected customers through CIS.

#### **4.4.5 Door Hangers [See Appendix B]**

Where warranted, MWS may use a door hanger with blank fields for the date and location of overflows that can be filled in as needed in the field and left for customers. The door hanger includes ways customers can contact MWS for more information. Follow-up information will be provided to customers concerning additional remediation and/or their responsibility if the source of the overflow is their service line (roots, grease, debris or extraneous flow).

#### **4.4.6 News Release [See Appendix B]**

MWS maintains a standard news release on SSO or CSO that can be quickly adapted to the particular situation and issued if MWS determines there is a significant threat to public health.

#### 4.4.7 Customer Letters [See Appendix B]

In situations where a grease, roots or debris caused blockage has been identified, MWS sends letters to residential and commercial customers in the affected area. The letters advises the customer of their service line condition and their responsibility in alleviating future SSO or CSO by removing roots, extraneous water, disposing of grease and other materials properly and including a brochure on proper disposal.

#### Public Notification Decision Matrix

Event	Action
Overflow into streams	MWS will place temporary signs along the stream at public access points unless posted otherwise. or MWS may utilize door hangers or outbound calling for homes or businesses that may be impacted by the overflow. Additional notification will be considered in conjunction with MWS NPDES Section and TDEC.
Overflow in a residential or high traffic area, such as a school or public park	MWS will place temporary signs in the area of the overflow. MWS will utilize door hangers or outbound calling for homes or businesses that may be impacted by the overflow. Additional notification will be considered in conjunction with MWS NPDES Section and TDEC.

#### 4.4.8 MWS Web Site - See <http://www.nashville.gov/water/consentdecree/>

MWS will post a monthly summary of SSO or CSO (excluding service lateral caused building backups) on its Web site. The posting will include, at a minimum, the following information:

- Date
- Time
- Duration
- Location
- Estimated volume of the overflow
- Overflow cause
- Corrective Action

#### 4.5 Notification Procedures for External Organizations

When an SSO or CSO occurs, MWS performs the appropriate notification procedures as specified in its NPDES permit.

#### Types of Notification of SSO or CSO Events:

- **Immediate Notification [See 4.2 above.]**

SSD Supervisor or designee sends TDEC an Overflow Notification within 24 hours of a confirmed SSO or CSO. MWS is also available to reply to any requests for additional information by TDEC. This contact information is included on the Notification Form.

TDEC Contact Person: Ann Rochelle, Nashville Environmental Assistance Center,  
[ann.rochelle@state.tn.us](mailto:ann.rochelle@state.tn.us)

- **Updated Notification (as needed)**

SSD Supervisor or designee may send TDEC an updated Overflow Notification in the event that the original notice requires follow-up. MWS will also be available to reply to any requests for additional information by TDEC.

TDEC Contact Person: Ann Rochelle, Nashville Environmental Assistance Center,  
[ann.rochelle@state.tn.us](mailto:ann.rochelle@state.tn.us).

- **Monthly Notification**

MWS summarizes the SSO or CSO for the calendar month into a report and attaches the document to its NPDES Overflow Monitoring Report. The Monthly Overflow Report summarizes and reconciles information conveyed in the individual Overflow Notifications.

#### 4.6 Required Reporting Information

The collection of necessary information by responding professionals as described in Section 4.1 is crucial to provide accurate reporting.

To facilitate accurate record keeping and notification procedures, MWS collects the following information:

- Date and estimated time of the occurrence
  - Name of individual reporting occurrence
  - Location and street address of SSO or CSO (include MWS manhole number)
  - Cause of SSO or CSO and failed system component
  - MWS response activities
  - Name of MWS Responders
  - An estimation of the volume recovered and not recovered
  - Duration of SSO or CSO event
  - Did the overflow reach “Waters of the State”
  - Name of receiving water and path, if applicable
- If flow from the SSO or CSO event was determined to reach “Waters of the State,” provide the name of the receiving water, if any. Also, provide the path that the flow used to reach this body of water to the extent field conditions or equipment will allow. The following is a list of typical water conveyance components.

Potential path to Waters of the State

- Stormwater Pipe/Catch Basin

- Ditch or Swale
- Detention/Retention Basin
- Creek/River.

These basic techniques are available to determine the amount of overflow that has occurred.

- Flow monitored data where available
- Calculating spill volume based on surface area
- Calculating Overflow from Pump Station or Pressurized System

Refer to Appendix C for estimation methods for manhole overflow calculating spill volume based on surface area.. The technique of estimating the volume overflowed based on duration and measured flow rate is not the preferred method for an overflowing manhole. The most appropriate application of this technique relates to overflows occurring at pump stations. The flow rate is extremely difficult to measure outside the confinements of the pump station scenario, therefore that technique will not be used in non-pump station scenarios.

#### **4.7 SSO or CSO Building Backup Tracking Due to Public Infrastructure Failure**

Information regarding SSO or CSO resulting in building backups will be captured during the SORP process. Appropriate handling of the system defect and customers affected will follow procedures as outlined previously. Incidents will be reviewed to determine if there is potential for recurrence for further appropriate action. MWS will be able to report such events as needed. As indicated, events of this nature will be reported consistent with SORP guidelines.

#### **4.8 Critical Incident Review Process**

In the event of a critical system component failure, such as a pump station or a breakdown in response to collection system problem or compliant, the process owner and/or his designated staff will initiate a critical incident review with the departments involved in response to perform a root-cause analysis and provide recommendations that may prevent future occurrences or improve response.

#### **4.9 Quality Assurance**

To ensure an appropriate response to collection system problems, including SSO or CSO, members of the Sewer Maintenance, Route Services, Engineering and Stormwater teams will audit monthly the response to evaluate how effectively the crew implemented the requirements of the SORP. The team will compare the actual response with standards of the SORP. If opportunities for improvement are identified, the responsible work sections will initiate appropriate resolution.

## **Section 5**

### **5.1 Training**

SSD, Route Services and NPDES personnel will conduct training for the appropriate response crews and support staff to ensure their compliance with the SORP. These training sessions will be organized based on the latest SORP, as well as other reference materials. Training sessions will be supplemented with a practical hands-on field component to ensure all response personnel are prepared for all anticipated situations.

Also, SSD, Route Services and NPDES will conduct refresher sessions annually or when changes are made to the SORP to ensure the same results. SSD will oversee the SORP to ensure that the established procedures are being followed during implementation and field operation.

### **5.2 Review and Update SORP**

MWS will review the SORP annually and amend it as appropriate. Review shall include, at a minimum, the following activities:

- Conduct workshop with managers and key personnel to review response activities and gather suggestions for new or revised procedures
- Review all contact lists and update as necessary
- Update the SORP as needed in regard to updated regulatory requirement.

### **5.3 Distribution and Availability of SORP**

Copies of the SORP and any amendments will be distributed to responsible personnel and will be available to all employees through shared electronic files and website.

# **Appendices - Supporting Information**

## **Appendix A: Information Technology Resources and Descriptions**

- 1.0 Geographic Information System (GIS)
- 1.1 View of the GIS System and Description of Components Shown
- 2.0 Customer Information System (CIS) and Computerized Maintenance Management System (CMMS)
- 3.0 Interactive Voice Response System (IVR)
- 4.0 System Control and Data Acquisition System (SCADA)
- 5.0 Mobile Workforce Management (MWM)

## **Appendix B: Public Advisory Procedure Example**

- 1.0 Sanitary Sewer Overflow Alert door hanger
- 2.0 Sanitary Sewer Overflow News Release
- 3.0 Customer Notification Letters Informing of Service Lateral Problems MWS Grease Management Program Door Hanger
- 4.0 MWS Grease Management Program Door Hanger

## **Appendix C: Field Manual SORP (includes estimator tool)**

## **Appendix D: On-call List**

## **Appendix E: Spill and Overflow Response Plan Workflow**

## **Appendix F: Standard Operating Procedures for SSO or CSO**

# **Appendix A: Information Technology Resources and Descriptions**

## **1.0 Geographic Information System (GIS)**

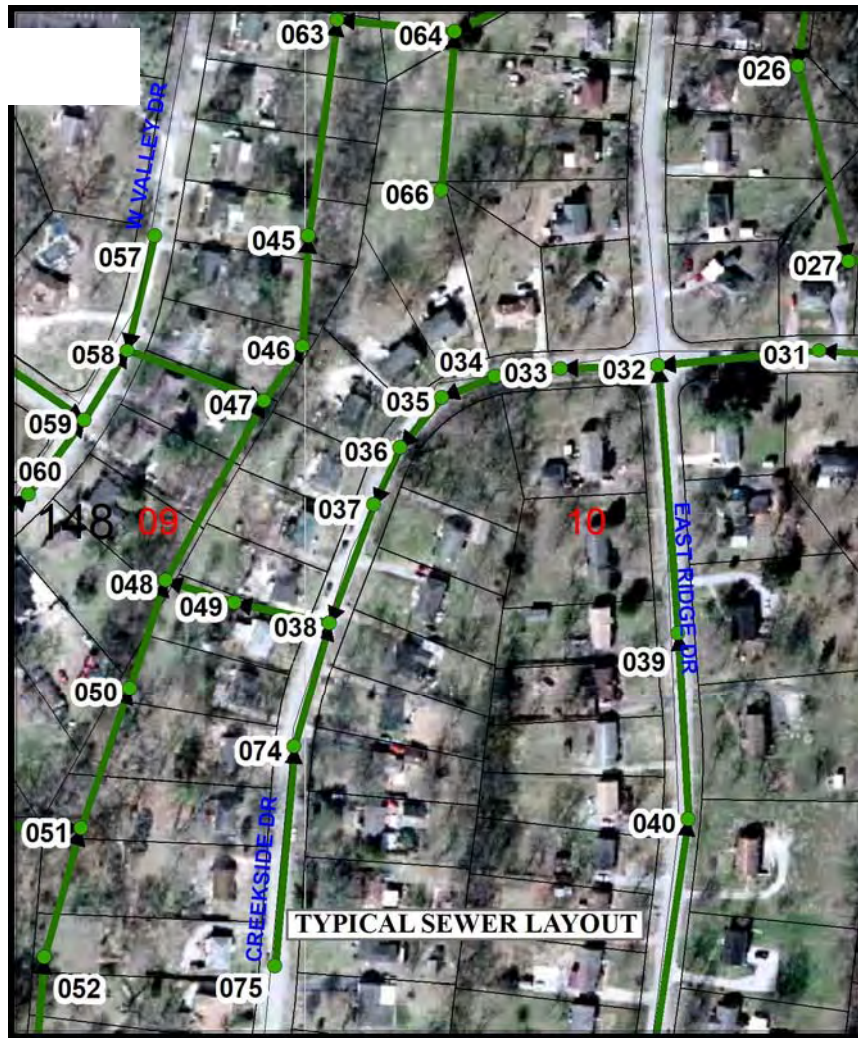
The Metro Nashville Planning Commission and MWS administers the common portions of GIS and its computer system. It also provides GIS and computer technical support and serves as a clearinghouse of GIS information and products.

The Records and Mapping Section of the MWS Engineering Division is also responsible for updating a common set of computer-based maps (for all Davidson County) that are used by all of its users. This base map data includes planimetric maps, topographic maps, and digital ortho aerial photography. Discovered mapping discrepancies from the field are documented and reported to the Records and Mapping Section for GIS update.

From a technical standpoint, the GIS displays the graphic (map) data as layers of information; that is, streets on one layer, parcels on another, buildings on another, etc. That allows an almost unlimited flexibility for viewing only the desired features and area.







**2.0 Customer Information System (CIS) and Computerized Maintenance Management System (CMMS)**

The CIS maintains records of account numbers, premise details, and other customer information. It also generates work orders and facilitates workflow between departments while keeping a record of activities requested by a particular customer or group of customers.

The CMMS maintains records of infrastructure assets and historic repair and maintenance activity performed. It also generates service requests and work orders and facilitates workflow between departments while keeping a record of activities requested by a particular customer or group of customers.

The CIS and CMMS allows requests to be passed from the Customer Service Center to the First Responder and crews as a service request or work order.

Requests received from customers as well as internal requests are entered into the CIS and the CMMS as appropriate. Information including customer name (if given), location, specific problem, and any additional comments that would help in the swift response to the request is recorded. Field communication with the customer is performed as appropriate.

### **3.0 Interactive Voice Response System (IVR)**

The IVR is the automated system that enables customer calls to be routed to the appropriate MWS representative. This system allows MWS to shorten hold times, provide fewer call transfers to the customer, and ensure that urgent calls are answered before lower priority calls.

Callers choose from options that include reporting account inquiries, stormwater, water, or wastewater emergency. Callers may also press 0 at any time to be connected to a customer service representative.

### **4.0 System Control and Data Acquisition System (SCADA)**

The automated SCADA system may also initiate a field order through MWS Control Room. SCADA notifies the Control Room who in turn notifies Route Services if there is a system failure in any of MWS's 103 pump stations. SCADA gives valuable information on the duration of the overflow. SCADA is also used to identify system improvements and the operability of the station and to identify potential SSO or CSO events so that measures can be taken to prevent an overflow.

### **5.0 Mobile Workflow Management (MWM)**

MWM was initially implemented by SSD in October of 2008. This system enables field orders to be dispatched to First Responders and other field personnel from CIS and CMMS electronically. The order will be dispatched to the field through cellular phone technology enabling field crews to view information on a laptop. The GIS system is also used in the field to provide a map of the area to show the location of the sewer line and of the nearest residence or manhole. Field orders will be completed by the respective Field Personnel on their laptops that in turn will immediately update the CIS and CMMS. Any needed follow-up work is generated from the field for subsequent completion. Remote monitoring of field activity is possible through this technology by Managers and Supervisors enabling safe and productive processing of work.

# Appendix B: Public Advisory Procedure Examples

## 1.0 Sanitary Sewer Overflow Alert door hanger



METRO WATER SERVICES  
SYSTEM SERVICES DIVISION  
1616 THIRD AVE. NORTH  
NASHVILLE, TN 37208  
(615) 862-4600

### Sewer Overflow Notice

This notice is to advise you that Metro Water Service has responded to a sewer overflow in your area. MWS response to overflows is coordinated with Local and State Watershed Management Agencies. Please avoid the affected area and note the following:

Date: \_\_\_\_\_

Address or general location of overflow:  
\_\_\_\_\_

The overflow was/is:

- corrected
- in process of being corrected – you will receive further information
- continuing and will be corrected asap. You will receive further information.

The overflow was/is:

- isolated to the area immediately around the manhole
- extended to a area beyond the manhole area but did not reach any stormwater system
- extended to an area beyond the manhole and did enter stormwater system

Clean-up of the overflow is:

- complete
- in process – you will receive further information.

The overflow was caused by:

- grit/debris
- grease buildup
- roots
- other \_\_\_\_\_

OTHER COMMENTS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If you need further assistance, please call Metro Water Services at: 862-4600 Option 1 for English, Option 3 for Emergency Service and reference the following Service Request/Work Order No.

SERVICE REQUEST/WORK ORDER NO:  
\_\_\_\_\_

## **2.0 Sanitary Sewer Overflow news release (to be coordinated with TDEC)**

MWS maintains a standard news release on SSO or CSO that can be quickly adapted to the particular situation and issued if MWS determines there is a significant threat to public health.

### **NEWS RELEASE**

DATE XXXXXXXXX  
For Immediate Release

For More Information  
Contact: Sonia Harvat  
MWS Public Information officer  
sonia.harvat @nashville.gov  
(615) 862- 4494

### **MWS Alerts Customers to Sanitary Sewer Overflow**

MWS issued an alert today to people in the [insert area(s)] concerning a sanitary sewer overflow.

“The overflow occurred as a result of [heavy rain/ a blockage/ or other],” said Sonia Harvat, MWS Public Information Officer. “MWS responds to overflows in a manner consistent with state and national standards. We warn passersby to avoid contact by posting signs and using barricades, and we disinfect the area after the overflow stops.”

Note: Use this paragraph if the overflow is in a park/significantly affects a stream/etc.

The signs do not necessarily prohibit use of recreational areas, unless posted otherwise. The Tennessee Department of Environment and Conservation (TDEC) determines whether to post nearby waterways that may have been affected if water quality testing indicates a need.]

Overflows pose hazards similar to those in public restrooms or even your own bathroom. If you, your family, or your pets do have contact with the overflow, wash thoroughly with soap and water. Remember: Washing your hands carefully and often is the best defense against illness carried by animal or human waste.

MWS maintains a log of recent overflows and clean up efforts and other wastewater information at <http://www.nashville.gov/water/>. If you have questions or need to report an overflow, please call MWS at (615) 862-4600, option 1, option 3.

#####

**3.0 Customer Notification Letters Informing of Service Lateral Problems –  
Maintenance of Sewer Service Connection**  
**These letters will be modified by the author per specific location and condition**

**FIRST NOTIFICATION**

Date: XXXXX

Name: XXXXXXXX

Address: XXXXXXX

RE: Notice of collection system non-compliance

The Code of the Metropolitan Government and Davidson County, Tennessee requires that owners maintain their service line “in such a condition as to safeguard the property, life and health of others”. Specifically this means that excess ground water overloading the public system through joint leaks, sump pumps, roof drain or surface water inlets or sewer line blockages due to root intrusion, grease and/or debris from the service line is prohibited.

Through closed circuit televising and other methods of evaluation of the public sewer system, Metro Water Services (MWS) has determined that...

- excess water
- roots
- grease
- debris

...are present in your sewer service line impacting the operating condition of the public system. In accordance with Metro Code, you must take action to ensure that your service line is in proper operating condition.

Metro Water Services fully recognizes that you may not have been aware of problems in your service line and that you may not have experienced any service problem. Taking the necessary corrective action to restore your service line to its intended operating condition will protect your interests as well as the public's’.

In order to provide adequate time for you to address these service line problems, MWS will reinvestigate the public main serving your property on or about \_\_\_\_\_ (sixty (60) days) from the date of this letter. If there is evidence that the condition affecting the public system is not corrected, MWS will take appropriate action that may include interruption of water service to this address until such time as the sewer service line problem(s) is corrected. There may also be additional charges for water service disconnection and reinstatement.

MWS is willing to work with you to the extent possible on the correction of your service lateral problems. You may call to make an appointment to discuss by calling (615) xxx-xxxx and speak to (insert appropriate person(s)).

You can find a copy of the “Metro Code” at the Metro Clerk’s Office or on the internet at <http://www.nashville.gov/mc/>.

For your convenience, included are the sections that pertain to sewer service line maintenance below.

**THE CODE OF THE METROPOLITAN GOVERNMENT OF NASHVILLE  
AND DAVIDSON COUNTY, TENNESSEE,**

15.40.020 Regulation and enforcement--Authority of director.

The director is authorized and directed to promulgate and enforce such rules and regulations as he may deem necessary for the enforcement of this chapter and for the safe, economical and efficient management, control and protection of the government's public sanitary sewerage system.

15.40.050 Maintenance of service connection--Owner's and Department's responsibility.

A. The Owner will own and maintain his sewer service line from the public sewer main to the structure served.

B. If the Owner experiences sewer service interruption as a result of a sewer service line failure and has demonstrated a good faith effort to remedy the problem, the Department shall make any necessary repair on the portion of sewer service line inside the public right-of-way or easement from the main to the boundary of right-of-way or easement. Provided, however, that before the Department will make such repairs, the Owner must provide an excavated clear and open access to the sewer service line at the right-of-way or easement boundary. Residential customers will not be billed for any repair performed by the Department under this Section. Commercial customers shall pay all costs of repair incurred by the Department under this Section and such costs shall be billed on the customer's next bill.

15.40.090 Stormwater--Runoff to sanitary sewers prohibited.

The discharge of stormwater runoff to separate sanitary sewers is prohibited.

**Maintenance of Sewer Service Connection**

**SECOND NOTIFICATION**

Date: XXXXX

Name: XXXXXXXX

Address: XXXXXXXX

RE: Notice of collection system non-compliance

The Code of the Metropolitan Government and Davidson County, Tennessee requires that owners maintain their service line “in such a condition as to safeguard the property, life and health of others”. Specifically this means that excess ground water overloading the public system through joint leaks, sump pumps, roof drain or surface water inlets or sewer line blockages due to root intrusion, grease and/or debris from the service line is prohibited.

Through closed circuit televising and other methods of evaluation of the public sewer system, Metro Water Services (MWS) has determined that...

- excess water
- roots
- grease
- debris

...continue to be present in your sewer service line impacting the operating condition of the public system.

Consistent with the first notification that you were provided approximately sixty (60) days ago, MWS has no choice but to (insert action taken such as disconnection of your water service). *This disconnection will occur thirty days from the date of this letter. If on a weekend, disconnection will occur on the next business day* (these sentences will be incorporated as reflective of action taken)

In order to avoid a disconnection of water service and any SSO or CSO associated fees, you must present evidence of corrective action taken to remedy the problem with the sewer service line. This evidence could include but is not limited to a paid invoice for corrective action taken through a third party. Upon such notice, MWS will then re-televising the public system to determine sewer service line condition. There will be a charge of this activity and will appear on your next bill. Any punitive action taken by MWS will be reversed upon the determination of a safe and functional sewer service connection.

If you have questions and wish to speak to a MWS representative, please call (615) xxx-xxxx and speak to (insert appropriate person(s)).

#### **4.0 MWS Grease Management Program Door Hanger**

**This door hanger is left for property owners if there is discovery of grease in the public line serving their property or observed through CTTV coming into the system from the service lateral.**



#### GREASE MANAGEMENT PROGRAM

**How to prevent grease from causing blockage in your sewer line and impacting the environment:**

- Pour all used cooking oils and grease into a small container so it can cool and harden. When container is full, cap the container or cover it tightly, place in bag to prevent leakage and put in garbage container.
- **Do NOT pour any cooking oils or grease into your kitchen sink or other drain lines. This can cause a severe blockage in your sewer service and the downstream sewer system.**
- Dry wipe all pots pans and plates before washing in sink or dishwasher. Use paper towel and wipe contents into garbage container.
- If you have a kitchen sink garbage grinder, use this as little as possible since food particles and grease will clog your sewer line or effect the downstream sewer system.

*Your awareness and the action you take to prevent fats, oils and grease from entering the sewer system will benefit your community by preventing sewer blockages and overflows. Thank you for helping to improve our environment.*

## Appendix C: Field Manual SORP





## *Metro Water Services*

### *System Services and Route Services Division*

#### **Sewerage Spills and Overflow Incidents**

#### *Guidelines & Procedures*

#### *Field Manual*

*(quick reference tool for field personnel)*

### **GOAL**

To reduce or eliminate the public health risks and environmental damage associated with illicit discharges from the public collection system.

METRO WATER SERVICES - SYSTEM SERVICES AND  
ROUTE SERVICES DIVISION

### **Collection System Sewerage Spills and Overflow Incidents**

## Guidelines and Procedures

System Services and Route Services is available 24/7/365 to respond to any public health or environmental problem related to an illicit discharge of sanitary sewage. The following guidelines and procedures address the manner in which these incidences are to be handled by System Services' and Route Services' employees when practical or applicable.

*Definition of Discharge Point: Any point in the public collection system where sewage is discharged on to roadways, public and private property, or directly or indirectly into creeks or rivers.*

### GUIDELINES

When notified of an overflow from the public collection system, remember the following:

- 1) **Correction/Containment**
- 2) **Contact**
- 3) **Cleanup**

#### **Correction/Containment (dry weather overflows and wet weather overflows where practical)**

- (a) Upon arriving at the discharge site, immediately proceed with measures to stop the discharge of sewage. If discharge cannot be stopped within thirty minutes of corrective action activity, notify supervisor for additional equipment/resources as required. Proceed to (b).
- (b) Make every effort to contain surface discharge drainage when site and weather conditions allow. Entry points into the stormwater system may be obstructed with various methods that may include sand bags, hay bales, inflatable plugs, or simply redirecting the flow using construction equipment to "dam-up" areas with available materials or through by-pass pumping into downstream manhole and/or into tanker truck. Make every effort to isolate discharge to the site. If the discharge is in the CSS, sewage can be washed into the collection system. Call dispatcher for any assistance needed.
- (c) Barricade, flag, or hazard tape the affected area to minimize potential contact with the public.

#### **Contact**

- (a) Contact the MWS Dispatch to report the following information:
  - exact location and condition of site
  - public or private collection system
  - all contractors or construction work observed in area
- (b) Document this information, as well as the cause of the blockage (roots, grease, etc.) on the Work Order.
- (c) Notify affected property owners as soon as possible of incident and corrective action being taken. See Public Notice section below for more details.

- (d) If the public collection or private system overflow is near or in a water body or storm system, contact the on-duty supervisor. The on-duty supervisor will immediately contact the MWS NPDES Section for remediation advice and guidance.
- (e) The responding supervisor is also responsible for ensuring that an Overflow Notification Form is completed and transmitted to the Division of Water Pollution Control (TDEC) and Metro Stormwater - NPDES Section within 24 hours. This transmittal group also includes MWS' personnel.

**State of Tennessee Water Quality Division**

**Ann Rochelle**

Office Number: .....(615) 687-7123

e-mail address: ..... [ann.rochelle@state.tn.us](mailto:ann.rochelle@state.tn.us)

**Joey Holland** ..... (615) 687-7020

**Metro Stormwater - NPDES Section**

**Michael Hunt**

Office Number: .....(615) 880 - 2420

e-mail address: ..... [michael.hunt@nashville.gov](mailto:michael.hunt@nashville.gov)

## Cleanup

- (1) For inline sewer stoppage (grease, roots, or debris), clear blockage as soon as possible. If this cannot be accomplished within thirty minutes of start time, on-site Lead needs to make a determination on whether to proceed with containment where practical.

*or*  
**(Note: Notify affected property owners as soon as possible of incident and corrective action being taken. See Public Notice section below for more details.)**

- (2) If possible, manually remove sewerage debris from discharge point and transport to compost lot for processing to landfill. This includes all solids that were discharged from our sewer system. This will decrease the aesthetic impact at the discharge point.
- (3) If overflow has entered a creek or river (or has potential to) the on-duty supervisor shall consult with MWS NPDES personnel in order to collaboratively identify the scope of the cleanup effort.

### **Metro Stormwater - NPDES Section**

See On-call list

.....Do not wash down discharge that could drain into nearby catch basins, ditches or creek beds. Note: If spill is directly in creek or drainage bed, contact NPDES Section for potential remediation options. Utilizing input from the TDEC and MWS NPDES Section, an on-site decision will determine if it is appropriate to flush streambed. If the damming of stream channel is required, only sandbagging for containment will be approved and complete removal of sandbags will be required. If in the event of a broken sandbag, all loose sand will be removed from stream channel.

Note: Due to Federal regulations, do not use city (chlorinated) water to clean creek bed. Non-chlorinated water can be brought in to use in the event of a large spill. Non-chlorinated water can be obtained at Central, Dry Creek and Whites Creek Wastewater Treatment Plants. The department is in the process of securing Chlorine diffusers for available public water use as needed. Never use high-pressure (jet) water for creek or drainage bed cleanup due to potential soil erosion or danger to aquatic life.

- (4) If a creek, river or other waterbody has been impacted by sewerage, dissolved oxygen levels should be monitored and observations made to determine if fish or other aquatic life have been killed. Death of fish and aquatic life may not result until several hours or the next day following the discharge into the stream, after oxygen depletion occurs due to breakdown of the sewage through natural process. Monitoring results and any observations made should be included in the report submitted to the Division of Water Pollution Control describing the overflow incident. In the event that fish or other aquatic life have been killed, the Tennessee Division of Water Pollution Control should be notified as soon as possible, but no later than 24 hours following discovery of the incident. Division personnel can be contacted through the **Tennessee Emergency Management Agency (TEMA) at 741-0001** if the fish kill occurs after regular business hours, on holidays, or on weekends.
- (5) Lime and disinfectant may be used around discharge points in isolated grass areas and under homes, if needed, upon agreement of property owner. **Do not use lime or disinfectant in creek or drainage**

**beds.** More extensive property restoration and clean-up on private property should be performed by Metro contractors.

- (6) If the discharge point is the result of a sewer segment failure by either natural causes or actions of others, start by-pass pumping to public sanitary sewer as soon as possible. If contractor on site is responsible and cannot start by-pass pumping in a timely manner, call dispatcher for MWS pump crew.

Note: If caused by others, this work can be billed back to the responsible parties. If possible have jet-vacuum truck keep sewerage confined to collection system while this by-pass pumping is being put in place. Take every possible action to confine sewer discharge to site.

(7) Public Notice

Depending on the severity and location of the overflow the following actions will be taken:

- Barricades and signage will be used to protect the public from overflow impacts. Customers with property contiguous or downstream of the overflow location will be contacted directly. This will involve either direct customer contact and/or a Notice of Overflow in the form of a door hanger (see attachment I). Outbound calling may also be used in situations involving more than ten (10) customers or when direct on-site contact is impractical. Information shared will include status of the collection system, health or safety concerns, cause of overflow, corrective action taken, MWS contact information and what the customers can do to prevent future problems (roots from service line, grease, debris, etc). These communication efforts would be coordinated with MWS Public Information Officer (PIO) and/or NPDES Staff.
- The general public will be notified of events if the overflow impacts large common areas or if it reaches water courses with which the public could potentially come in contact. These efforts would be coordinated with MWS' PIO, NPDES Staff and/or TDEC as needed. The form of this communication for events such as these would be through the website, outbound calling, local media, or a combination of all.

AIR-RELIEF VALVES ON SEWERAGE FORCE-MAINS DISCHARGE
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If the discharge point is the result of a faulty or broken air-relief valve, contact CSC Dispatch. The Route Services Section of the Operations Division assists in the maintenance and repair of these valves. Efforts should be used for:

- **Correction/Containment**
- **Contact**
- **Cleanup**

as described above.

SEWER PUMPING STATION DISCHARGE
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In the event the sewerage discharge point is from a MWS sewer pumping station, contact the Control Room at Omohundro Water Plant (862-4978) or Direct Talk #200.

### **SSO OR CSO REGULATOR MANHOLE DISCHARGE**

System Services Division maintains CSS Regulators and in the event of a system failure should be handled as a collection system stoppage. Electronics at all facilities are maintained by Operations. If you are at a CSS Regulator and were not dispatched by Operations, please notify them of your presence to clarify any electronic alarms they may receive for this site. This may be accomplished through Direct Talk # 200.

### **PRIVATE SYSTEM DISCHARGE**

If the sewage discharge is located on a private system, make every effort to bring it to the owner's attention. Inform responsible party of the public health and environmental concerns and that Metro Stormwater - NPDES Section and Metro Public Health will be notified of discharge. If this discharge is causing risk to public health and safety and the owner cannot be contacted, begin effort to correct the situation, notify the Metro agencies as indicated above and notify Metro Claims for cost recovery. Contact numbers may be accessed through the Weekly On-call listing through Dispatch.



METRO WATER SERVICES  
SYSTEM SERVICES DIVISION  
1616 THIRD AVE. NORTH  
NASHVILLE, TN 37208  
(615) 862-4600

**Sewer Overflow Notice**

This notice is to advise you that Metro Water Service has responded to a sewer overflow in your area. MWS response to overflows is coordinated with Local and State Watershed Management Agencies. Please avoid the affected area and note the following:

Date: \_\_\_\_\_

Address or general location of overflow:  
\_\_\_\_\_

- The overflow was/is:
- corrected
  - in process of being corrected – you will receive further information
  - continuing and will be corrected asap. You will receive further information.

- The overflow was/is:
- isolated to the area immediately around the manhole
  - extended to a area beyond the manhole area but did not reach any stormwater system
  - extended to an area beyond the manhole and did enter stormwater system

- Clean-up of the overflow is:
- complete
  - in process – you will receive further information.

- The overflow was caused by:
- grit/debris
  - grease buildup
  - roots
  - other \_\_\_\_\_

OTHER COMMENTS  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If you need further assistance, please call Metro Water Services at: 862-4600 Option 1 for English, Option 3 for Emergency Service and reference the following Service Request/Work Order No.

SERVICE REQUEST/WORK ORDER NO:  
\_\_\_\_\_

## **Appendix C**

**Sewer Overflow Calculation Spreadsheet** – this information is available electronically and is used by personnel reporting overflow information to TDEC on the Overflow Notification Forms and on the Monthly Overflow Report. It calculates the volume in gallons which is then reported in million gallons.



### Overflow Volume Calculation Spreadsheet

(Simply enter in the data according to the shape of the overflow. The table will calculate the volume for the Overflow Notification Form)

Shape of Overflow	Diameter (ft)	Length (ft)	Width (FT)	Depth (in)	Area (sf)	Volume (cf)	Gallons (gal)
Square or retangular	n/a				0.00	0.00	0.00
circular		n/a	n/a		0.00	0.00	0.00

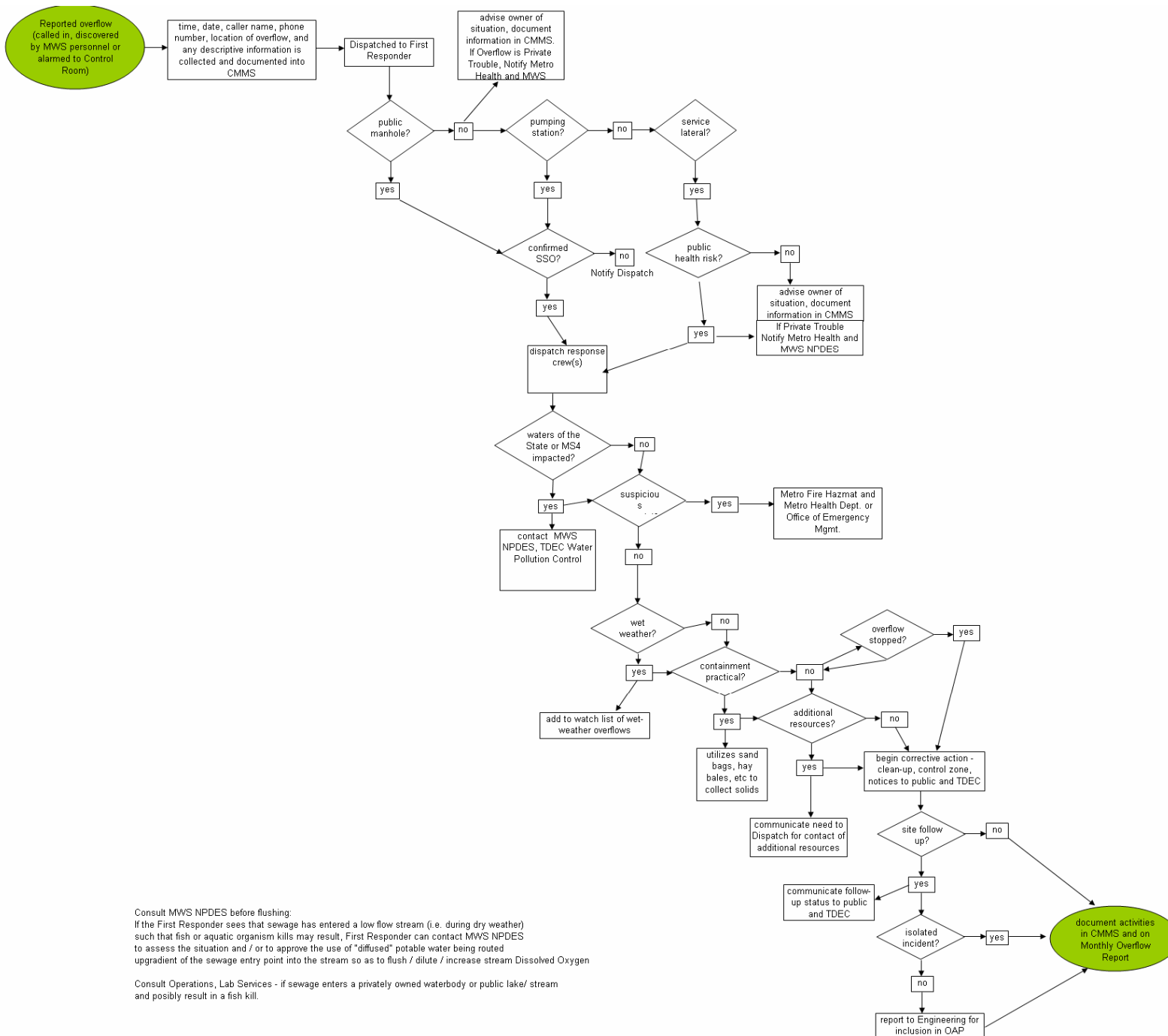
**Appendix D: On-call List – this list is generated weekly and represents emergency respondent personnel by shift, day and time. This information is used by Dispatch and the Control Room to contact personnel outside normal shift schedules. This list is distributed electronically to MWS personnel and Metro Emergency Management (OEM) for use in the event of emergencies including sewer overflows. (see next page) –**

				Week of:	May 25, 2009	
		Name	Direct Talk	Cell Phone	Pager	Home Phone
<b>Repair</b>						
<b>1st Contact (On-call)</b>						
<b>Supervisor</b>	James Caruthers	271	566-3944			589-1813
<b>Leader</b>	Cecil Trotter	337	566-4011	518-9300		941-8890
<b>Backhoe</b>	Greg Elmore	470	931-320-4648	518-9300		533-2089
<b>Crew</b>	Joshua Davis		589-9811	518-9300		
<b>Crew</b>	Jene Frydenlund		478-2026	518-9300		
<b>Crew</b>	Kevin Blackwell		300-0673	518-9300		746-6323
<b>2nd Contact (Back-up)</b>						
<b>Supervisor</b>	Greg Nalls	113	456-9210			746-4508
<b>Leader</b>	Antonio McKissack	92	456-4949	518-9898		891-3107
<b>Backhoe</b>	Kelby Walker	176	507-9591	518-9898		860-4679
<b>Crew</b>	David Brown	77	957-3200	518-9898		
<b>Crew</b>	Wilford Buchanan	295	569-8680	518-9898		228-4331
<b>Crew</b>	Thomas Bush	375	429-8713	518-9898		226-8331
<b>Sewer</b>						
<b>1st Contact (On-call)</b>						
<b>Sewer Crew (Cleaning)</b>						
<b>Leader</b>	Steve Schuller	331	566-4005	518-9888		333-0440
<b>Crew</b>	Jody Smiley	459	566-0802	518-9888		
<b>2nd Contact (Back-up)</b>						
<b>Sewer Crew (Cleaning)</b>						
<b>Leader</b>	Kwaku Boachie	498	405-2402	518-8888		361-1266
<b>Crew</b>	Keith Alexander	329	569-6118	518-8888		
<b>Fire Hydrant &amp; Valve</b>						
<b>Leader</b>	Stanley Peacher	509	931-980-2729	363-5240		
<b>Crew</b>	Robert Proctor		557-3929	363-1539		
<b>CTTV (Televising) Crew</b>						
	Carlton Nelson		582-9864	929-0232		
<b>Regulator Crew:</b>						
<b>Primary</b>	Alvin Humphrey	281	566-3954	518-8108		865-9555
<b>Backup</b>	Darryl McKibbens	517	947-8304	518-8355		834-7382
<b>Plumbers</b>						
<b>Leader</b>	Donnell Carter	14	364-8581	363-1982		367-4320
<b>Crew</b>	Larry Martin	320	566-3993	363-1987		287-9265
<b>Large Meter Crew</b>						
<b>Leader</b>	David Denham	426	207-9743			385-1869
<b>Crew</b>	Mike Lamb	338	566-4012			268-3862
<b>Special Assistance AS Needed by Utility Maintenance Supervisors:</b>						
<b>On Call</b>	Robby Stokely	333	566-4007			554-6875
<b>Weekend Repair Fri-Sun 6:00am -8:00 pm</b>						
<b>Leader</b>	James Caruthers	270	566-3944			258-3764
<b>Sun-Wed 10:00 pm-8:30am</b>						
	Billy Raines	114	456-9212			356-7780

<b>Engineering Inspections</b>					
<b>Contract Work</b>	Jeff Duncan	446	335-1622		851-5972
<b>Lay &amp; Deed Project</b>	Larry D. "Skeeter" Barnes	256	566-3929		746-8312
<b>Metro Claims (Legal)</b>					
<b>Mon 7:00am-Mon 7:00am</b>	<b>Rachael Nolan</b>			518-8798	
<b>Stores/Warehouse:</b>	<b>Danny Jackson</b>	<b>356</b>	566-4778		646-8799
<b>1/28-2/11</b>					
<b>UTILIQUEST (Utility Locations)</b>	Richard Pickard		476-5018		
<b>Storm Water Issues</b>					
<b>Storm Water Maintenance</b>	Ray Bass	447	335-1658		593-8627
<b>Back-Up</b>	Steve Shelton	417	566-8161		586-6643
<b>Water Quality</b>	Dale Binder	409	566-4263		615-459-1072
<b>Back-Up</b>	Michael Hunt	81	533-0324		
<b>Safety</b>	Joe Estes	137	566-2143		333-2182
<b>Lab:</b>					
<b>On-Call</b>	Marty Mast	194	566-3866	518-8391	360-7217
<b>Back up</b>	Butch Bryant	193	566-3865		292-6215
<b>Health Dept. Food SVCS</b>					
<b>Sewer Blockage or water cut-off</b>	Steve Crosier		340-2762		
<b>Environmental Sanitation Sewer On Ground In Private Property Septic Tanks</b>	Wayne Denton Spencer Hissam		340-5644 340-0438		
<b>Containment Crew For Sewer Spills</b>					
<b>Leader</b>	Wilbur Scales	330	569-8656		
<b>Back-Up</b>	Wendell Turner	136	474-7131		
<b>Fleet Maintenance:</b>					
<b>OFM</b>	Dispatch	Heavy 880-1992	Light 862-5101		
<b>Mon.-Sun Emg. Generator Equip. Fueling Emg. Pumping</b>	Danny McCullough	362	566-4910	518-8263	213-0926
<b>Mon.-Thrus. Emg. Generator Equip. Fueling Emg. Pumping</b>	Willie Hargett	361	566-4909	518-8292	
<b>Fri., Sat. &amp; Sun.</b>	Willie Hargett	361	566-4909	518-8292	
	Clyde Smith	64	456-3309	664-0269	474-6954
<b>Public Information Officer</b>	Sonia Harvat	80	533-3607		862-4494

<b>Drug Testing (Designated Authorities)</b>	Ilene Cowden	190	566-3852		
	Ann Dooley	188	566-3973		
	Joe Estes	137	566-2143	664-0165	
	David Tucker	135	566-2139		
<b>State of Tennessee</b>	Thomas Killion				824-4460
<b>Nashville Field Office</b>	Erich Webber				885-2121
<b>Division of Water Supply</b>	Sherwin Smith				883-3472
<b>TDOT Repair Of Water And Sewer Lines In State Road</b>	Frank Sealand		350-4437		335-9162
<b>Supervisor Of SSD Contacts</b>	<b>System Services Contacts</b>				
Robby Ervin	Greg Nalls	113	456-9210		746-4508
Kevin McCullough	Anthony Waggoner	280	566-3953		885-3875
Kevin McCullough	James Bradley	270	566-3943		734-0682
Hal Balthrop	Robby Ervin	424	207-1020		287-9018
Mr. Potter	Hal Balthrop	107	456-9204		865-6686
Hal Balthrop	Ronnie Russell	279	566-3952		868-4729
Hal Balthrop	Jim Blunkall	268	566-3941		773-2320
Hal Balthrop	Jim Paulus	171	566-3836		1-615-446-9702
Hal Balthrop	Lyn Fontana	187	456-9568		297-3769
Hal Balthrop	Marcus Knight	455	238-4482		501-0683
Jim Blunkall	Eddie Waynick	341	566-4015		299-5752
Jim Blunkall	James Caruthers	271	566-3944		258-3764
Jim Blunkall	Billy Raines	114	456-9212		356-7780
Hal Balthrop	Kevin McCullough	516	947-8066		
Jay Tant	Water System	255	615-335-9950		
Vic Robel	Water Sys Technical	165	566-3829		
	Water System				
Tommy Dodson	Technical Support	272	566-3945		
	<b>Garney Emergency Response Contact Information</b>				
<b>Name</b>	<b>Title</b>	<b>Cell Phone</b>	<b>Home Phone</b>		
Steve Ford	Construction Manager	615-714-6254	615-595-5900		
Gary Goff	Project Manager	615-394-2996	use cell #		
Jeff Seal	Project Manager	770-780-0840	use cell #		
Youral Winegeart	Project Manager	615-533-6266	615-441-6149		
Brian Whitnel	Project Manager	615-207-2773	use cell #		
John Myhr	Project Manager	615-642-7173	615-376-8193		
Kevin Griffin	Superintendent	615-642-9733	615-799-5643		
Jeff Wallen	Superintendent	865-389-2779	use cell #		

**Appendix E: Spill and Overflow Response Plan Flowchart (next page)**



Consult MWS NPDES before flushing:  
If the First Responder sees that sewage has entered a low flow stream (i.e. during dry weather) such that fish or aquatic organism kills may result, First Responder can contact MWS NPDES to assess the situation and / or to approve the use of "diffused" potable water being routed upgradient of the sewage entry point into the stream so as to flush / dilute / increase stream Dissolved Oxygen

Consult Operations, Lab Services - if sewage enters a privately owned waterbody or public lake/ stream and possibly result in a fish kill.

**Appendix F: Standard Operating Procedures for SSO or CSO (reconfirm sections numbers below)**

<b>Action</b>	<b>Responsibilities</b>	<b>References</b>
A First Responder will be dispatched by MWS Dispatch to investigate the overflow.	MWS Dispatcher	SORP Sections 4.2 & 4.3.1
Confirm the overflow is an SSO or CSO.	First Responder	SORP Sections 4.2 & 4.3.2
Complete the Sewer Overflow Notification Report to TDEC within 24 hours after confirmation of SSO or CSO.	SSD Sewer Maintenance Supervisor or designee	SORP Section 4.2
If the SSO or CSO involves a force main, contact Route Services to evaluate turning off the station.	First Responder, MWS Dispatcher, Route Services	SORP Sections 3.5 & 4.1
As needed, contain any sanitary sewer overflow using defined methodology/equipment.	First Responder/Sewer Maintenance Crew	SORP Sections 4.3.9 & 4.3.10
Block any nearby storm grates or catch basins with sandbags or berms (if necessary)	First Responder/Sewer Maintenance Crew	SORP Section 4.3.9
Install control zone and standard signage around impacted area.	First Responder/Sewer Maintenance Crew	SORP Sections 4.3.6 & 4.4
Contact Environmental Compliance if a suspicious substance is found.	First Responder/Sewer Maintenance Crew	SORP Section 4.3.3
Request additional assistance, if necessary, from MWS Dispatch or radio crews directly to assist with SSO or CSO (i.e., repair broken pipe, pump station outage, etc.)	First Responder/Sewer Maintenance Crew	SORP Sections 4.2
Notify SSD Supervisor/MWS Dispatch of situation status.	First Responder/Sewer Maintenance Crew	SORP Section 4.3.7
Initiate appropriate repairs, cleaning, vacuuming, etc., as required.	First Responder/Sewer Maintenance Crew	SORP Section 4.3.11
Place SSO or CSO door hanger on residences and/or facilities where inhabitants could be affected by the SSO or CSO. If door hangers cannot be used, place a public notice posting(s) in an area and/or Outbound Calling notifying the public of the SSO or CSO occurrence.	First Responder/Sewer Maintenance Crew	SORP Section 4.4 & Appendix B
Thoroughly clean site using appropriate manual practices such as rakes, brooms, shovels, etc. and, if needed, mechanical practices such as excavating equipment, vacuums, flushers, aerators, etc.	First Responder/Sewer Maintenance Crew	SORP Section 4.3.12



<p>Disinfect site by applying lime to the ground within the impacted area and apply deodorizing agents when needed. The use of chlorine must be approved by SSD Supervisor. Special care should be taken in or around waterways.</p>	<p>First Responder/Sewer Maintenance Crew</p>	<p>SORP Section 4.3.12</p>
<p>Determine volume of SSO or CSO and complete MWS Sanitary Sewer Overflow Notification Form and forward to SSD Supervisor or their designee.</p>	<p>First Responder/Sewer Maintenance Crew</p>	<p>SORP Section 4.6 &amp; Appendix C</p>
<p>Forward the Sanitary Sewer Overflow Report to the SSD Supervisor as soon as possible or within 24 hours of event for submittal to TDEC Notification Group (which includes TDEC).</p>	<p>First Responder/Sewer Maintenance Crew</p>	<p>SORP Section 4.6</p>
<p>If the SSO or CSO reaches a stream or body of water:</p> <ol style="list-style-type: none"> <li>1. Where practical or necessary, a public notice will be posted in the immediate area of the SSO or CSO. Place an SSO or CSO sign(s) along the creek or at location(s) where users of the body of water can be easily notified of the SSO or CSO occurrence as dictated by downstream condition.</li> <li>2. Any necessary monitoring will be performed with results evaluated to identify necessary remedial actions.</li> <li>3. Omitted – Check to be sure that it is reconciled with body of document or If deemed necessary, contact Public Information Officer and Senior Management for initiation of enhanced public notification plan of SSO or CSO.</li> <li>4. Follow procedures as described in the SORP.</li> </ol>	<p>As assigned by the First Responder, other SSD staff, PIO, and/or MWS NPDES</p> <p>Responsible Basin Owner</p>	<p>SORP Sections 4.3.7 &amp; 4.4</p>