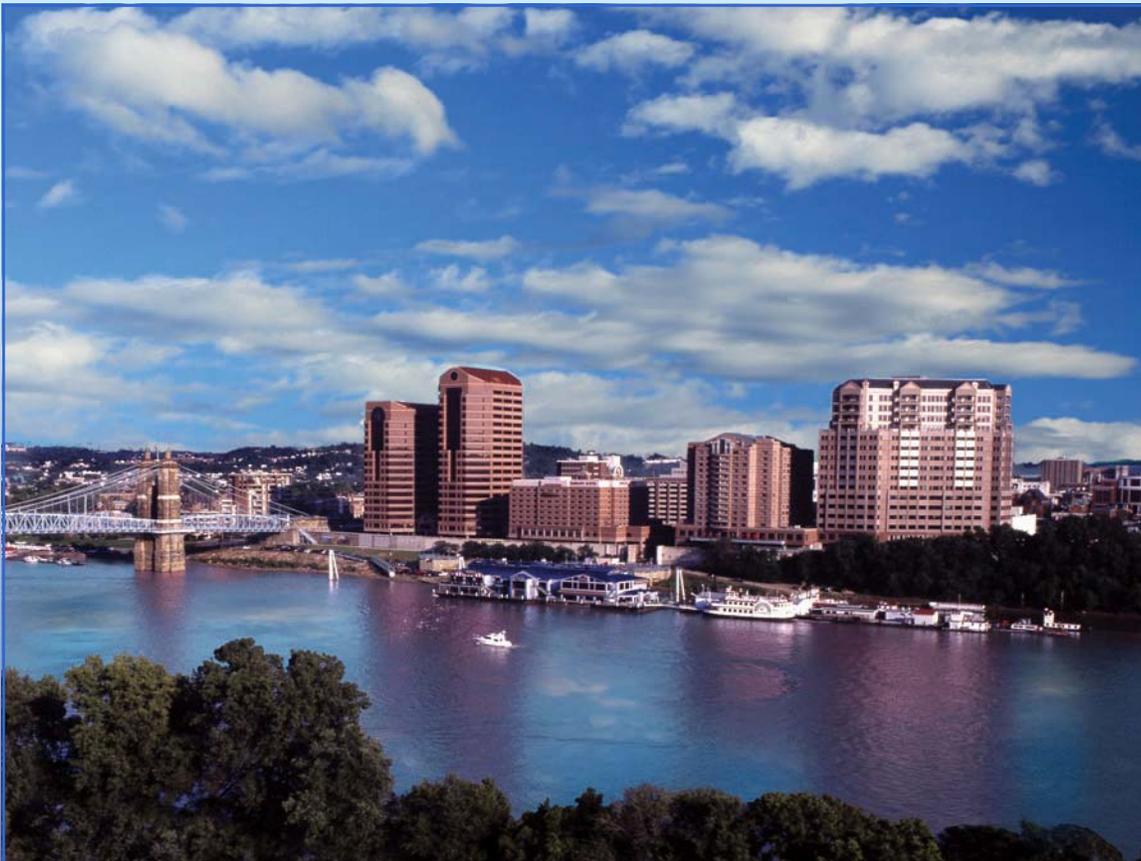


Sewer Overflow Response Plan

Sanitation District No. 1
March 8, 2008





CERTIFICATION

Sewer Overflow Response Plan (SORP)
Consent Decree Case No. 2:05-cv-00199-WOB

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.



Jeffery A. Eger
General Manager

10/5/07

Date

COMMONWEALTH OF KENTUCKY

)ss.

COUNTY OF Kenton

The foregoing instrument was acknowledged before me this 5 day of October, 2007 by Jeffery A. Eger, General Manager of Sanitation District No. 1.



NOTARY PUBLIC

State@Large County, Kentucky

My commission expires: May 9, 2010

SANITARY SEWER OVERFLOW RESPONSE PLAN

March 8, 2008



Sanitation District No. 1
1045 Eaton Drive
Ft. Wright, KY 41017

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LIST OF ACRONYMS AND ABBREVIATIONS

24/7	24 Hours a Day, 7 Days a Week
Cabinet	Kentucky Environmental and Public Protection Cabinet
CIP	Capital Improvement Projects
CMMS	Computerized Maintenance Management System
CMOM	Capacity Management Operation and Maintenance
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
District	Sanitation District No. 1
EIAT	Environmental Impact Assessment Team
FOG	Fats, Oils and Grease
GBA	George Butler Associates (information management system)
GIS	Geographic Information Systems
I/I	Inflow and Infiltration
KAR	Kentucky Administrative Regulations
KDOW	Kentucky Division of Water
KPDES	Kentucky Pollutant Discharge Elimination System
KRS	Kentucky Revised Statutes
LTCP	Long-Term Control Plan
MGD	Million Gallons per Day
NKAPC	Northern Kentucky Area Planning Commission
NMC	Nine Minimum Controls
O&M	Operations & Maintenance
PVA	Property Value Administration
SCADA	Supervisory Control and Data Acquisition
SORP	Sewer Overflow Response Plan
SRP	System Release Point
SSO	Sanitary Sewer Overflow
SSOP	Sanitary Sewer Overflow Plan
SSS	Sanitary Sewer System

SWP3	Storm Water Pollution Prevention Plan
US EPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
WWTP	Wastewater Treatment Plant

DEFINITIONS

Capacity, Management, Operations, and Maintenance (CMOM): A flexible program of accepted industry practices to properly manage, operate and maintain sanitary wastewater collection and transmission systems, investigate capacity-constrained areas of these systems and respond to sanitary sewer overflow events.

Combined Sewer Overflow (CSO): Any wet weather discharge from any outfall currently identified, or identified in the future, as a combined sewer overflow, or CSO, in any District Kentucky Pollutant Discharge Elimination System (KPDES) permit.

Combined Sewer Overflow Outfall or “CSO outfall”: The outfalls from which CSOs are discharged to waters of the United States.

Combined Sewer System (CSS): The portion of the District’s sewer system designed to convey municipal sewage (domestic, commercial and industrial wastewaters) and storm water runoff through a single-pipe system to the District’s Dry Creek Wastewater Treatment Plant or combined sewer overflow outfalls.

Sanitary Sewer Overflow (SSO): Any discharge to waters of the United States from the District’s sewer system through point sources not specified in any KPDES permit, as well as any release of wastewater from the District’s sewer system to public or private property that does not reach waters of the United States, such as a release to a land surface or structure. However, releases or malfunctions in a building lateral or other piping or conveyance system that is not owned or operationally controlled by the District are not considered SSOs.

Separate Sewer System (SSS): The portions of the District’s sewer system designed to only convey municipal sewage (domestic, commercial and industrial wastewaters). This portion is not part of the District’s combined sewer system. The SSS does not include any sewer systems not owned by the District.

Sewer System: The wastewater collection, retention and transmission system owned or operated by the District designed to collect and convey municipal sewage (domestic, commercial and industrial) to the District’s wastewater treatment plants (WWTPs) or CSOs. The sewer system is comprised of both the SSS and CSS.

Unpermitted Discharge: Any discharge to waters of the United States from the District’s sewer system or WWTPs through a point source not specified in any KPDES permit or from the District’s WWTPs, which constitutes a prohibited bypass (as defined in 401 KAR 5:065, Section 1(13)(c)).

SECTION 1: INTRODUCTION

1.1 Objectives

Sanitation District No. 1's (District) objectives are to provide better customer service and environmental stewardship through this Sewer Overflow Response Plan (SORP). This plan is an operational document. Although the plan emphasizes emergency response activities to contain, mitigate and clean up residuals from overflows, it also addresses preventive measures taken as part of the routine maintenance procedures conducted by the District. The long-range objective of this plan is to provide a framework whereby proper documentation of each event will help the District establish permanent overflow abatement programs that will be incorporated in the watershed planning documents.

1.2 Purpose

The SORP identifies measures to protect public health and the environment by providing a standardized course of action to follow in the event of unpermitted discharges from the District's sewer system. This includes any separate sanitary sewer overflow (SSO) or any other discharge to waters of the United States that is not permitted by a Kentucky Pollutant Discharge Elimination System (KPDES) permit.

In addition, this SORP outlines the District's long-term approach for abatement of SSOs, including identification of overflows, elimination of SSO causes and proactive prevention of overflows from the system.

This plan addresses mechanisms to:

1. Identify and characterize sewer overflows as:
 - a) Dry weather SSOs – result of line blockage by roots, grease or other obstructions,
 - b) Wet weather SSOs – identified structures, caused by such things as deteriorated infrastructure, capacity issues or inflow and infiltration (I/I),
 - c) Dry weather combined sewer overflows (CSOs) – result of line blockage,
 - d) Plant bypasses – wastewater treatment plants (WWTP), pump stations or lift stations – result of wet weather capacity issues or electrical/mechanical failure or
 - e) System release points (SRPs) – any newly discovered unauthorized overflow not yet characterized.
2. Provide immediate response to investigate and mitigate the overflow event, minimizing the effect on public health and the environment.
3. Provide immediate notification to all affected, including the public, health officials, the Kentucky Division of Water (KDOW) and others.



4. Provide documentation such as frequency, quantities, stream identity, environmental impact, proper assignment to appropriate watershed for prioritization and a host of additional information.
5. Ensure that District personnel are trained to implement the plan.

SECTION 2: DISTRICT SYSTEMS AND RESOURCES

When the District was established in 1946, it was responsible for wastewater treatment and operation and maintenance (O&M) of 124 miles of main interceptor lines. As a result of increasing environmental regulations, the District's enabling legislation, Kentucky Revised Statutes (KRS) 220, was revised. In 1995, 28 cities in Northern Kentucky turned over ownership of their sanitary sewer systems (SSS) to the District.

The District is now responsible for the collection and treatment of Northern Kentucky's wastewater, serving 33 communities in Boone, Campbell and Kenton counties.

2.1 District's Collection, Treatment and Flood Pumping Systems

The sewer system covers approximately 200 square miles and serves approximately 90,000 customer accounts. The District's collection and treatment systems are composed of approximately:

- 1,600 miles of sewer lines
- 47,000 manholes
- 3,600 catch basins in the combined sewer system (CSS)
- 129 pump stations – 29 with bypasses
- 2 regional WWTPs
- 4 small WWTPs
- 15 flood pump stations

2.1.1 Collection System

The District's sewer system conveys wastewater from private laterals connected to homes, businesses and industries through a series of gravity lines, pumped systems and interceptors to a WWTP. The District's system consists of both combined and separate sewer systems.

The combined sewers are located primarily in the river cities. The District maintains a database of all CSOs (Appendix A), which is updated continually. In addition, the District has photos of all CSO locations and diversions on file. Currently, the District has 69 CSO locations, which are permitted by KDOW through the District's KPDES permit KY0021466. The District has also identified an additional 27 locations that need to be permitted, which KDOW has requested be included in the next Dry Creek WWTP

KPDES permit in 2007. That permit application has been submitted and is awaiting approval by KDOW.

The separate system, which includes 129 pump stations, is comprised of both gravity lines and force mains. In accordance with the Consent Decree, the District plans to eliminate 29 of these pump stations that were designed and built with constructed bypasses.

2.1.2 Treatment System

The District owns and maintains the award-winning Dry Creek WWTP. Dry Creek is a regional WWTP that began operation in 1979. It treats an average of 36 million gallons per day (mgd) and then discharges into the Ohio River under its KPDES permit. The Dry Creek WWTP utilizes both primary and secondary treatment processes and utilizes an activated sludge process to ensure adequate protection of our water resources.

The Dry Creek WWTP receives flows from both the combined and separate sewer systems. The plant's permitted design flow is 46.5 mgd, but during wet weather events the flows from the combined system exceed this capacity. In accordance with the Dry Creek KPDES permit KY0021466, the plant blends flows exceeding 55.5 mgd. When blending, all flows receive primary treatment at the plant, but to protect the plant's biological secondary treatment process, flows beyond 55.5 mgd bypass secondary treatment and are recombined prior to the disinfection process. All blended flows are disinfected with liquid chlorine and dechlorinated prior to discharge.

The Eastern Regional WWTP began accepting flow on September 24, 2007 after nearly three years of construction. It was constructed to eliminate recurring SSOs due to deteriorated infrastructure and replace and receive the combined flows of the existing Alexandria, Southern Campbell County Industrial Park and Pond Creek treatment plants. Beyond eliminating these package plants, it will also accommodate future growth in Campbell County.

In addition to Dry Creek and Eastern Regional WWTPs, the District also maintains and operates four small treatment plants (Table 1).

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Table 1: Applicable KPDES Permit Numbers:

Wastewater Treatment Plant	KPDES Number	Date Issued	Date Expires	Size (mgd)
Dry Creek	KY0021466	8/01/2002	7/31/2007	46.5
Eastern Regional	KY0105031	7/1/2004	4/30/2008	4.0
Rivershore Farms	KY0094072	8/01/2002	7/31/2007	0.060
Verona Commons Subdivision	KY0093025	7/01/2002	6/30/2007	0.030
Ethans Glen	KY0050466	8/01/2002	7/31/2007	0.015
Charles H. Kelly Elementary School	KY0080691	8/01/2002	7/31/2007	0.015

2.1.3 Flood Pump Stations

The District operates and maintains a series of 15 U.S. Army Corps of Engineers' flood pump stations located along the levee system on the Ohio and Licking rivers. These are areas served by CSSs, where high river levels result in intrusion into the combined system and widespread flooding and basement backups. As stated in the District's Consent Decree, during elevated river levels the District institutes operating procedures that are compliant with the requirements of the U.S. Army Corps of Engineers' Ohio River Flood Protection System Pumping Operations Manual, dated 1954 and revised 1988. Flood stations are activated at different Ohio River stage levels (Appendix B).

2.2 District Resources

The District employs approximately 220 people committed to addressing overflows and protecting the environment. There are six main areas of operation: Dry Creek O&M, Field Technical Services, Collection Systems, Human Resources & Administration, Engineering and Water Resource Management. The District's organizational charts are attached as Appendix C. The following is a description of the roles and responsibilities of the departments involved in overflow response.

2.2.1 Resources for Inquiries and Dispatching Work

The District receives notification and inquiries regarding overflows primarily via calls from the public, website trouble call forms, field crews, inspectors and remote sensing systems. During regular business hours (Monday through Friday from 8:00 am to 4:30 pm), the account services department handles public inquiries. After business hours and on weekends, these calls are forwarded directly to Dry Creek WWTP operators. Similarly, overflow reports from field crews and inspectors are reported to Dry Creek operators after hours.

The District's dispatch responsibilities are shared between the collection systems' dispatch personnel and Dry Creek WWTP operators. During regular business hours, dispatch is handled by the collection systems' dispatch personnel. After hours and on weekends, Dry Creek operators perform dispatch duties. Dry Creek operators are also

responsible for remote sensing of District infrastructure and are available 24 hours a day, 7 days a week (24/7).

There are approximately nine account services staff to receive calls from the public, one collection systems' dispatch personnel, and one person per shift answering phones at Dry Creek 24/7.

2.2.2 Resources to Respond to Overflows in the Collection System

The collection systems department is the District's first line of response to SSO events. It is comprised of dispatch personnel, trouble call investigators and three field crews. There are approximately 28 people in the department. On-call personnel are pulled from this group for after-hours investigation and response. The trouble call investigators serve as the District's first responders and are on-call 24/7. Both the trouble call investigators and the crews are trained annually in assessment and overflow response practices. See Appendix D for a list of the District's on-call staff.

The collection systems department also has unlimited access to the safety department to address any acute risks to health or safety, such as hazardous materials. See Appendix E for a list of the equipment and resources at the collection systems department's disposal.

2.2.3 Resources to Respond to Overflows at Pump Stations and Treatment Plants

The District owns and operates 129 collection systems pump stations, 15 flood pump stations, two regional WWTPs and four small WWTPs. The goal of the District is to remotely monitor all of the pump stations and treatment plant processes with a Supervisory Control and Data Acquisition (SCADA) system, which can minimize the response time to overflows and equipment failures. Dry Creek WWTP personnel monitor this system 24/7 to determine the level of personnel required to respond to these situations. Bypasses have been constructed and are monitored for activity by the SCADA on 29 of the pump stations. When overflows are activated, Dry Creek WWTP personnel will begin the procedure of notification to KDOW and all other appropriate personnel.

2.2.4 Resources for Overflow Source Investigation

The District has a dedicated wet weather crew of 10, responsible for identification of the sources of recurring overflows. This crew is comprised of personnel with expertise in flow monitoring, I/I and CSO inspection. If an unpermitted discharge is found to be recurring, the wet weather crew is responsible for assessment and monitoring to determine the cause of the recurring overflow. The wet weather crew is also responsible for the implementation of the CSO Nine Minimum Controls (NMC) for the permitted CSO discharges. The wet weather crew routinely inspects all CSOs to

ensure proper operation. When an unauthorized dry weather overflow occurs, this crew will initiate the same procedures as described in the response to a SSO.

2.2.5 Resources for Public Notice and Awareness

The District maintains ongoing public education and awareness initiatives regarding the dangers of overflows, as well as event-related overflow notification.

The District's public relations department is responsible for overseeing the ongoing outreach and awareness of the dangers of sewer overflows. The public relations and education teams also provide information to the public through media relations and the internet. Additionally, the District trains and educates account services personnel on how to respond to public inquiries regarding overflows.

The District has recently launched a program to notify Northern Kentucky residents when existing or predicted weather conditions could potentially cause sewer overflows. The overflow advisories are issued by e-mail and recorded on an information hotline.

Onsite overflow notification is provided through the first responders and field crews dispatched to address the overflows.

2.2.6 Resources for Reporting and Documentation

The Dry Creek WWTP operators are responsible for documenting and reporting all overflows. All other personnel responding to overflow events are responsible for gathering all required information and providing it to the Dry Creek operators. The operators ensure that all pertinent information is collected and provided to KDOW within the required timeframes.

2.3 Information and Data Management Resources

2.3.1 Computerized Maintenance Management System

The District utilizes a Computerized Maintenance Management System (CMMS) to efficiently schedule and track its O&M activities. Since 1999, the District has used George Butler Associates' (GBA) software, which is designed for wastewater and storm water infrastructure management. The GBA software manages and tracks all fieldwork, schedules preventive maintenance activities, logs customer complaints and the resulting repair work and maintains detailed data and history on repairs of the District's assets. It is also being used to inventory equipment and supplies. The District continues to refine its utilization of the GBA software by streamlining and standardizing tracking of all information, which will allow for complete and comprehensive tracking of the work being completed on the system. The GBA software is available to District employees in the field, with 13 trucks equipped with GBA-enabled laptops.

2.3.2 Geographic Information Systems

The District works cooperatively with multiple planning and Geographic Information Systems (GIS) agencies in the Northern Kentucky area. LINK-GIS is a consortium of agencies, including the Northern Kentucky Area Planning Commission (NKAPC), Kenton County Fiscal Court, Kenton County Property Value Administration (PVA), Northern Kentucky Water District, Campbell County Fiscal Court and Campbell County PVA. The District also coordinates with the Boone County Planning Commission and the Boone County PVA to ensure seamless data across the three-county area.

These partnerships provide the District with access to an extensive network of spatial data layers including a detailed sewer network, a storm water network with connectivity, watersheds, parcels and buildings, street centerlines with addresses, zoning, soils, land use, aerial photography and numerous other political/governmental coverages.

The District's GIS is linked to the GBA software system, which allows staff to spatially associate structures/pipes with their attributes, repair history and relevant asset management information.

2.3.3 InfoWorks Model

The District utilizes InfoWorks for its hydraulic computer modeling of the sanitary and combined wastewater collection systems. InfoWorks is a fully dynamic modeling program that actively operates within GIS to maximize functionality and efficiency. It is capable of simulating complex hydraulic structures found in today's sewer systems (e.g. weirs, pumps, CSOs, storage tanks, etc.).

Within this model, the District's service area is divided into five drainage areas: Taylorsport, Dry Creek, Bromley, Eastern Regional and Western Regional. The models include all pipes 10 inches and larger in the separate SSS and all pipes 18 inches and larger in the CSS. They also include all pump stations and force mains located along this network. In some cases, the models were extended to pipes of a smaller diameter where local problems or certain hydraulic conditions (e.g. looped sewers, overflows and special diversions) were known to exist. Additionally, the model networks were extended to include locations where local manhole overflows are known to occur so that the model will provide an accurate mass balance on the total conveyed sewage volumes.

These five models are continually undergoing further calibration and verification to improve accuracy in assessing the system's dry and wet weather capacity for identification of capacity limitations and overflows.

The District has also developed a hydraulic model of its new western regional collection and treatment system in Boone County. This model reflects how the sewer system will be structured and operated in 2010 and beyond when existing flow is diverted off of the Dry Creek WWTP system and taken to the new Western Regional WWTP, currently

under design. Once fully calibrated and verified, this model will be used to further address dry and wet weather capacity limitations and overflows in this part of the sewer system.

2.3.4 Flow Monitoring and Rain Gauge Program

The District collects and monitors flow within its collection systems through a series of flow monitors and rain gauges. Multiple program elements maximize the efficiency and accuracy of the District's Flow Monitoring and Rain Gauge Program, which includes the wet weather crew, the United States Geologic Survey (USGS), Continuous Monitoring Network and a comprehensive system characterization project.

The wet weather crew consistently operates and maintains a series of 15 flow monitors and 22 portable rain gauges in key areas within the collection systems to monitor site specific areas of concern. Additionally, rainfall data from the Cincinnati/Northern Kentucky International Airport located within the District's service area in Hebron, Kentucky is also utilized.

In addition to the District's portable rain gauge network, precipitation data is collected from a network of gauges located at USGS stream monitoring stations. This network is operated as a cooperative agreement between the USGS and the District. The network is comprised of 13 continuous monitoring stations which record stream flow, precipitation and water quality data at 15-minute intervals.

In order to supplement existing programs for the further development of detailed collection systems and watershed models, the District has embarked on a comprehensive system characterization project that will take a full year to complete. This project includes the installation of over 240 additional flow monitoring locations along with an additional 50 rain gauge installations. The purpose of this data is to better understand the characteristics of the collection systems primarily as it relates to wet weather events. In addition to the flow monitoring and precipitation gauges, overflow and event-based stream sampling will be conducted to measure the impacts of the overflows on the environment.

All of the aforementioned data will be utilized to better characterize the impact associated with the District's collection systems and to prioritize remedial efforts over the next 20 years.

SECTION 3: OVERFLOW BACKGROUND INFORMATION

Since assuming ownership and maintenance of the collection systems in 1995, the District has made the reduction of overflows a priority. Previously, the systems were owned and maintained by over 30 different municipalities with varying degrees of system maintenance. As a result, the District was initially overwhelmed with hundreds of trouble calls during a wet weather event reporting various problems such as system

blockages, overflows and basement backups. Today the District receives, on average, a dozen trouble calls per wet weather event, the majority of which are determined to be the responsibility of the homeowner or the local municipality and are referred to the appropriate entity to handle.

The District's first priority after the consolidation was to address basement backups. To date, a majority of the basement backups have been addressed and ongoing capital improvement projects (CIPs) will address the last known areas. The District also implemented preventive maintenance and management programs to maximize the capacity of the collection systems and ensure the systems function properly. The District estimates that four CSOs and approximately 30 to 40 SSOs have been addressed, but recognizes that much remains to be accomplished.

3.1 Types of Unpermitted Overflows

According to the United States Environmental Protection Agency (US EPA), SSOs are unpermitted discharges of raw domestic sewage from a separate SSS before the headworks of a wastewater treatment facility. The District classifies unpermitted discharges from the collection systems into several categories based on the characteristics, timing or location of the overflow.

3.1.1 Dry Weather SSOs

Dry Weather SSOs are generally a result of line blockages caused by roots, grease and/or other obstructions. Any SSOs that occur during dry weather are to be reported to KDOW under the guidelines of this document and are considered unauthorized overflows.

3.1.2 Wet Weather SSOs

Wet weather SSOs are generally structures that overflow as a result of capacity issues, I/I, deteriorated infrastructure and/or other issues.



Wet weather SSOs that have been confirmed at recurring locations are categorized as identified SSO points (Appendix F). The District's database of SSO locations is continuously updated as overflows are addressed and/or additional locations are discovered. An annual report is submitted to KDOW identifying all updates.

3.1.3 System Release Points

A SRP is a newly discovered location of a possible unauthorized overflow. These newly discovered locations are classified as SRPs until the overflow can be investigated and appropriately defined. Generally, these are locations where there has been historical

evidence of overflows. District staff will characterize each location as either recurring or a one-time incident as a result of a blockage. A database of SRPs is maintained and updated by the District for tracking and reporting purposes.

All SRPs are to be reported to KDOW under the guidelines of this document and are considered unauthorized overflows.

3.1.4 Dry Weather CSOs

Dry weather CSOs are generally a result of line blockages such as roots, grease and/or other obstructions. Any CSOs that occur during dry weather are to be reported to KDOW under the guidelines of this document and are considered unauthorized overflows.

3.1.5 Pump Station & Plant Bypasses

The District occasionally experiences discharges at WWTPs, pump stations or lift stations. These overflows are generally a result of wet weather capacity issues and/or electrical or mechanical failure.



Lakeview Pump
Station

When the District accepted ownership and maintenance of the wastewater collection systems, it assumed responsibility for several pump stations that were designed with constructed bypasses. Approximately 29 of the District's 129 pump stations have constructed bypasses (Appendix G). These bypasses were specifically identified in the Consent Decree as SSO points that must be eliminated. Options for addressing these overflows include plugging the bypass, elimination of the pump station or other CIPs addressing the associated capacity related issues. Further information on this program can be found in the District's Pump Station Overflow Elimination Plan.

3.2 Long-Term Solutions

The District's Consent Decree is a 20-year agreement with the United States Environmental Protection Agency (US EPA) and the Kentucky Environmental and Public Protection Cabinet (Cabinet)/KDOW to address overflows in Northern Kentucky. The Consent Decree provides a multi-faceted approach for reducing both wet and dry weather overflows in the combined and separate sewer systems that emphasizes long-term, watershed-based solutions to improving water quality.

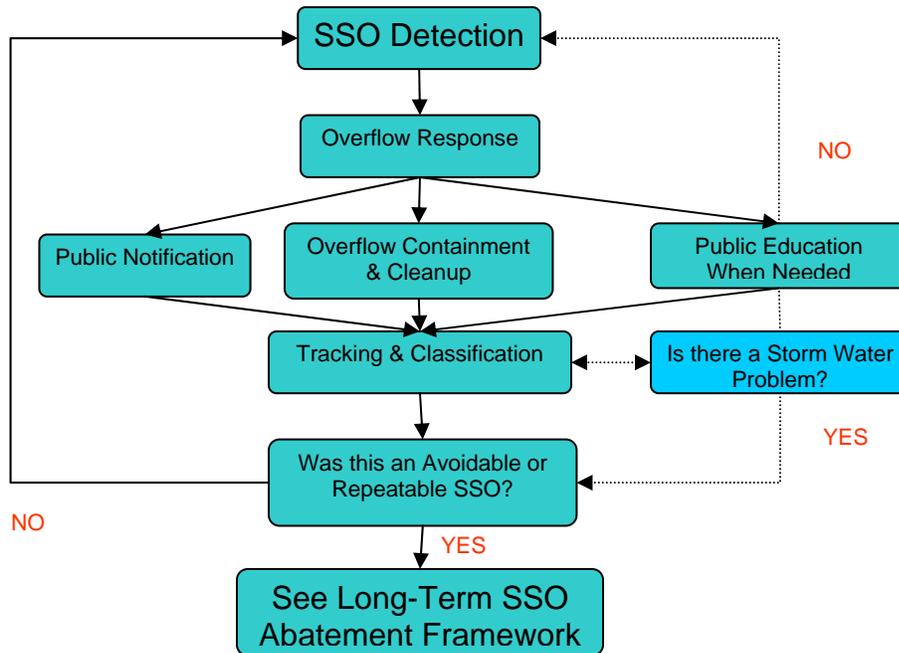
The District is developing a strategy for long-term overflow control to fulfill the requirements of the Consent Decree. This strategy is comprised of overflow identification and prioritization, watershed-based planning and preventive maintenance programs.

SECTION 4: SEWER OVERFLOW RESPONSE PROTOCOL

This section outlines the District’s procedures for providing consistent and effective response to overflows. The application of this protocol ensures adequate protection of public health and mitigation of impact to the environment. In addition, it provides structure and guidance for District staff in their selection and application of appropriate measures to meet the needs of each situation. District personnel will employ their best professional judgment in evaluating each event to determine the most appropriate actions.

Figure 1 outlines the general response procedures and a long-term SSO abatement framework for all known or newly discovered overflows in the District’s collection system. The following pages discuss each step in more detail.

Figure 1: General Response Procedure



4.1 SSO Detection

In an effort to reduce sewer overflows and backups, the District responds to various service requests from more than 90,000 customers (residential, commercial and industrial). Sewer overflows and backups can occur in the collection systems from excessive debris, roots, damaged sewer lines, I/I, grease, hydraulic bottlenecks, sewer capacity issues and a host of other causes.

Overflows are typically detected and reported to the District in one of four ways:

- Detected by the public

- Detected by sewer system remote monitoring alarms
- Detected by District personnel during routine inspection
- Detected during a response to a service call

The District also anticipates that further development and refinement of the InfoWorks model will offer additional assistance in identifying SSO activity and allow for verification of overflow points.

4.1.1 Detected by the Public

The public may report and inquire about potential overflows from the wastewater collection systems by contacting the District via the main phone number, (859) 587-7450, which is answered by account services during regular business hours, and by the Dry Creek WWTP control room after-hours (Table 2). All calls received from the public regarding sewer overflows are logged into the GBA software database as trouble calls, ensuring that both the response and resolution of the event are tracked.

Table 2: Overflow Contact Numbers

Responsible for	Number	Contact Person	Responder
WWTPs and Pump Stations	859-331-6674	Dry Creek Control Room	Plant On-Call Person
Line Breaks, Overflowing Manholes	859-578-7466 (7:30 am – 4:30 pm) 859-331-6674 (4:30 pm – 7:30 am)	Lakeview Dispatch Dry Creek Control Room	Customer Service On-Call person

4.1.2 Detected by Sewer System Remote Monitoring Alarms

Of the District's 129 pump stations, 15 flood pump stations, two regional treatment plants and four small treatment plants, approximately 80% are currently monitored by the SCADA system. All of the pump stations with constructed bypasses are on the SCADA system and monitored by Dry Creek personnel for overflow conditions.

The District plans to expand and improve the current SCADA system over the next five years. The remaining 20% of the above mentioned facilities will be equipped with SCADA.

4.1.3 Detected by District Personnel During Routine Inspection

As part of the District's NMC program, a two-person crew continuously inspects the diversions and CSO outfalls during dry and wet weather. These inspections are documented in the GBA software to guard against dry weather overflows, better understand wet weather overflow activity and assess the control of floatables and solids. The District's wet weather crew also performs routine inspections of the

collection systems while collecting data from flow monitoring locations. They also respond to trouble areas to monitor overflow activity. Any newly discovered overflows are tracked in the GBA software.

4.1.4 Detected During Response to Service Call

The District's customer service crew may also discover an overflow or SRP when responding to a report of a system problem or a customer service request, such as a service connection backup. This occasion is also tracked in the GBA software.

4.2 Overflow Response

Once the District learns of a possible overflow, crews are dispatched to assess the event.

4.2.1 Dispatch

If a trouble call is received from the public during regular business hours, an account services representative will alert dispatch. Dispatch will then notify collection systems customer service personnel to respond. When a call is received by the Dry Creek WWTP operations personnel after regular business hours, the trouble call is documented and the operator will contact the on-call customer service personnel (Appendix D) who will investigate the problem. The responding personnel will notify the Dry Creek WWTP control room of the verified overflow and a System Release Report (Appendix H) is initiated. All pertinent information will be entered into the GBA software in the form of a response to a trouble call. Work orders that are initiated for SSO events will be associated with the System Release Report prior to its placement into the District's completed files.

If the Dry Creek operators detect a possible pump station overflow from the SCADA system during dry weather, the District's electricians are contacted to address the alarm at the pump station. If the SCADA system detects an overflow during wet weather, Dry Creek will monitor the pump station, determine the activity of the overflow and record the event by initiating a System Release Report for proper notification procedures explained further in this document.

If District personnel encounter an overflow through their routine inspections or during a service call, the notification procedures described above are initiated.

4.2.2 Assessing the Overflow

Once District personnel have responded to the event and confirmed an overflow with a System Release Report to Dry Creek, the overflow is quickly assessed to determine the proper response actions.

Assessing Basement Backups

Basement backups are considered unauthorized overflows and are a top priority for mitigation. When the event is a basement backup, the following procedures are utilized:

- Determine if the main sewer is blocked
- Check for cleanout on property
- Determine if the problem is on private property or if it is the District's responsibility
- If determined to be the District's responsibility, take appropriate action as outlined in this document
- Post warning signs if the overflow affects an existing creek/waterway or could create a potential health risk

If the discharge is identified as sewage, then determination of the cause is made. If it is found to be the responsibility of the District, then the appropriate repair and remediation is scheduled. All work associated with this event is documented in the GBA software and linked to the System Release Report tracking it to the specific event.

If the discharge is determined not to be the District's responsibility, then it is reported to the Dry Creek control room and the homeowner is informed that repairs are their responsibility. The employee will advise the homeowner to contact a plumber. Dry Creek will in turn contact the local office of KDOW.

These same procedures are performed for such releases caused by, but not limited to:

- Pump station failures
- Force main failures
- Gravity line failures – such as cave-ins
- Other infrastructure failures

4.2.3 Detection of Hazardous Materials

If chemical or hazardous materials are suspected or detected in a discharge, the employee immediately notifies the appropriate fire department, safety department and/or the Dry Creek laboratory industrial compliance department. They will then follow the direction of the hazardous material response team. A Notification of Spill and Odor Complaint form (Appendix I) will be completed in addition to the System Release Form. Further information about this form can be found in the District's Storm Water Pollution Prevention Plan (SWP3).

4.2.4 Assessing the Overflow Extent and Impact

It is vitally important for the responding personnel to assess the extent and impact of the overflow on the environment. They should use every resource available to minimize the impact. They should document the impact and forward that information to the Dry Creek control room for proper notification to KDOW. The responding personnel must then follow the Overflow Containment & Clean-up Procedures found in 4.4 of this document.

4.3 Storm Water (Illicit Discharge) Coordination

Responding personnel will make extra effort and investigate any other issues that are found during their field reconnaissance work. This includes any evidence of illicit/illegal storm water discharges or flooding issues. Additional data gathering that comes from these investigations and assessments will further the District's characterization of the overflow and aid in efforts to mitigate future impacts to the environment.

4.4 Overflow Containment and Clean-up Procedures

After a preliminary assessment of the overflow is completed, field crews will initiate measures to stop the overflow. Perimeters or control zones with the use of barricades will be established where deemed appropriate to prevent public contact until clean-up efforts are complete. The discharge point of the overflow should be determined and efforts made to minimize the overall impact. In the event of prolonged (more than 24 hours) overflow conditions due to line blockage, portable bypass pumping should be evaluated/conducted around the obstruction.

4.4.1 Overflow Containment

Containing spills is the concept of establishing a physical barrier to control the further dispersion of sewage, thus reducing the impact on downstream areas such as private property and streams. Containment procedures will vary on a case-by-case basis. During intense rain events, containment might not be practical due to high volumes of discharge exceeding the ability of field crews to successfully control it. When these types of events occur, post-event assessment and cleanup will be accomplished to minimize the impact to the area.

4.4.2 Clean-up Procedures

Where practical, the area is thoroughly flushed and cleaned of any sewage or wash-down water. Solids and debris are flushed, swept, raked, picked-up and hauled away for proper disposal. Overflows that can be contained will be pumped back into the sanitary system when feasible. When streams are impacted by an overflow, flushing operations may be utilized in an effort to regain the stability of the stream. Local water utilities are notified when flushing is required. The District is experimenting with the use of portable aerators for heavier impacted overflow locations. The primary purpose of these aerators is to improve stream recovery efforts.

Where appropriate, the overflow site will be disinfected and deodorized in accordance with instructions provided by KDOW's local office and will be properly documented on the System Release Report.

4.4.3 Correcting the Overflow Cause

The respondent will begin the task of mitigating the overflow immediately. The respondent will use every resource available to eliminate the cause of the overflow (e.g. blockages, collapsed pipe, cave-ins or other failures in the sewer system). Once the overflow has been remedied, the respondent will either initiate follow-up work orders as deemed necessary to ensure the overflow no longer occurs or initiate the appropriate work order to continue the study of the overflow for permanent mitigation in our Long-Term Abatement Program.

4.5 Quality Assurance

The Environmental Impact Assessment Team (EIAT) has recently been established to ensure adequate implementation and adherence to this response protocol. They will assist the responding personnel in the assessment of the environmental impact to ensure the impact is properly estimated, minimized and remedied. They will respond either during or at the close of every event. They will also monitor the flow of documents that contain all the information associated with the SSO.

The EIAT's primary responsibilities are to ensure that all procedures are followed consistently among the crews and to evaluate the efficiency of the program. Another major responsibility of this team is to investigate the impact of the event in a more holistic manner by assessing the watershed in more detail. The EIAT and the departments they represent are provided in Appendix J.

4.6 Reporting and Documentation

The District acknowledges that proper data collection and documentation is essential to properly establishing timely and effective methods of reporting the location, volume, cause and impact of all SSOs. These measures are necessary to fulfill the reporting requirements mandated by 401 Kentucky Administrative Regulations (KAR) 5:015 and the District's Consent Decree. This information not only provides the basis for regulatory compliance, but supplies data for tracking and characterizing overflow causes and histories associated with the District's collection and treatment systems.

Once an overflow has been confirmed, the response personnel will immediately notify the Dry Creek WWTP control room operator on duty. The operator will begin the documentation of the event by initiating a System Release Report form (Appendix H).

The response personnel will report to Dry Creek all pertinent information for documentation on the System Release Report. Once the event has been mitigated the respondent will again notify the Dry Creek WWTP operator on duty to complete the remaining information needed to close out the System Release Report. Once the Dry Creek operator has closed out the report, the original is forwarded to the appropriate

department responding to the event. All associated work orders are linked to the event and all information is entered into the GBA software. This information will be used for long-term mitigation efforts.

4.6.1 Field Documentation and Volume Estimation

In addition to confirming and alerting the Dry Creek control room, the responding personnel will immediately conduct a cursory environmental impact assessment. The responder will assess the area affected by the overflow, try to determine the impact to the public and the environment and document the necessary information.

Estimating the quantity of the release is a critical component that not only generates vital information for KDOW, but provides important information for the District's long-term planning efforts in mitigating and addressing overflows. Refer to Appendix K for the Discharge Volume Estimation Guide, which provides the District's methodology for estimating volumes from manholes, as well as rectangular and circular volume estimations.

If overflows occur overnight, the environmental impact assessment will be completed the next day during daylight hours and will be reported to Dry Creek for proper documentation of the event. This circumstance is typical during overflows involving pump stations. The pump station crews will typically perform the assessment for proper documentation.

4.6.2 Regulatory Reporting (Initial Notification)

When the responding personnel confirm an unpermitted overflow, the Dry Creek operator will initiate the System Release Report form. The operator will request all pertinent information about the event. If a direct impact of a stream, water body or the environment is identified, notification of the appropriate KDOW office will be initiated. The intent of this initial notification is to advise KDOW that a release has begun and provide enough information for them to determine if they want to respond and/or offer advice on the release, such as collecting samples.

Initial notification will be provided to KDOW's Florence Regional Office by phone at 859-525-4923 and/or through e-mail. When deemed necessary, KDOW's main office in Frankfort will be notified by phone at 1-800-928-2380.

The information provided in the initial notification includes:

- Type of overflow
- Date and time overflow began
- Date and time overflow stopped
- Location of overflow, including county
- Agency reporting overflow
- Nature of incident
- Cause and duration of overflow

- Action taken
- Quantity (i.e estimated volume of overflow)
- Weather conditions during overflow
- Receiving stream type
- Name of receiving stream

KDOW is again notified when the overflow event has stopped and additional information is provided such as volume estimates, environmental impact assessment and other pertinent information.

In 2006, the District partnered with KDOW to test their new electronic notification method. The District continues to utilize electronic notification but has not yet eliminated any of the current procedures. Once thorough testing and review of this new method of notification has taken place, the District will evaluate the current method and make any appropriate adjustments.

On a weekly basis, the Dry Creek WWTP control room faxes copies of the completed System Release Reports to KDOW's Florence Regional Office.

4.7 Public Notification

The District is committed to protecting public health and ensuring that the public is made aware of the hazards and locations of sewer overflows. The District provides messages to the public to alert them of overflows and to raise the general awareness of the public both at overflow locations (event-based) and through ongoing educational programming (programmatic). The event-based activities focus on minimizing the immediate hazards associated with overflows by limiting access and notifying the surrounding area when an overflow has taken place. The District's programmatic education activities raise awareness of the causes and locations of overflows, possible public health hazards, how to minimize exposure and measures the public can take to help reduce overflows.

4.7.1 Event-Based Notification

As part of the District's overflow response activities, the responders will assess the event, and if feasible, implement measures to limit public contact and alert area residents. When appropriate, notification by phone is made to local fire departments and water utilities. Measures include establishing control zones, posting temporary signage and/or distributing door hangers to area customers. These measures will remain in place until the site has been thoroughly cleaned.

Control zones will be established in areas where there is high potential for public contact with the overflow. This will be determined on a site-by-site basis, but will generally include high volume/traffic areas, residential areas or areas near schools, parks or other public buildings.

If necessary, temporary signage will be placed at overflow locations to alert members of the public of the potential health risks. The signage includes contact information for obtaining additional information and will be used in conjunction with other event-based notifications.

Where appropriate, door hangers will be left for property owners near the overflow area (Appendix L). The door hangers provide the District's contact information, as well as ways to minimize health risks associated with the overflows.

4.7.2 Programmatic Education Activities

In 1995, permanent signs were developed and installed at all of the District's permitted CSO outfalls. These signs warn the public against contact with the overflows and provide the District's contact information. The District continues to repair and replace these signs as necessary and will add signs as additional outfalls are permitted.

The District is making improvements to the Wet Weather Overflow Public Notification Program, which notifies residents when existing or predicted weather conditions could potentially cause sewer overflows. Advisories warn the public when overflows are likely to occur, informs them of the potential health and water quality hazards and provides the appropriate steps for protecting themselves from the hazard. Advisories are currently issued through the District's wet weather hotline and e-mail notification system. The District is currently developing a way for residents to sign-up online to receive the notification.

The District recently enhanced its website to include more information on CSOs and SSOs and how the public can protect themselves from the potential health hazards associated with overflows (Appendix M). Additional topics include the history of overflows, why they occur, how often they occur and what is being done to address them.

The District publishes information in "What's Happening," a county-specific publication that is mailed to every resident in Boone, Campbell and Kenton counties. The District will continue to utilize this publication to provide overflow information to the public.

The District uses bill inserts to enhance outreach and education of customers on various topics throughout the year. Future inserts will include information on overflows such as causes, avoidance measures, overflow prevention and sources for additional information.

Educational and outreach materials developed as part of the District's Grease Control Program target commercial and residential customers in areas where there is evidence of grease-related overflows. Residential door hangers and food service establishment posters, printed in both English and Spanish, have been developed to inform customers of the harmful effects of fats, oils and grease (FOG) in sewer lines and proper grease handling techniques used to minimize the release of FOG into the collection systems.

4.8 Tracking and Classification

Notification is the primary purpose of documenting the event with the System Release Report. It is also invaluable in gathering historical information that will allow the District to determine appropriate courses of action to address recurring overflow locations. The information from the System Release Report, associated work orders and other pertinent data is logged and tracked in the GBA software. The data is linked to the particular structure to generate a historical log of overflow activity.

Based on the overflow event and historical data, an overflow is classified as either a one-time or recurring event and identified as a SSO, CSO, SRP or pump station bypass. The primary goal of documenting overflow events is to classify and assign the overflow a priority. If the overflow is a one-time occurrence, it will be documented as such. If an overflow is classified as recurring, it will be investigated further and appropriate solutions will be determined through the Long-Term Abatement Framework as outlined in Figure 2 (pg. 24).

SECTION 5: REVIEW AND TRAINING

5.1 Review and Update of SORP

Review of the SORP shall include, at a minimum, the following activities:

- A workshop with managers and key personnel to review established response activities and suggestions for new or revised procedures
- Review and update of all contact listings and numbers as necessary
- Review and update of all forms as necessary
- Updates to reflect operational changes
- Updates to address regulatory reviews or concerns
- Updates based on additional KPDES permit requirements

5.2 Training

Annual “refresher” training sessions shall be scheduled with appropriate staff to assist response crews in executing their duties and make them aware of their responsibilities. Appendix N provides a detailed outline of the District’s SORP training procedures. These training sessions will be organized based on the latest SORP, as well as other reference materials. Training sessions shall also incorporate hands-on field demonstrations to ensure the preparedness of all response personnel to all anticipated situations. As this program grows and additional resources are deemed necessary, future budgets will be adjusted for the purpose of obtaining new equipment and personnel to accomplish this endeavor.

SECTION 6: LONG-TERM OVERFLOW ABATEMENT FRAMEWORK

The District believes that overflows are a key indicator of system performance. To ensure adequate system performance, it is necessary to conduct long-term planning and improvement measures to abate SSOs caused by capacity related issues, as well as more acute system blockages.

Successful long-term abatement of SSOs involves three steps: (1) Determine the location of SSOs, particularly chronic SSOs, (2) Identify what measures must be taken to eliminate the causes of the SSO, thereby eliminating the potential for its recurrence, and (3) Implement a proactive program that invests in maintenance, rehabilitation and capacity enhancement as appropriate to eliminate the precursors to future SSOs.

The following strategy and framework outlines the District's approach for prevention and eventual elimination of SSOs.

6.1 Long-Term SSO Abatement Strategy

The District's long-term abatement strategy is a pragmatic approach for addressing and investigating locations of recurring overflows. The three-step approach works to efficiently address and prevent overflows and to eliminate overflows to the maximum extent practicable.

6.1.1 Overflow Prioritization

Based on available data, the District is working to prioritize recurring system overflows. Overflows will be prioritized based on frequency, volume and adjacent land use to ensure that overflows located near sensitive areas or with a high risk of exposure are considered higher priority. The intent is to enable the District to direct resources toward areas that would provide the greatest value in protecting both human and environmental health. The overflow prioritization will be utilized to guide the District's remedial activities, including but not limited to the Pump Station Backup Power Plan, Capacity Management Operation and Maintenance (CMOM), NMCs and the Pump Station Overflow Elimination Plan.

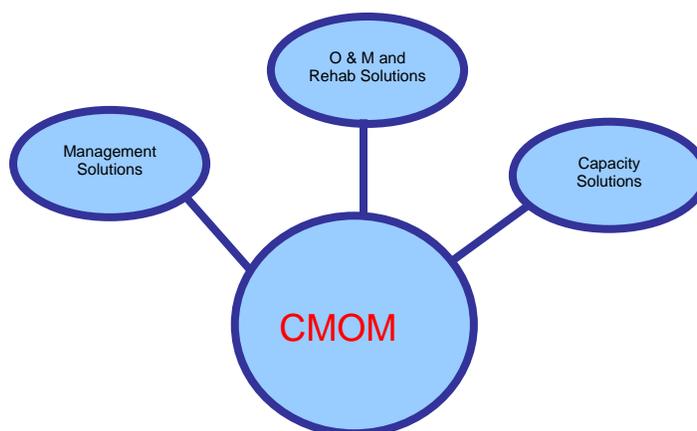
6.1.2 Watershed Planning

As outlined in the proposed Consent Decree, the District is undertaking an innovative watershed-based approach for improving water quality in Northern Kentucky. The intent of the watershed approach is to integrate programmatic requirements into a holistic, results-driven strategy for each basin within the District's service area. This integration will provide efficiencies for the District, as well as garnering greater environmental improvements.

Watershed plans will be developed for the North, East, Central and West study basins. They will include components of a Long-Term Control Plan (LTCP) and a Sanitary Sewer Overflow Plan (SSOP), as well as a holistic plan for improving and protecting water quality within the subbasins. The plans will identify improvement projects to address capacity-related issues such as treatment plants, pump stations and conveyance system improvements, as well as long-range planning to ensure continued system capacity.

6.1.3 Preventive CMOM Activities

CMOM is an essential element of the long-term abatement strategy, which is aimed at ensuring continual function of the collection and transmission systems by focusing on preventive solutions. The framework established by CMOM provides a logical structure for organizing long-term SSO solutions. There are three main types of solutions: capacity solutions, management solutions and operation, maintenance and rehab solutions.



The following overviews provide examples of CMOM solutions that will be considered in the development and implementation of the District's programs.

Capacity Solutions¹

Experience has shown that I/I allowance used in the original design of older sewer systems is significantly below the wet-weather flows these systems experience. Large peak flows are primarily due to the numerous defects in the collection systems caused by system deterioration and illegal connections over the years. In addition to excessive I/I, a sewer system capacity can be taxed by population growth resulting in flows that exceed design flows.

Possible CMOM solutions to capacity issues include capacity assurance planning, master planning and capacity enhancement.

Management Solutions²

Effective management of personnel, equipment, systems, processes and other resources can result in a reduction of the number of SSOs. Collection systems management requires good recordkeeping, planning and the appropriate tools to measure desired performance and ensure regulatory compliance. These tools enable

¹ "Solutions for Sanitary Sewer Overflows" ASCE/EPA Cooperative Agreement CP-828955-01-0

² "Solutions for Sanitary Sewer Overflows" ASCE/EPA Cooperative Agreement CP-828955-01-0

managers to develop a trained and competent workforce capable of operating the collection systems efficiently with the appropriate amount of reinvestment to minimize the occurrences of SSOs.

Recognizing the critical role of resource allocation, the industry has introduced new management strategies, such as asset management. Asset management is a comprehensive framework which, when fully implemented, can lead to optimally operated and efficient collection systems. The CMOM program recommends implementation of asset management systems to preserve and maintain the wastewater collection systems' infrastructure.

Operation, Maintenance & Rehabilitation Solutions³

Maintenance and operation solutions are the most readily available and most extensively used by wastewater agencies to reduce SSOs. An aggressive maintenance program can both mitigate the impact of the overflow and significantly reduce the frequency of occurrences of dry weather SSOs. Operational strategies can be developed and adopted to prepare for and prevent wet weather overflows both in the collection systems and the facilities. Condition assessment is an integral element of an ongoing maintenance program.

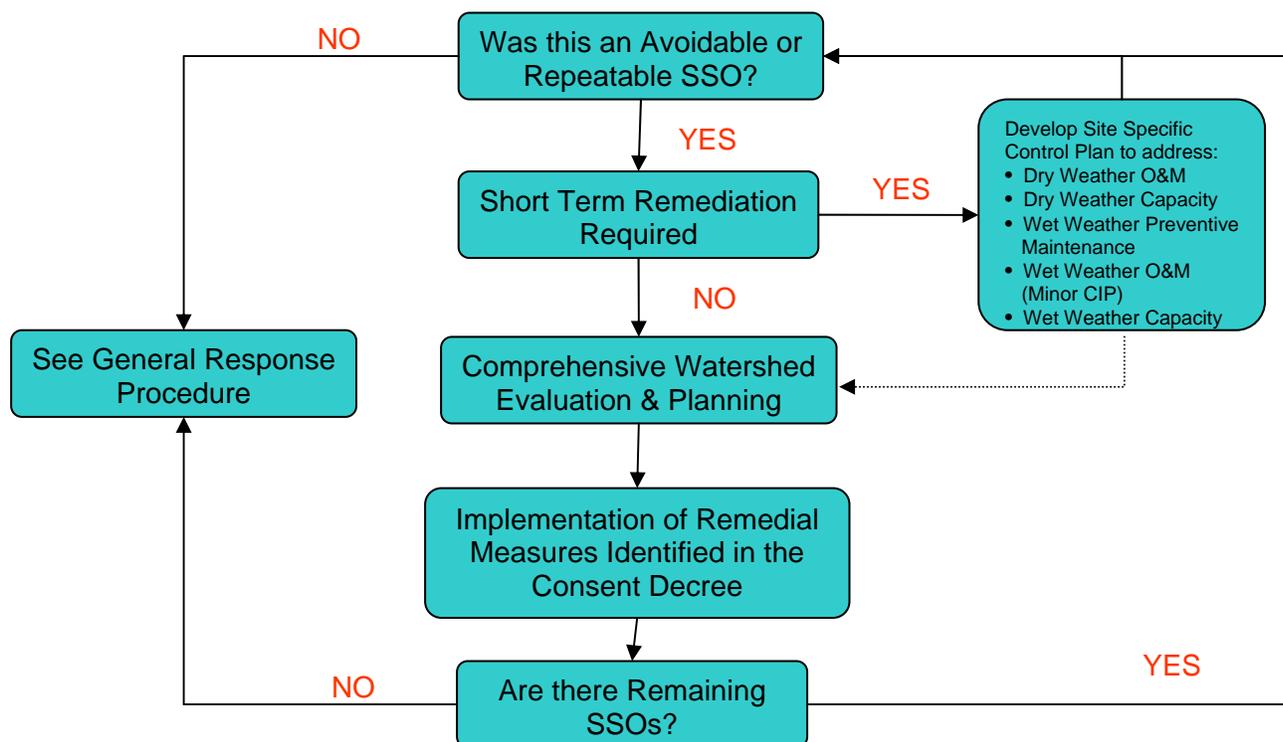
Comprehensive rehabilitation programs can significantly reduce occurrences of both wet weather and dry weather overflows. Specific techniques can be targeted to structural or leakage problems, whether they are in the mainline, manhole or building sewer.

6.2 Long-Term SSO Abatement Framework

Implementation of the District's Long-term Abatement Strategy will make significant strides toward eliminating a majority of the District's recurring SSOs. Figure 2 provides the framework for the District's strategy.

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³ "Solutions for Sanitary Sewer Overflows" ASCE/EPA Cooperative Agreement CP-828955-01-0

Figure 2: Long-Term SSO Abatement Framework

6.2.1 Was this an Avoidable or Recurring SSO?

The District will determine if an overflow event was an unavoidable discharge or a recurring SSO. To be classified as unavoidable, the discharge must meet each of the following criteria:

1. The discharge must be the result of a temporary, exceptional incident that was either:
 - a) Necessary to prevent loss of life, personal injury or severe property damage.
 - b) Beyond the reasonable control of the operator, including:
 - i) exceptional acts of nature,
 - ii) third party actions that could not be reasonably prevented including vandalism,
 - iii) blockages that could not be avoided by reasonable measures and
 - iv) unforeseeable sudden structural, mechanical or electrical failure that could not be avoided by reasonable measures.
2. There must be no feasible alternative to the discharge and
3. The overflow must not be the result of any of the following:
 - a) Operational error;
 - b) Improperly designed or constructed collection systems facilities;
 - c) Inadequate collection systems facilities or components;
 - d) Lack of appropriate preventive maintenance or
 - e) Careless or improper oversight.

Steps to stop the overflow, address the source of the problem and mitigate potential impacts from the overflow must be taken as soon as possible after becoming aware of the release and the KPDES enforcement authority, KDOW, must be notified of the event.

6.2.2 Short-Term Remediation

If the overflow was unavoidable and is a recurring problem it will first be studied for a possible short-term remediation solution until a permanent solution can be developed in accordance with the framework described below.

If appropriate, a site-specific control plan will be developed which may include, but is not limited to, measures such as:

- Telemetry and alarm systems
- O&M practices
- Encouraging continuous improvement through the reporting procedures on overflows
- Implementation of minor structural repairs
- Reducing overflows to a specific level (e.g. a limit on the average annual frequency of choke-related overflows)

The development of a site-specific control plan does not preclude the implementation of a long-term solution. Instead, it is aimed at mitigating further impacts until a long-term solution can be implemented.

6.2.3 Inspections of CSOs and SSOs

As stated earlier, the District has a dedicated wet weather crew of eight, responsible for identification of recurring overflows and their causes. This crew is comprised of personnel with expertise in flow monitoring, I/I and CSO inspection. If an unpermitted discharge is found to be recurring, the wet weather crew is responsible for assessment and monitoring to determine the cause of the recurring overflow. The wet weather crew is also responsible for the implementation of the CSO NMC for the permitted CSO discharges.

The wet weather crew routinely inspects all CSOs approximately once per week. If a rain event occurs during this rotation of inspections, a re-inspection takes place to verify the CSO activity during wet weather. When an unauthorized dry weather overflow occurs, this crew will initiate the same procedures as described in the response to an SSO. These inspections are documented in our GBA database for use by our internal staff as well as our Infrastructure Consultants and will be included in our watershed planning efforts in addressing water quality impairments of our streams.

The wet weather crew is also responsible for inspecting the current list of recurring SSOs on file as well as investigating other suspected overflow locations. These SSOs are classified in three categories.

1. Recurring – Overflows that have been determined to be recurring and do not fit the criteria described in 6.2.1 as unavoidable. Overflows will be classified as a recurring SSO if they have been observed to have occurred more than once in a twelve month period.
2. Inactive – Overflows under investigation that are either suspected or predicted hydraulic model overflow points in our collection system. These overflows are considered inactive until they occur more than once in a twelve month period.
3. Eliminated – Overflows that have been documented to not overflow more than once in a twelve month period based on at least two years of monitoring. Included in this eliminated decision process is an evaluation of circumstances such as drought conditions, capital projects, rain intensities and changes to predicted overflow points due to refinement of the District's hydraulic models.

These inspections are documented in our GBA database for use by our internal staff as well as our Infrastructure Consultants and will be included in our watershed planning efforts in addressing water quality impairments of our streams.

6.2.4 Watershed Planning

The District will develop and implement watershed plans for each of the four study basins in Northern Kentucky. These watershed plans will provide a comprehensive approach for addressing water quality impairments of streams, as well as addressing sources of the impairments, such as capacity related sewer overflows. The plans will provide recommendations for the further improvement of Northern Kentucky waterways and remedial measures for sewer related sources, including detailed plans for SSO abatement.

The framework for developing the watershed plans is due for review and approval within 12 months of the entry of the Consent Decree. The watershed plans are required to be submitted for review and approval on June 30, 2009.

6.2.5 Consent Decree Implementation

The Consent Decree requirements have many facets of improvement to the District's system and maintenance activities. The planned improvements include a myriad of I/I control, capacity expansion, storage facilities, treatment facilities and long-term planning measures. The Consent Decree sets forth numerous interim deadlines and an ultimate deadline of 2025. Implementation of the Consent Decree requirements will address the known recurring SSO locations.

6.2.6 Are There Remaining SSOs?

Ongoing system improvements, aging infrastructure and future development will continue to change the dynamics of the District's collection systems. Plans and

improvements, while made with the best available data, may not guarantee the prevention of future overflows. Therefore, the District will continue an iterative process of long-term overflow abatement for recurring locations.

SECTION 7: CONCLUSION

The SORP will be reviewed annually and amended as appropriate. In accordance with the District's proposed Consent Decree, annual review of the SORP will be conducted no later than the anniversary date of the approval of the SORP.

Proposed changes will be submitted for review and approval by the US EPA and KDOW, with changes submitted to the local KDOW office within 15 days of the anniversary date.

APPENDIX A

List of CSOs for the Dry Creek Permit (68) permitted and (27) to be permitted

SD1 CSO ID	KPDES Permit #	Watershed	Discharge Water Body	Original Typical Year Spill Frequency	Original Typical Year Volume (MG)	Notes
0030031	KY0021466 - Outfall 10	East	Ohio River Tributary	0	0.00	Permitted CSO - Carmel Manor (0030017)
0200069	KY0021466 - Outfall 11	East	Ohio River Tributary	8	0.17	Permitted CSO - Government Sewer (0200066)
0330100	KY0021466 - Outfall 12	East	Ohio River Tributary	4	0.12	Permitted CSO - Tower Hill Road (0330099)
0340051	KY0021466 - Outfall 13	East	Ohio River Tributary	20	0.78	Permitted Sewer - Manor Lane (0340044)
0340050	KY0021466 - Outfall 14	East	Ohio River Tributary	14	0.64	Permitted CSO - Burnet Ridge (0340034)
0570089	KY0021466 - Outfall 16	East	Ohio River	62	70.24	Permitted CSO - McKinney Street (0570011)
0570090	KY0021466 - Outfall 17	East	Ohio River	59	44.89	Permitted CSO - Main Street (0570030)
0600094	KY0021466 - Outfall 18	East	Ohio River	31	2.67	Permitted CSO - Foote Ave (0600002)
0600097	KY0021466 - Outfall 19	East	Ohio River	52	9.80	Permitted CSO - Ward Ave (0600016)
0610072	KY0021466 - Outfall 20	East	Ohio River	30	1.37	Permitted CSO - Washington Ave (0610006)
0610071	KY0021466 - Outfall 21	East	Ohio River	72	17.84	Permitted CSO - Taylor (0610029)
0620077	KY0021466 - Outfall 22	East	Ohio River	26	0.57	Permitted CSO - Lafayette Ave (0620015)
0620075	KY0021466 - Outfall 23	East	Ohio River	63	13.96	Permitted CSO - Patchen Street (0620031)
0640090	KY0021466 - Outfall 24	East	Ohio River	75	86.04	Permitted CSO - Washington Ave (0640081)
0650100	KY0021466 - Outfall 25	East	Ohio River Tributary	NA	NA	Permitted CSO - Geiger Ave (0650004)
0650090	KY0021466 - Outfall 26	East	Ohio River Tributary	5	0.57	Permitted CSO - Taylor Bottoms (0650084)
0840116	KY0021466 - Outfall 27	Central	Licking River	64	14.53	Permitted CSO - Fitzsimmons (0730005) 12th Street (0730009 and 0730028)
0770096	KY0021466 - Outfall 28	East	Ohio River	62	3.23	Permitted CSO - Saratoga Street (0770006)
0790086	KY0021466 - Outfall 29	Central	Licking River	63	161.54	Permitted CSO - 4th Street Chamber (0820001)
1480187	KY0021466 - Outfall 30	North	Ohio River	80	355.41	Permitted CSO - 3rd St at LS (1480012) 5th St (1480062) 3rd St at I-75 (1480097) Crescent at VW lot (1480103) 4th St (1480108) Willow Run (1480116) Dalton St (1480123) and 8th and Philadelphia Streets (1480129)
0790084	KY0021466 - Outfall 31	East	Ohio River	11	1.11	Permitted CSO - Columbia Street Chamber (0790015)
0870078	KY0021466 - Outfall 33	Central	Licking River	22	0.31	Permitted CSO - Park Drive (0870007)
0870079	KY0021466 - Outfall 34	Central	Licking River	66	8.91	Permitted CSO - Twin Oaks (0870019) 38th St - 12th St Tee (0870021) S of Southern Ave at Myrtle St (0870039) and N of Earle at Gilbert (0870052)
0880082	KY0021466 - Outfall 35	Central	Licking River	25	1.13	Permitted CSO - 33rd St (0880004)
0880081	KY0021466 - Outfall 36	Central	Licking River	85	18.18	Permitted CSO - 34th St SW of L&N (0880017)
0910088	KY0021466 - Outfall 37	Central	Licking River	72	43.75	Permitted CSO - Oakland and Florist (0910005) Eastern Ave - Holmes (0910025) Eastern Ave - North (0910027) and Eastern Ave South (0910031)
0910065	KY0021466 - Outfall 38	Central	Licking River	62	176.81	Permitted CSO - Eastern Ave - Meinken (0910055) Ashland Oil (0910064) and (0910007)
0930106	KY0021466 - Outfall 39	Central	Licking River	18	0.39	Permitted CSO - 16th St (0930002) and 16th and Water St (0930014)
0930104	KY0021466 - Outfall 40	Central	Licking River	15	1.64	Permitted CSO - 17th Street (0930026)
0930105	KY0021466 - Outfall 41	Central	Licking River	64	21.54	Permitted CSO - 19th St and Oakland (0930041) Glenway at Park St (0930050) SE side of Ballpark (0930056 and 0930066)
0930103	KY0021466 - Outfall 42	Central	Licking River	7	0.38	Permitted CSO - 20th Street (0930075)
0930102	KY0021466 - Outfall 43	Central	Licking River	2	0.00	Permitted CSO - Durrette Ave E of Glenway (0930083) and Durrette Ave (0930089)
0960064	KY0021466 - Outfall 44	Central	Licking River	2	0.06	Permitted CSO - 15th Street (0960003)
0960063	KY0021466 - Outfall 45	Central	Licking River	49	11.83	Permitted CSO - Oliver Street (0960027) and Patton Street (0960032)
0980073	KY0021466 - Outfall 46	Central	Licking River	4	0.02	Permitted CSO - 12th Street (0980002)
0980080	KY0021466 - Outfall 47	Central	Licking River	2	0.01	Permitted CSO - 13th Street (0980016)

0980081	KY0021466 - Outfall 48	Central	Licking River	78	39.31	Permitted CSO - Maryland Street (0980036)
1350155	KY0021466 - Outfall 49	North	Ohio River Tributary	25	2.60	Permitted CSO - Park Hills - Dixie Highway (1350104)
1420141	KY0021466 - Outfall 50	Central	Licking River	26	0.66	Permitted CSO - 6th and Garrard Street (1420004)
1420142	KY0021466 - Outfall 51	Central	Licking River	65	72.21	Permitted CSO - Garrard and 8th Street (1420022) 8th Street (1420025) and Sanford and 8th Street (1420028)
1420144	KY0021466 - Outfall 52	Central	Licking River	63	0.57	Permitted CSO - 9th Street (1420032)
1420145	KY0021466 - Outfall 53	Central	Licking River	61	1.27	Permitted CSO - 10th Street (1420043)
1420146	KY0021466 - Outfall 54	Central	Licking River	5	0.04	Permitted CSO - Robbins Street (1420076)
1420147	KY0021466 - Outfall 55	Central	Licking River	66	2.28	Permitted CSO - 11th Street (1420079)
1440209	KY0021466 - Outfall 56	North	Ohio River	84	29.31	Permitted CSO - 2nd Street at Russell (1440002)
1440212	KY0021466 - Outfall 58	North	Ohio River	55	3.89	Permitted CSO - 2nd Street at Madison (1440067) and Madison Ave (1440072)
1440204	KY0021466 - Outfall 59	North	Ohio River	0	0.00	Permitted CSO - Scott Street (1440100)
1440205	KY0021466 - Outfall 60	North	Ohio River	24	0.89	Permitted CSO - Greenup Street (1440121)
1440206	KY0021466 - Outfall 61	North	Ohio River	44	4.98	Permitted CSO - Garrard Street (1440156)
1470089	KY0021466 - Outfall 62	North	Ohio River	10	0.23	Permitted CSO - Philadelphia Street (1470003)
1470093	KY0021466 - Outfall 63	North	Ohio River	65	26.74	Permitted CSO - Bakewell (1470032) Main Street (1470052) and Johnson Street (1470072)
1490172	KY0021466 - Outfall 64	North	Ohio River	15	0.11	Permitted CSO - Swain Court (1490015)
1490132	KY0021466 - Outfall 65	North	Ohio River	31	11.92	Permitted CSO - Parkway at Highway (1490027)
1500131	KY0021466 - Outfall 66	North	Ohio River	80	14.12	Permitted CSO - Allamont Street (1500010)
1510199	KY0021466 - Outfall 67	Central	Banklick Creek Tributary	4	0.41	Permitted CSO - Highland Ave (1510047) Eliminated Spring of 2007
1710116	KY0021466 - Outfall 68	North	Ohio River	54	25.06	Permitted CSO - Adela Street (1710003)
1710114	KY0021466 - Outfall 69	North	Ohio River	31	0.66	Permitted CSO - Kenner Street (1710054)
1710119	KY0021466 - Outfall 70	North	Ohio River	36	4.04	Permitted CSO - Butler Street (1710068)
1710121	KY0021466 - Outfall 71	North	Ohio River	21	2.24	Permitted CSO - Carneal Street (1710084)
1710124	KY0021466 - Outfall 72	North	Ohio River	15	2.10	Permitted CSO - Ash Street (1710098)
1720109	KY0021466 - Outfall 73	North	Ohio River	64	13.22	Permitted CSO - Lagoon Street (1720005)
1730263	KY0021466 - Outfall 74	North	Ohio River	52	2.49	Permitted CSO - Rohman Street (1730029)
1730259	KY0021466 - Outfall 75	North	Pleasant Run Creek	35	3.31	Permitted CSO - Pleasant Street (1730029)
1850158	KY0021466 - Outfall 76	Central	Banklick Creek	64	26.80	Permitted CSO - Church Street - West (1850024) Church Street - East (1850032) and Baltimore Golf Course (1880028)
1870193	KY0021466 - Outfall 78	Central	Banklick Creek	3	0.03	Permitted CSO - Decoursey Ave (1870025)
1870194	KY0021466 - Outfall 79	Central	Banklick Creek	23	0.74	Permitted CSO - 47th Street (1870031)
1880091	KY0021466 - Outfall 80	Central	Licking River	64	10.91	Permitted CSO - 44th Street - South of Clubhouse (1880010) and Baltimore Golf Course (1880028)
1880090	KY0021466 - Outfall 81	Central	Licking River	22	0.99	Permitted CSO - Virginia Ave (1880021)
0630061	KY0021466 - Outfall 83	East	Ohio River	2	0.09	Permitted CSO - Riverside Drive (0630001)
1840130	Permit No. Required	Central	Banklick Creek Tributary	9	0.23	CSO to be permitted - Diversions: 1840055 1840069 1840072
0840111	Permit No. Required	Central	Licking River	25	3.37	CSO to be permitted - Diversion (0840005)
0840112	Permit No. Required	Central	Licking River	1	0.00	CSO to be permitted - Diversion (0840027)
0600104	Permit No. Required	East	Ohio River	3	0.21	CSO to be permitted - Diversion (0600037)
0540044	Permit No. Required	East	Ohio River Tributary	63	15.97	CSO to be permitted - SVT inspected as CSO weir wall in MH
0540009	Permit No. Required	East	Ohio River Tributary	64	10.31	CSO to be permitted - SVT inspected as CSO weir wall in MH
0600096	Permit No. Required	East	Ohio River	18	0.38	CSO to be permitted - O'Fallon Street (060042)
0550024	Permit No. Required	East	Ohio River Tributary	52	13.44	CSO to be permitted - SVT inspected as CSO gate in MH overflow to creek
1480185	Permit No. Required	North	Ohio River	14	0.59	CSO to be permitted - Diversion (1480017) not included in model
0530110	Permit No. Required	East	Ohio River Tributary	61	4.38	CSO to be permitted - Diversion (0530083) bypass to creek
1320093	Permit No. Required	North	Ohio River Tributary	3	0.15	CSO to be permitted - bypass to storm MH SVT inspected as CSO
0600095	Permit No. Required	East	Ohio River	0	0.00	CSO to be permitted - Diversion (0640041) there should only be one diversion for 0600095 and 0600096
0910066	Permit No. Required	Central	Licking River	0	0.00	CSO to be permitted - Diversion (0910039) not included in model
0910067	Permit No. Required	Central	Licking River	0	0.00	CSO to be permitted - Diversion (0910034) not included in model
0010001	Permit No. Required	East	Ohio River Tributary	46	6.24	CSO to be permitted
1380083	Permit No. Required	North	Ohio River Tributary	2	0.03	CSO to be permitted -bypass to storm line
1380054	Permit No. Required	North	Ohio River Tributary	8	0.85	CSO to be permitted -SVT inspected as CSO weir wall in MH
0630054	Permit No. Required	East	Ohio River Tributary	0	0.00	CSO to be permitted - Diversion (0630039)

1310100	Permit No. Required	Central	Licking River Tributary	NA	NA	CSO to be permitted - Diversions: 1310052 1310062 1310065 - Instructed during Bromley model update to leave in model as a MH but is not a CSO
1310106	Permit No. Required	Central	Licking River Tributary	NA	NA	CSO to be permitted - Is not in the model but instructed during Bromley model update to leave out of the model as it is not a CSO
1440207	Permit No. Required	Central	Licking River	NA	NA	CSO to be permitted - Outlet DS of Kennedy Flood Station not included in model ; SD1 found only discharges separate stormwater
0660085	Permit No. Required	East	Ohio River Tributary	0	0.00	CSO to be permitted - Diversion (0660057)
0010047	Permit No. Required	East	Ohio River Tributary	NA	NA	CSO to be permitted - Designated to leave out of model during Bromley model update - does not bypass regularly due to system improvements
1510098	Permit No. Required	Central	Banklick Creek Tributary	NA	NA	CSO to be permitted - In Dry Creek model-there is not outfall in the model at this location, but MH does not overflow in typical year
1510133	Permit No. Required	Central	Ohio River Tributary	0	0.00	CSO to be permitted - bypass to catch basin
0650008	Permit No. Required	East	Ohio River Tributary	NA	NA	CSO to be permitted
0690008	Permit No. Required	East	Ohio River Tributary	NA	NA	CSO to be permitted

Points in a combined system for which Permitting is being requested

APPENDIX B

Flood Pump Stations

Flood Station	Ohio River Stage
4 th Street	44.0 feet
Willow Run	45.5 feet
19 th Street	45.5 feet
Main Street (Dayton)	47.2 feet
Washington Street	48.0 feet
Columbia Street	49.0 feet
McKinney Street	49.2 feet
Eastern Ave.	49.4 feet
Patton Street	51.0 feet
Russell Street	51.3 feet
Main Street (Covington)	52.0 feet
8 th Street	54.3 feet
Pleasant Street	55.6 feet
Court Street	55.7 feet
Kennedy Street	64.1 feet

Flood Control Team

- ❖ Four (4) people will be needed to bring stations up and close the gates. The people responsible for this will be Paul Hartman, Mike Wood, Hasten Wright and Donnie Roberts.
- ❖ Two (2) people responsible for the scheduling are Mike Wood and Hasten Wright.
- ❖ Three (3) operators from Dry Creek will be responsible to inspect and operate all active flood stations from 19:00 – 07:00. Two (2) on shift and one (1) backup.
- ❖ Between 15:30 – 19:00 there will be four (4) people, Monday thru Friday, responsible for flood inspections will be Donnie Roberts, Brian Moore, Paul Hartman and Bill Mullins. Two (2) people / day / shift.
- ❖ Bob Marshall and Jake Sweeney will be performing daily checks and coordination of flood events.
- ❖ On Saturdays the inspections will be performed by Bob Gerrety and Vern Wiley, Sunday will be Hasten Wright and Mike Wood.
- ❖ Rain events fill-in people will include Donnie Roberts, Brian Moore, Paul Hartman, Bill Mullins, Bob Marshall, Jake Sweeney, Brian Berens, Chip Lorentz, Mike Buhite, Chris Crone, Gary Harney and Chris Robinson.
- ❖ Heavy rain events will involve Tom Foster's crew.

Flood Station Operation

Bringing on Flood Stations:

- ◆ Make sure all associated gates are closed (fall protection required)
- ◆ Close outfall behind station – turn breaker lock off
- ◆ Grease all pumps – record date and time
- ◆ Check voltage – record date and time
- ◆ Zero all run times on Zetron
- ◆ Turn on bubbler
- ◆ Turn breakers on for pumps
- ◆ Turn HOA⁵ on auto
- ◆ Turn auto control on in Zetron
- ◆ Bring up pumps in pump mode (manual to auto)
(Willow Run the exception, needs to be pumped down in hand to keep pumps from short cycling until Goebel Park backups caught up with and pumped down before putting station on Zetron.)
- ◆ Check amps when pumps running – record on station sheet
- ◆ Check wetwell barrack, gauges, bubbler operation, and pumps when operating for vibration, excessive heat, etc.
- ◆ Note: Willow Run siphon breakers can freeze, if pumps leaking water and vibrating, take torch and unfreeze siphon breaker. (Pump will prime itself, leakage and vibration will disappear.)
- ◆ Water lines at Main St. and McKinney St. in Dayton will need valves opened
- ◆ Influent gates will have to be opened at Main St. and McKinney St. in Dayton as well as outfall closed

Bringing Stations Down:

- ◆ Turn auto control off on Zetron
- ◆ Open outfall behind station – turn breaker off!
- ◆ Turn bubbler off
- ◆ Turn breakers and HOA⁵ off
- ◆ Record all run times on station sheets and then re-zero times
- ◆ Leave main breakers on

Flood Station Checks

Check wetwell – check high water line in wetwell. A pump may not be running when there!!! Watch for low or high wetwell.

Check Gauge – confirms wetwell level

Check Bubbler – Confirms wetwell level

Check Voltage – Incoming power to station. CG&E will have to be called if highly irregular variance occurs.

Example	<u>Leg</u>	<u>Leg</u>	<u>Leg</u>
Irregular Reading	450	300	125

Example	<u>Leg</u>	<u>Leg</u>	<u>Leg</u>
Regular Reading	450	450	453

(small amount of variance)

Check AMPS – Variance in AMPS could mean motor going bad – can only check when pump is operating. Call electrician.

Check Grease Sheet – pumps that are operating (run times)
Need to be greased every six hours regardless of run times to be greasing in uniform procedure.

Check Run Times:

- Press setup menu on Zetron
- Press backspace to get to run time program
- Press enter to get run times
- Backspace to get all pump run times
- Press escape to get out and back to regular setting on Zetron

Note: If you press enter more than once you could erase run times.

Check pumps when operating – For excessive heat – “put hands on” for vibration and leaking of water, siphon breaker could be frozen.

Greasing:

- Do not grease pumps when running (could damage pumps)
- Do not overpower greasers on small pumps, don't force feed
- Grease slowly (could break grease line)
- Greasers may need grease. Grease cans kept at Willow Run and 4th St.

Check Zetron for Alarm – Visual check (red light would be on)

Zetron – Reset Alarm:

- Call Dry Creek to see which pump kicked out
- Turn off HOA switch on control cabinet
- Reset breaker if necessary
- Reset overload
- Turn HOA back on
- Go to Zetron
- Press setup menu
- Backspace to pump mode program
- Press enter
- Backspace to # of pump
- Press enter to change from manual to auto twice
- If pump kicks out again- call electrician

Zetron – Turn a Pump Off (to grease):

- Press setup menu
- Press backspace to pump mode program
- Press enter
- Press backspace to # of pump
- Press enter to change from auto to manual
- Escape will take you back to original set

- **Note:** Reverse from manual to auto when you want to turn back on after first four steps.

- **Note:** Willow Run small pump needs to be greased every 6-8 hrs. May have to turn off.

Flood Gate Operation Associated with Flood Stations
05-19-05

Fourth St. Flood (44')

- 44.0' - Close 66"x 66" outfall gatewell at 4th St.
- 44.0' - Close gate at 9th & Lowell, use 2" tee handle (CCW)
- 44.0' - Close gate at 10th & Lowell, use 2" tee handle (CCW)

Willow Run (45.5')

- 45.5' - Close 48" gate on sewer main at the end of Bakewell, in the parking lot, use 2" tee handle (CW)
- 45.5' - Close 60" gate tower at 2nd & Crescent on sewer main, electrically operated (CW)
- 45.5' - Close Willow Run Outfall, electrically operated
- 45.5' - Close 20" gate at Philadelphia St. (Behind Holiday Inn), use 2" tee handle (CW)

19th St. (45.5')

- 45.5' - Close new gate on sewer main gate tower at 17th St. & floodwall, (painted red), use ½ moon wrench
- 45.5' - Close gate tower at 17th St. (painted silver), use ½ moon wrench
- 45.5' - Close 72" gate on 19th St. Outfall, electrically operated
- 45.5' - Close 15" gate in street at Thomas & Glenway, use 2" tee handle for 81 turns (CCW)

Main St. Dayton (47.2')

- 47.2' - Close 72"x72" Dayton outfall gate
- 47.2' - Open inlet gate to Main St. Dayton

Washington St. (48')

- 48.0' - Close 24"x 24" gate at 9th & Linden (CW)
- 48.0' - Close 48"x 48" gate at Nelson & Linden (CW)
- 48.0' - Close 42"x 42" gate at Linden & Floodwall, (Don Pablo's lot, direction on stem), use 2" tee handle
- 48.0' - Close 30"x 30" gate for Saratoga Street, Riverside Newport, use small ½ moon
- 48.0' - Close 54"x 54" gate at Washington St. Outfall, electrically operated

Columbia St. (49')

- 49.0' - Close 54"x 54" Outfall for Columbia St., electrically operated

McKinney St. (49.2')

- 49.2' - Close 96"x 96" McKinney St. Outfall gate, electrically operated
- 49.2' - Open inlet station gate for McKinney, electrically operated

Eastern Ave. (49.4')

- 49.4' - Close Greenup & Adams gate tower, uses ½ moon wrench
- 49.4' - Close Eastern & Levassor gate tower, uses ½ moon wrench
- 49.4' - Close 20th & Glenway gate tower on sewer main, (painted red), use ½ moon.
- 49.4' - Close gate in street at end of Oakland, use 2" tee handle (CW)
- 49.4' - Close Durette St. gate tower, use ½ moon
- 49.4' - Close 60" Outfall at 24th St. station, electrically operated

Patton St (51')

- 51.0' - Close 24" gate on 16th St. at south end of street, closer has a 1" operator and tee handle wrench in Patton station, about 100 turns (CCW)
- 51.0' - Close 30" gate at 15th St. gate tower on riverside of wall, use ½ moon operator
- 51.0' - Close 48" Patton St. Outfall gate, electrically operated
- 51.0' - Close 36" gate on new sewer main in 15th St. ballpark, 210 turns to close (CW)

Russell St. (51.3')

- 51.3' - Close 48" gate at 2nd & Greenup, use 2" tee handle (CW)
- 51.3' - Close 30" gate on Madison & floodwall, use 2" tee handle (CW) *Being Left Closed, Line is Crushed*
- 51.3' - Open 24"x 24" gate at 2nd and Madison, use 2" tee handle *Usually Left Open*
- 51.3' - Close 48" gate at 2nd and Johnson, use 2" tee handle wrench
- 51.3' - Close 48" outfall gate at Russell St., electrically operated
- 51.3' - Close 36" gate at 2nd & Scott in Parking Garage, use 2" tee handle

Main St. Cov. (52')

- 52.0' - Close 60" Main St. outfall gate, use small ½ moon wrench located at station.

8th St. (54.3')

- 54.3' - Close 24" gate on Robbins St., use ½ moon wrench
- 54.3' - Close 18" gate on 10th St. Cov., use ½ moon wrench
- 54.3' - Close 24" gate on 9th St., use ½ moon wrench.
- 54.3' - Close 84"x 84" outfall gate at 8th St., electrically operated
- 54.3' - Close gate on sewer main at 11th St, use 2" tee handle (CCW)

Gates not associated with a station

- 55.0' - Close 60"x 84" gate at 9th Street on the cellular wall (Newport) (CCW)
- 55.0' - Open 60"x 66" gate at 9th and Lowell, (Newport)
- 55.0' - Close 36"x 36" gate at 10th Street on the cellular wall, (Newport) (CCW)
- 55.0' - Open 60"x 60" gate at 10th and Lowell, (Newport)

Pleasant St. (55.6')

- 55.6' - Close 24" gate tower on 11th St., use ½ moon wrench
- 55.6' - Close 24" gate on 12th St., use ½ moon wrench
- 55.6' - Close 24" gate on 13th St., use ½ moon wrench
- 55.6' - Open 36" gate in Front of Station (Under Steel Plate), use 2" tee handle (CW)
- 55.6' - Close 66" gate at Pleasant St outfall gate, electrically operated

Court St. (55.7')

- 55.7' - Close 8" Outfall gate at Court St. 2" square

Gates not associated with a station

- 56.5' - Close 36" gate at Kirschners Junk Yard, (Newport), 5 sided tee handle in hatch CCW)
- 56.5' - Open 42"x 42" gate at 12th and Lowell, (Newport) (M.H.#2) (CCW)
- 57.1' - Close 24" gate at end of 20th St., use ½ moon, (Covington)(Riverside)
- 58.8' - Close 42" gate at 6th and Garrard, use 2" tee handle (CW)
- 59.6' - Close 30" gate on East side of S.R. #9 at 12th St., (Newport) (M.H. #16), 5 sided tee handle
- 59.6' - Open 24" x 24" gate at 12th and Lowell, (Newport) (M.H.#1) (CCW)
- 62.0' - Close 24" gate at end of Oakland, (Covington), use 2" tee handle
- 64.0' - Close 24"x 24" gate at end of 3rd St., (Newport) (Behind Party Source)

Kennedy St. (64.1')

- 64.1' - Close 8" gate in m/h at Kennedy, use 2" tee handle.
- 64.1' - Close 12" gate in Street
- 64.1' - Close 12" gate in flower bed
- 64.1' - Close 8" gate by closure
- 64.1' - Open 12" inlet gate to wet well (Left Open)
- 64.1' - Check flapper or check valve in street

Gates not associated with a station

- 65.7' - Close 18" gate at Highway Ave., (Covington), use 2" tee handle
- 66.0' - Close 8" gate at L&N Railroad, (Newport)
- 70.0' - Close 12" gate at Lavassor, (Covington), use 2" tee handle (CW)
- 78.0' - Close 6" valve in curb box (behind old Booth Hospital) CAN'T LOCATE

Run Times (Record) From Zetron:

- Press setup menu
- Press backspace to run times program
- Press enter
- Backspace to # 1 through # 5 to get run times
- Record on sheet
- Escape will take you back to original setting on Zetron

Main St. and McKinney St., Dayton:

- Self-greasing pumps (don't have to grease)
- Check water to pumps when running
- **Note:** Sight glass on water line



Not Running

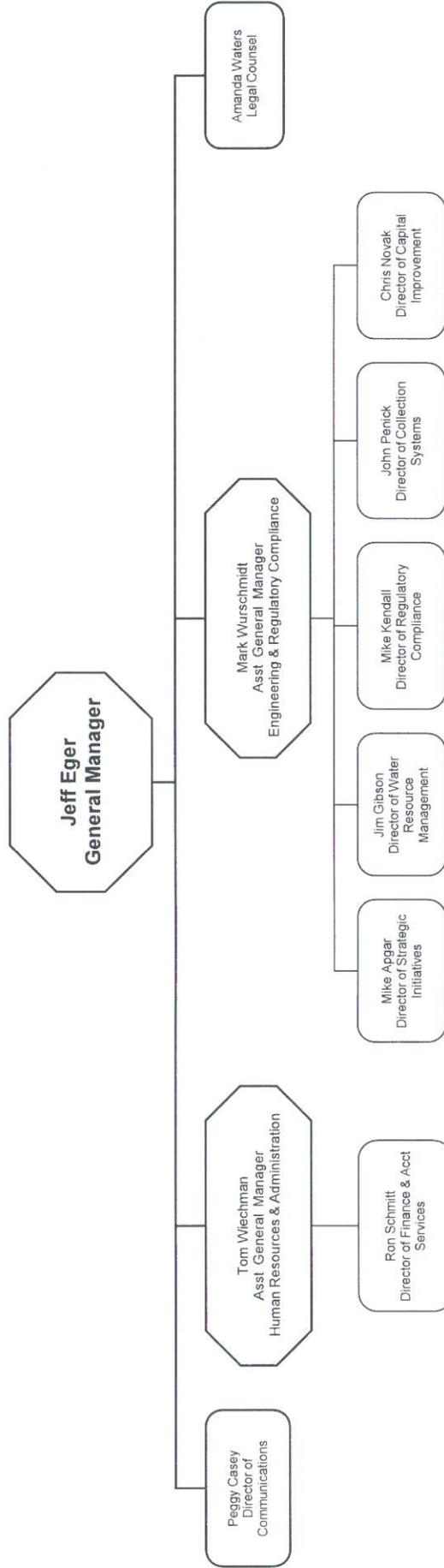


Running

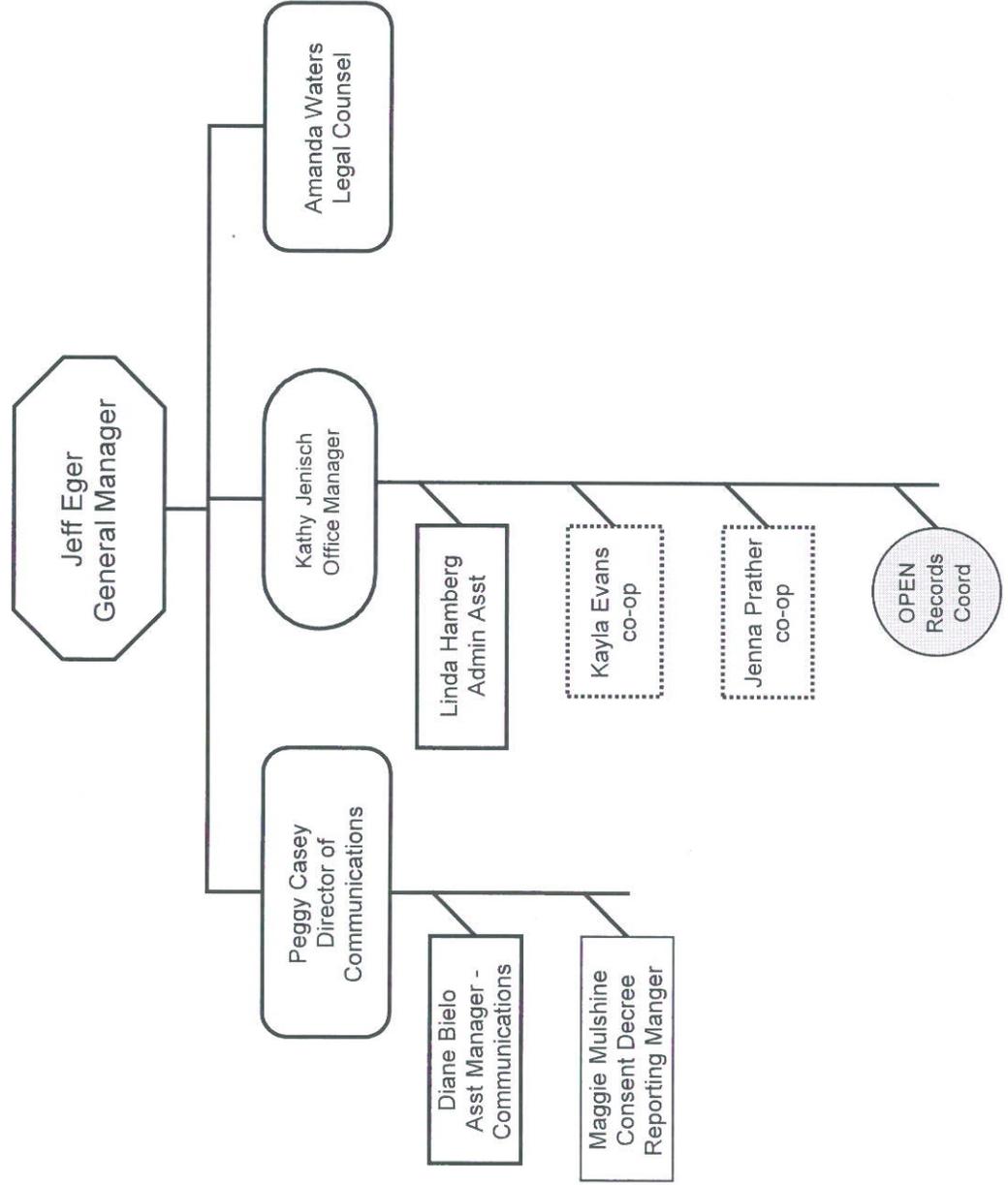
Check water lines for severe leaking, etc.

APPENDIX C

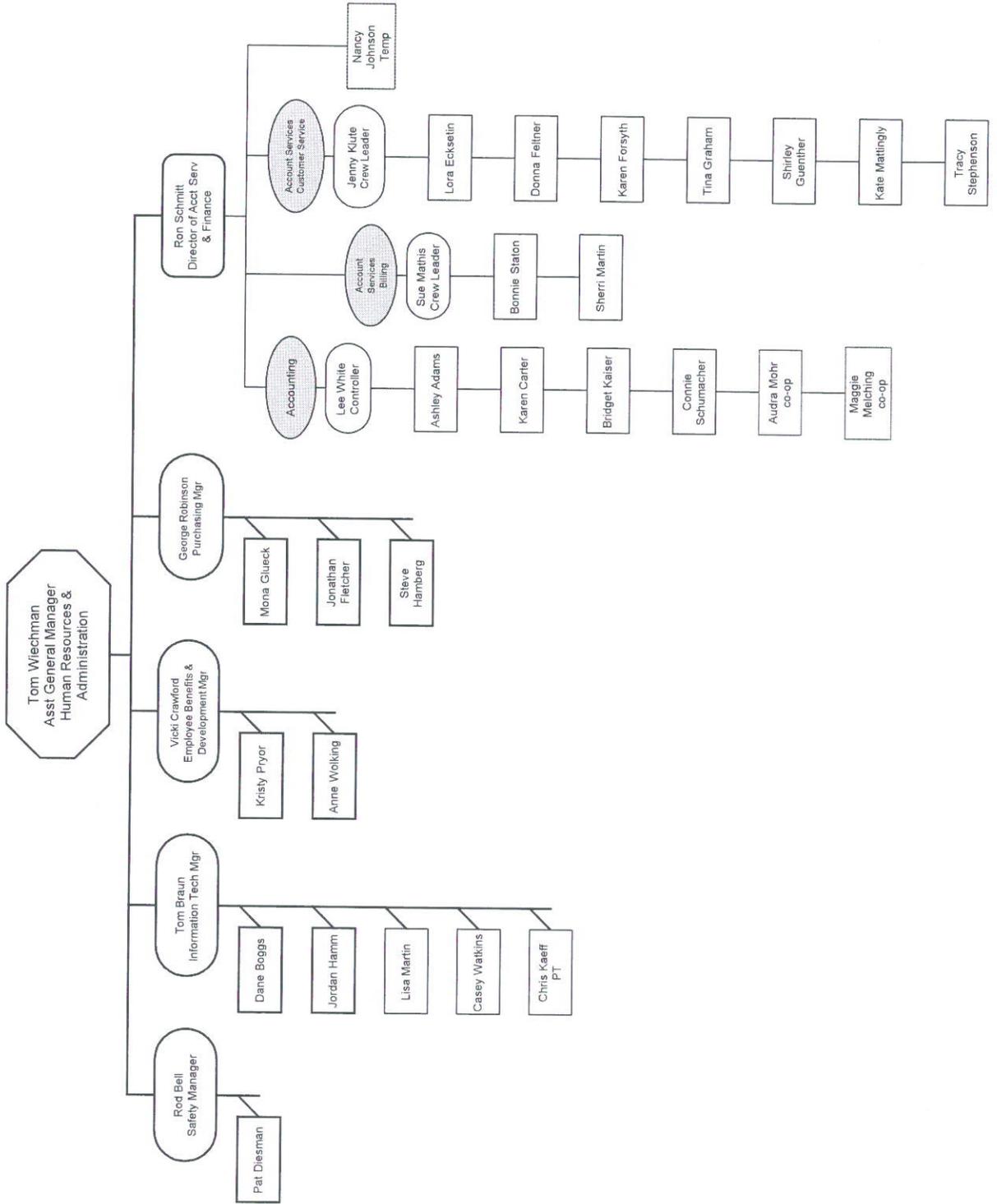
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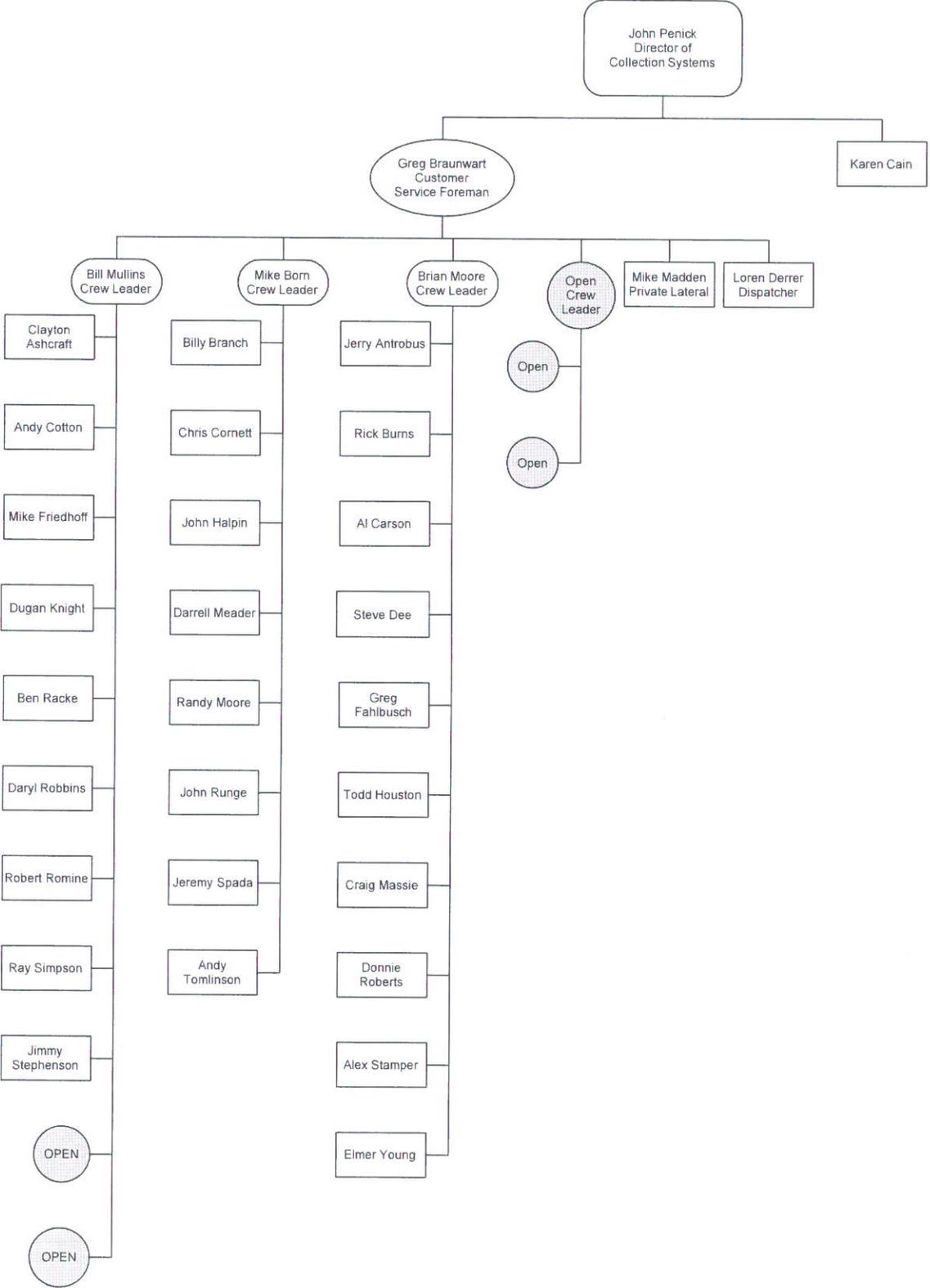
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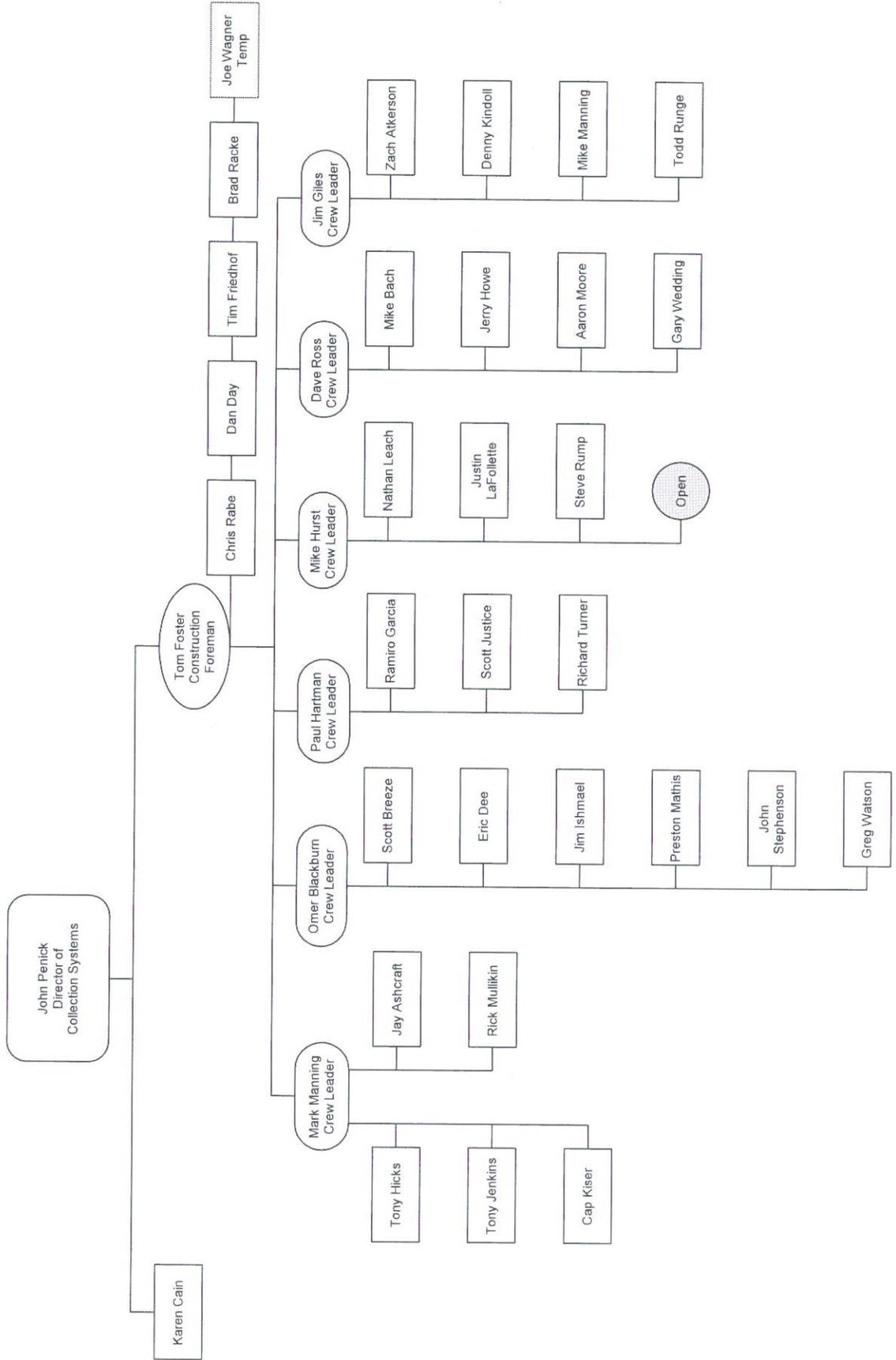
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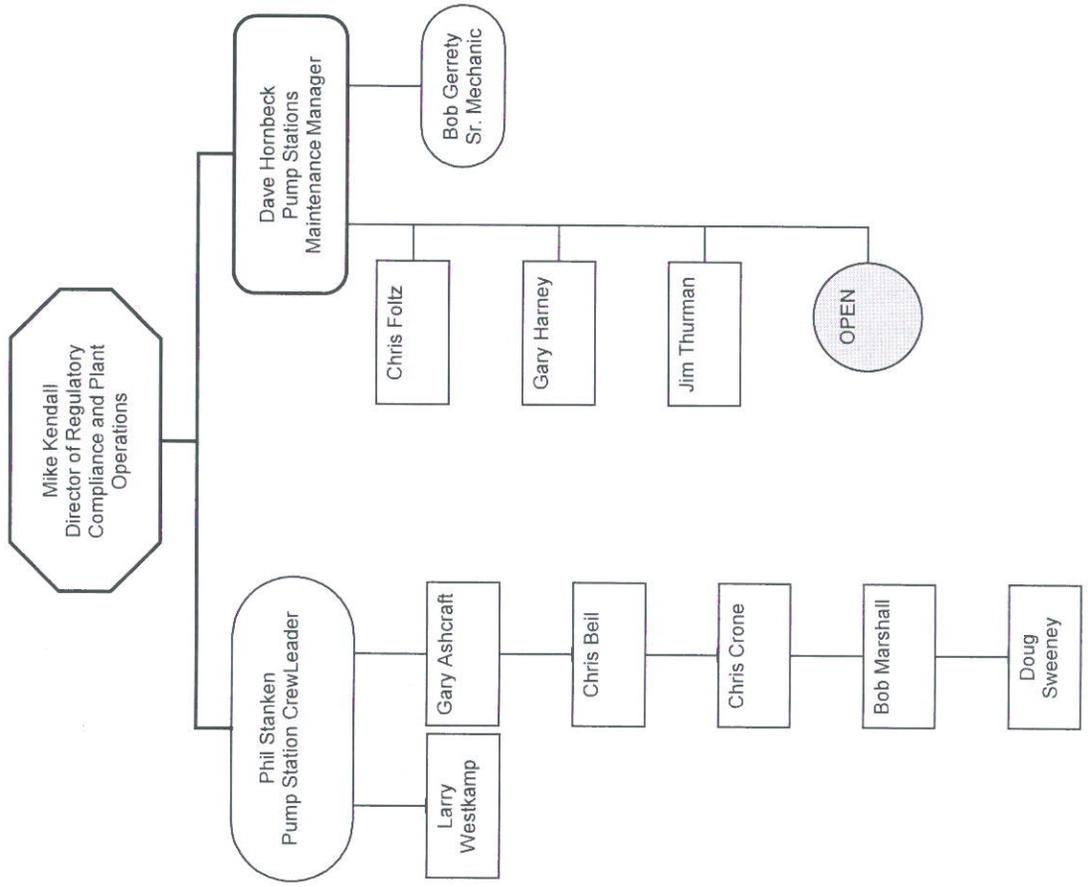
Sanitation District No. 1 Collection Systems



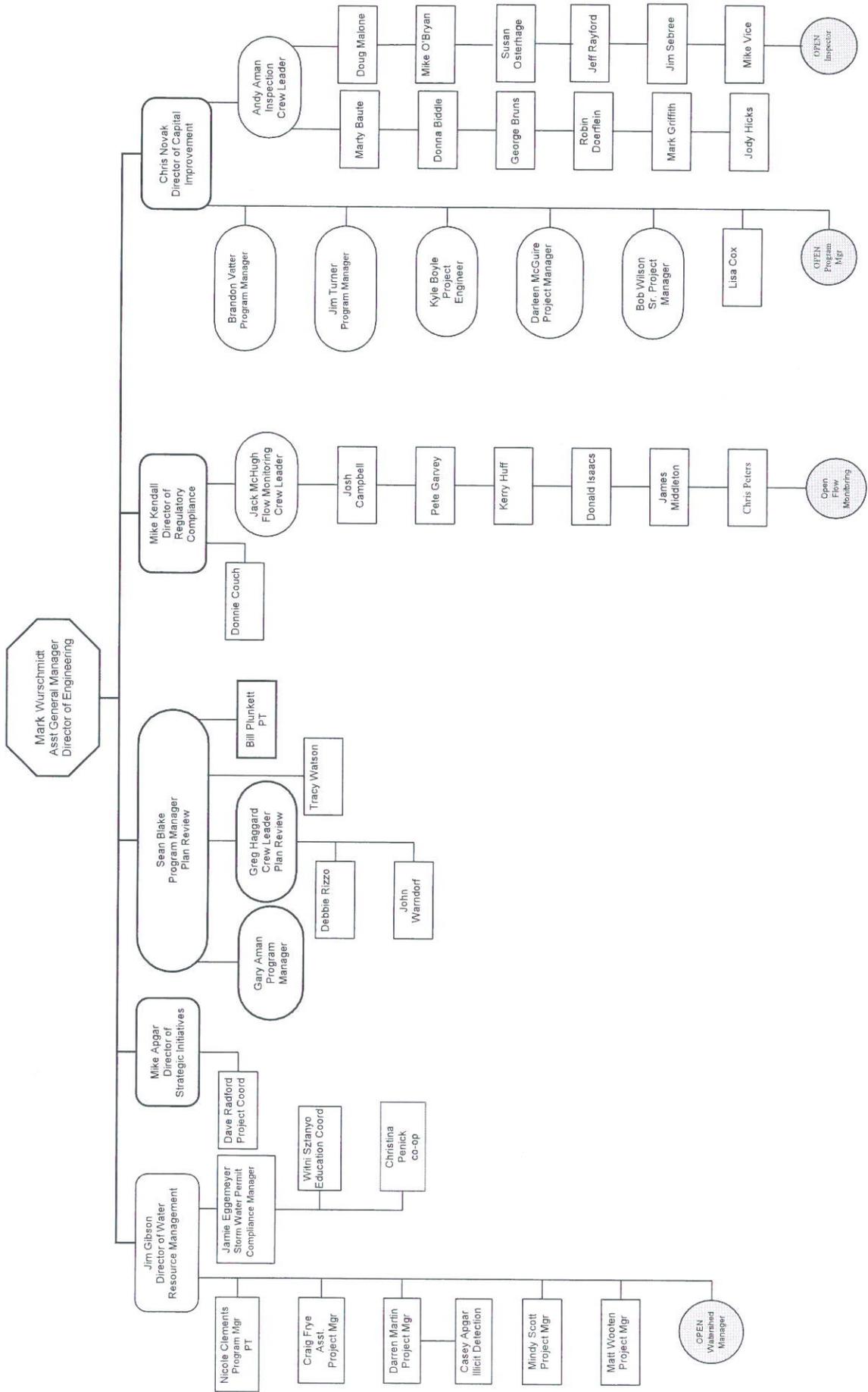
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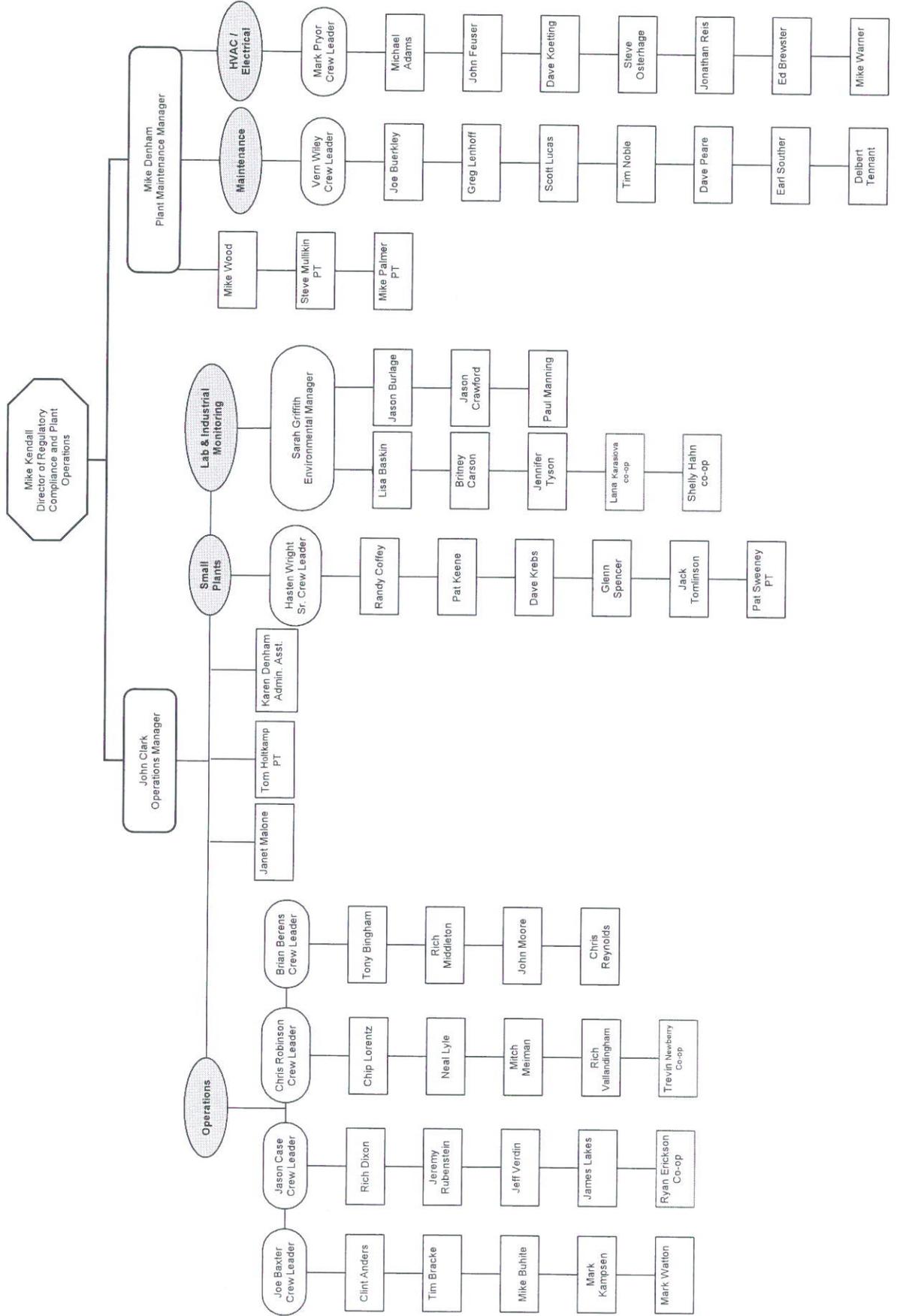
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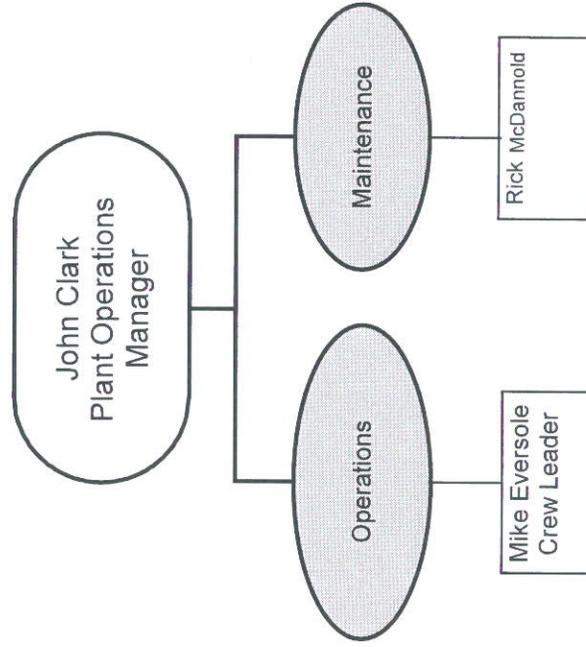
Sanitation District No. 1 Engineering



Sanitation District No. 1 Dry Creek Operations & Maintenance



Sanitation District No. 1 Eastern Regional Treatment Plant



APPENDIX D

ON-CALL LISTING JULY, 2007

SUN.	MON.	TUES.	WED.	THURS.	FRI.	SAT.
1 397	2 622	3 366	4 478	5 401	6 395	7 327
8 327	9 623	10 275	11 411	12 471	13 398	14 384
15 384	16 450	17 385	18 521	19 475	20 595	21 355
22 355	23 568	24 420	25 489	26 422	27 456	28 447
29 447	30 358	31 734				

PROCEDURE FOR CONTACTING

1) CALL HOME PHONE, 2) CALL CELL PHONE, 3) CALL TRUCK RADIO

FIELD PERSONNEL & EMPLOYEE

JIM GILES-327, ELMO YOUNG-623, JEREMY SPADA-411, RICK MULLIKIN-471, DAVE ROSS-359, BILL MULLINS-384, LOREN DERRER-450, GREG WATSON-385, BRIAN MOORE-355, CAP KISER-521, JOHN HALPIN-475, MIKE BORN-335, PRESTON MATHIS-395, DONNIE ROBERTS-422, SCOTT BREEZE-489, DONNIE COUCH-447, CRAIG MASSIE-456, GARY WEDDING-358, OMER BLACKBURN-386, MIKE FRIEDHOFF-622, DARYL ROBBINS-568, MIKE MADDEN-413, RANDY MOORE JR.-366, MARK MANNING-478, MIKE HURST-417, AL CARSON-401, PAUL HARTMAN-397, MIKE MANNING -398, GREG FAHLBUSCH - 275, BILLY BRANCH-595, STEVE DEE-420, RAMIRO GARCIA - 734.

FOR ANY CHANGES IN THIS SCHEDULE, PLEASE LIST AND SAVE THEM BELOW IN THE NOTES SECTION.

NOTES:

* SHIFTS WILL CHANGE AT 7:30 a.m. *

APPENDIX E

Cost Centers for Department 2

Code	Dept.	Description	Location	Updated
3	2	2000 Ford F450 TV Truck	Customer Service	
4	2	1996 Ford - Vactor Truck	Customer Service	
5	2	1996 Ford - Vactor Truck	Customer Service	
6	2	1999 Sterling-Vactor	Customer Service	
7	2	1995 Mack Dump Truck - DM690S	Customer Service / Construct.	
8	2	1995 Ford 1Ton Dump	Customer Service / Construct.	
9	2	1990 Ford Vactor	Customer Service	
10	2	1996 Mack Dump Truck	Customer Service / Construct.	Trans. 9/24/2003
11	2	IHI Trackhoe	Customer Service / Construct.	
14	2	1995 Ford Camera Truck	Customer Service	
16	2	1997 Ford P.U.	Customer Service	
22	2	John Deere Skid Loader	Customer Service / Construct.	
23	2	1996 Ford Super Duty	Customer Service / Construct.	
24	2	1996 Kodiak Stet Truck(Chev)	Customer Service	
25	2	1973 GMC Flusher Truck	Customer Service	
29	2	1998 Ford TV Truck	Customer Service	
30	2	1990 Ford F350 4X4	Customer Service	
32	2	1990 Ford Dump L9000	Customer Service / Construct.	
33	2	1996 Ford P.U.	Customer Service / Construct.	6-10-05 used 90%
34	2	1988 GMC Stet Truck	Customer Service	
39	2	1995 Ford Utility	Customer Service / Construct.	
41	2	1995 Ford F-150 P.U.	Customer Service	
42	2	1995 Ford F-150 P.U.	Customer Service	
43	2	1998 Ford F-150 P.U.	Customer Service	
45	2	1995 Ford F-150 P.U.	Customer Service / Construct.	
46	2	1998 Ford Ranger P.U.	Customer Service	
49	2	1998 Van	Customer Service	
50	2	2000 Ford F450 Utility	Customer Service / Construct.	
53	2	1992 Ford F350 4x4 Utility Truck	Customer Service	
54	2	1995 Ford Utility Bed	Customer Service / Construct.	
55	2	1998 Ford F250 PU	Customer Service / Construct.	
56	2	1990 Ford Utility Bed - Diesel	Customer Service / Construct.	
57	2	1995 Ford Super Duty	Customer Service / Construct.	
61	2	2000 Ford Super Duty	Customer Service / Construct.	
62	2	1995 Ford P.U.	Customer Service / Construct.	
63	2	1986 Chevrolet - 3/4 Ton	Customer Service	
64	2	1997 International - Vactor Truck	Customer Service	
70	2	1999 Freightliner Dump	Customer Service / Construct.	
78	2	1991 Mack - DM690X	Customer Service / Construct.	
79	2	1991 GMC Top Kick w/ Jet Machine	Customer Service	
83	2	2000 Ford Super Duty	Customer Service / Construct.	
85	2	1994 3/4 Ton Chevrolet P.U.	Customer Service	
92	2	2000 Ford Super Duty	Customer Service	
95	2	(Silver) 1999 Ford Windstar	Customer Service	
99	2	2000 Ford Van E150	Customer Service	
100	2	John Deere 410 Back Hoe	Customer Service / Construct.	
101	2	John Deere 310 Back Hoe	Customer Service / Construct.	
102	2	2001 Ford F550 Dump	Customer Service / Construct.	
105	2	Ingersoll Rand Air Compressor	Customer Service / Construct.	
106	2	Ingersoll Rand Air Compressor	Customer Service / Construct.	

107	2	Ingersoll Rand Air Compressor	Customer Service / Construct.	
108	2	931B Track Loader	Customer Service / Construct.	
109	2	Rod Machine - SRECO	Customer Service	
110	2	2001 F250 3/4 Ton Ford	Customer Service / Construct.	
112	2	John Deere Track Hoe	Customer Service / Construct.	
115	2	2000 Ford E450	Customer Service	2/3/2002
119	2	2001 Ford F550 Utility	Customer Service / Construct.	
120	2	2001 Dodge 2500	Customer Service / Construct.	
125	2	2002 International Dump	Customer Service / Construct.	11/12/2001
126	2	2002 Ford F550 Dump	Customer Service / Construct.	7/16/2002
129	2	Kubota Trailer	Customer Service / Construct.	
130	2	1989 Case Back Hoe	Customer Service / Construct.	
131	2	Case Back Hoe	Customer Service	
132	2	Case Loader	Customer Service / Construct.	
135	2	Caterpillar 953 Track Loader	Customer Service / Construct.	
138	2	Takeuchi 175	Customer Service / Construct.	12/8/2003
139	2	1997 International Dump	Customer Service / Construct.	6/6/2003
140	2	2004 Ford F-150 4x4	Customer Service / Construct.	10/28/2003
141	2	Takeuchi 175	Customer Service / Construct.	
146	2	Takeuchi 145	Customer Service / Construct.	
147	2	Stanley Track Horse	Customer Service / Construct.	
148	2	Bobcat 863	Customer Service / Construct.	
150	2	2000 Ford F150	Customer Service / Construct.	
151	2	Stanley Track Horse-Hose Reel	Customer Service	6/30/2003
154	2	Easement Trailer	Customer Service	7/29/2003
157	2	Hydro-Tech Pressure Washer	Customer Service	2/11/2004
159	2	Generator attached to Truck 53	Customer Service	3/24/2004
160	2	Trench Compaction Wheel	Customer Service	5/16/2005
823	2	Hydraulic Breaker	Customer Service / Construction	
824	2	Landscape Rake	Customer Service / Construction	
866	2	FINN Straw Blower	Customer Service / Construct.	5/23/2003
867	2	Core Cut 3700 Saw	Customer Service / Construct.	2/14/2003
868	2	Ex-Cell 5000W Generator	Customer Service / Construct.	2/14/2003
869	2	Ex-Cell 5000W Generator	Customer Service / Construct.	2/14/2003
870	2	Quickie Saw 144575598	Customer Service / Construct.	
871	2	Quickie Saw 1404660	Customer Service / Construct.	
872	2	Quickie Saw 141708138	Customer Service / Construct.	
873	2	Quickie Saw 133989883	Customer Service / Construct.	
874	2	Quickie Saw 191073076	Customer Service / Construct.	
877	2	Moritz Trailer	Customer Service / Construct.	3/25/2002
898	2	Bucket Machine - puller	Customer Service	
899	2	Bucket Machine - dumper	Customer Service	
900	2	Straw Blower	Customer Service / Construct.	
904	2	1985 International Road Tractor	Customer Service / Construct.	
909	2	18' Utility Trailer	Customer Service / Construct.	
910	2	16' Utility Trailer	Customer Service / Construct.	
911	2	Talbert Drop Deck Drag	Customer Service / Construct.	
969	2	Hurst Drag	Customer Service / Constr.	
970	2	Lift All Forklift	Customer Service	
1031	2	Eager Beaver Trailer	Customer Service / Construct.	
1033	2	Rod Machine - SRECO	Customer Service	
1034	2	Air- Smoke Blower	Customer Service	
1043	2	Honda Trash Pump #1	Customer Service / Construct.	
1044	2	Honda Trash Pump #2	Customer Service / Construct.	
1045	2	Reciprocal Pump	Customer Service / Construct.	

1046	2	Kubota Trailer	Customer Service / Construct.	
1048	2	Coleman Generator	Customer Service	
1050	2	Snow Thrower Craftsman 26 inch	Customer Service	2/11/2003
1051	2	Sweepster	Customer Service / Construct.	6/24/2002
1052	2	Cement Mixer	Customer Service / Construct.	
1053	2	Sewer Line Locater	Customer Service	
1054	2	Blacktop Tamper	Customer Service / Construct.	
1055	2	Electric Portable Rodder Machine	Customer Service	
1056	2	Gas Portable Rodder Machine	Customer Service	
1057	2	Steam Cleaner/Pressure Washer	Customer Service	
1080	2	1995 Ford Super Duty	Customer Service	3/31/2004
1081	2	Club Car Golf Cart	Customer Service	6/1/2004
1085	2	2005 3/4 Ton Chevrolet	Customer Service	12/28/2004
1088	2	Kobelco Trackhoe	Customer Service	6/28/2005
1089	2	2006 Sterling Vactor	Customer Service	7/27/2005
1090	2	Bobcat Rake - Soil Conditioner	Customer Service	7/29/2005
1093	2	2006 Chevy Silverado 3/4 Ton PU	Customer Service	9/27/2005
1094	2	2006 Chevy Silverado 3/4 Ton PU	Customer Service	9/27/2005
1095	2	2005 Ford E450 (Camera Truck)	Customer Service	11/4/2005
1096	2	Caterpillar 90 Forklift	Customer Service	11/4/2005
1099	2	Emergency Trench Trailer	Customer Service	11/16/2005
1100	2	2006 Freightliner	Customer Service	1/5/2006
1101	2	2006 Eager Beaver Trailer	Customer Service	1/5/2006
1104	2	Bobcat Skidsteer/Model T250	Customer Service	3/7/2006
1105	2	2006 Freightliner	Customer Service	?????
1109	2	2003 Case Wheel Loader	Customer Service	10/30/2006
1113	2	Harley Rake Soil Conditioner	Serial #-232001091 Cust.Serv.	9/6/2006
1115	2	2002 GMC 3/4 ton flat-bed truck	Customer Service	1/30/2007

APPENDIX F

CURRENT LIST OF RECURRING SSO LOCATIONS (117) 82 (Active) 35 (Inactive) 2/12/2007

No.	Associated SRP Manhole Number	City	County	Comments
1	0010161	Melbourne	Campbell	Inactive 2006
2	0020014	Unincorporated Campbell County	Campbell	Active
3	0020034	Unincorporated Campbell County	Campbell	Inactive 2006
4	0050022	Ft. Thomas	Campbell	Active
5	0060001	Unincorporated Campbell County	Campbell	Active
6	0060002	Unincorporated Campbell County	Campbell	Active
7	0090002	Highland Heights	Campbell	Inactive 2006
8	0100001	Unincorporated Campbell County	Campbell	Active
9	0110010	Unincorporated Campbell County	Campbell	Inactive 2006
10	0130064	Cold Spring	Campbell	Inactive 2006
11	0140113	Highland Heights	Campbell	Inactive 2006
12	0150016	Southgate	Campbell	Inactive 2006
13	0150315	Southgate	Campbell	Inactive 2006
14	0150320	Southgate	Campbell	Inactive 2006
15	0150090	Southgate	Campbell	Inactive 2006
16	0160007	Ft. Thomas	Campbell	Inactive 2006
17	0160017	Ft. Thomas	Campbell	Inactive 2006
18	0170003	Ft. Thomas	Campbell	Inactive 2006
19	0200001	Ft. Thomas	Campbell	Inactive 2006
20	0220010	Ft. Thomas	Campbell	Inactive 2006
21	0230055	Ft. Thomas	Campbell	Inactive 2006
22	0240003	Ft. Thomas	Campbell	Active
23	0250003	Ft. Thomas	Campbell	Inactive 2006
24	0260014	Ft. Thomas	Campbell	Inactive 2006
25	0300063	Ft. Thomas	Campbell	Eliminated 5/9/2007
26	0310062	Ft. Thomas	Campbell	Inactive 2006
27	0330009	Ft. Thomas	Campbell	Inactive 2006
28	0340035	Ft. Thomas	Campbell	Inactive 2006
29	0370002	Ft. Thomas	Campbell	Inactive 2006
30	0410010	Ft. Thomas	Campbell	Inactive 2006
31	0410014	Ft. Thomas	Campbell	Inactive 2006
32	0410019	Ft. Thomas	Campbell	Active
33	0410036	Ft. Thomas	Campbell	Active
34	0410068	Newport	Campbell	Active
35	0440074	Dayton	Campbell	Active

No.	Associated SRP Manhole Number	City	County	Comments
36	0490001	Newport	Campbell	Inactive 2006
37	0490073	Newport	Campbell	Inactive 2006
38	0500003	Newport	Campbell	Inactive 2006
39	0520004	Newport	Campbell	Inactive 2006
40	0700004	Newport	Campbell	Active
41	0860016	Wilder	Campbell	Active
42	1090069	Edgewood	Kenton	Active
43	1110025	Erlanger	Kenton	Active
44	1110067	Erlanger	Kenton	Active
45	1130002	Erlanger	Kenton	Inactive 2006
46	1160004	Crestview Hills	Kenton	Active
47	1190007	Erlanger	Kenton	Active
48	1220029	Erlanger	Kenton	Active
49	1240008	Erlanger	Kenton	Active
50	1280008	Erlanger	Kenton	Active
51	1560016	Ft. Mitchell	Kenton	Active
52	1560019	Ft. Mitchell	Kenton	Active
53	1560034	Ft. Mitchell	Kenton	Inactive 2006
54	1560074	Ft. Mitchell	Kenton	Active
55	1570100	Ft. Mitchell	Kenton	Active
56	1580034	Ft. Mitchell	Kenton	Inactive 2006
57	1590006	Lakeside Park	Kenton	Active
58	1600005	Lakeside Park	Kenton	Active
59	1600029	Lakeside Park	Kenton	Active
60	1600049	Lakeside Park	Kenton	Active
61	1600050	Lakeside Park	Kenton	Active
62	1600059	Lakeside Park	Kenton	Active
63	1600110	Lakeside Park	Kenton	Active
64	1600113	Lakeside Park	Kenton	Active
65	1610102	Ft. Mitchell	Kenton	Active
66	1610114	Crescent Park	Kenton	Active
67	1610115	Crescent Park	Kenton	Active
68	1620001	Ft. Mitchell	Kenton	Active
69	1630012	Crescent Springs	Kenton	Active
70	1650063	Ft. Mitchell	Kenton	Inactive 2006
71	1680001	Unincorporated Kenton County	Kenton	Active
72	1690043	Ft. Wright	Kenton	Active
73	1700025	Park Hills	Kenton	Active

No.	Associated SRP Manhole Number	City	County	Comments
74	1730110	Bromley	Kenton	Active
75	1760047	Edgewood	Kenton	Active
76	1760048	Edgewood	Kenton	Active
77	1820014	Villa Hills	Kenton	Active
78	1830017	Unincorporated Boone County	Boone	Active
79	1830020	Erlanger	Kenton	Active
80	1890001	Lakeside Park	Kenton	Active
81	1890010	Lakeside Park	Kenton	Active
82	1890011	Lakeside Park	Kenton	Active
83	1900028	Cold Spring	Campbell	Active
84	1920291	Cold Spring	Campbell	Inactive 2006
85	1950199	Ft. Wright	Kenton	Active
86	1950PS1	Ft. Wright	Kenton	Active
87	1960012	Edgewood	Kenton	Active
88	2030097	Edgewood	Kenton	Active
89	2090001	Elsmere	Kenton	Active
90	2090026	Elsmere	Kenton	Active
91	2120002	Elsmere	Kenton	Active
92	2130024	Villa Hills	Kenton	Inactive 2006
93	2150050	Crestview	Campbell	Active
94	2150131	Cold Spring	Campbell	Inactive 2006
95	2150132	Cold Spring	Campbell	Inactive 2006
96	2160036	Ft. Mitchell	Kenton	Active
97	2250ALE	Unincorporated Campbell County	Campbell	Active
98	2280011	Unincorporated Kenton County	Kenton	Active
99	2380001	Unincorporated Boone County	Boone	Active
100	2390002	Unincorporated Boone County	Boone	Active
101	2390006	Unincorporated Boone County	Boone	Active
102	2120041	Elsmere	Kenton	Active
103	0860001	Wildier	Campbell	Active
New	0090009			Active
New	0100002			Active
New	0150023			Active
New	0150058			Active
New	0150063			Active
New	0150064			Active
New	0150065			Active

No.	Associated SRP Manhole Number	City	County	Comments
New	0150069			Active
New	0150351			Active
New	0150356			Active
New	0410011			Active
New	0860003			Active
New	1600009			Active
New	2110002			Active
New	2120001			Active

APPENDIX G

Pump Stations with Constructed Bypass (29)

No.	Associated SRP Manhole # (MHNUM)	Identification Source ⁽¹⁾	SRP Type	Structure Type	SRP/CIP Number for Potential Elimination	Status	Location	City	County	District Map	Comments
1	2470PS3				Eliminated	Airport Office PS	Erlanger	Kenton	k21		
2	2200PS1					Alex Licking PS	Alexandria	Campbell	u14		To be eliminated by CIP
3	1030PS3					American Sign PS	Unincorporated	Boone County	k15		
4	19200PS2					Bunning PS	Campbell	Boone			
5	1920PS4					Cedar Point PS	Campbell	Campbell	s19		
6	2150PS1					Crestview PS	Crestview	Campbell	t18		
7	2440PS4					Eagles Landing PS	Florence	Boone	k14		
8	1420PS1					Eighth Street PS	Covington	Kenton	q23-II		
9	1030PS1					Gammon Calmet PS	Unincorporated	Boone			To be eliminated by CIP
10	0010PS5					Harrison Harbor PS	Boone County	Boone	I14		
11	2420PS5					Hempsteade PS	Meibourne	Campbell	v20		
12	2280PS1					Highland Acres PS	Unincorporated	Boone	k13		To be eliminated by CIP
13	2420PS2				Eliminated	Indian Hill PS	Boone County	Boone	I13		To be eliminated by CIP
14	2010PS1					Keavy PS	Unincorporated	Kenton	q18		
15	2280PS2					Ky Aire PS	Boone County	Boone	I13		
16	1570PS1				Eliminated	Leathers Rd PS	FL Mitchell	Kenton	o20		Bypass plugged Oct. 2005
17	1030PS2					Levi PS	Unincorporated	Boone	I16		
18	2220PS1					Macke PS	Boone County	Campbell	v15		
19	2010PS4					Maifred PS	Alexandria	Campbell	v15		
20	2010PS2					Meadow Lane PS	Taylor Mill	Kenton	q16		
21	0150PS1					Overlook PS	Taylor Mill	Kenton	q18		
22	0960PS1					Patton Street PS	Campbell	Campbell			
23	2020PS2					Meadow Hill PS	Covington	Kenton	q22-ur		
24	2230PS3					Reiley Rd PS	Covington	Kenton	p15		
25	2320PS3					Richwood PS	Alexandria	Campbell	v15		To be eliminated by CIP
26	2010PS3					Ridgeway PS	Unincorporated	Boone	k9		
27	1900PS3					Ripple Creek PS	Boone County	Boone	k9		
28	1810PS3					Riverwatch PS	Taylor Mill	Kenton	q17		
29	2420PS6					South Hampton PS	Cold Spring	Campbell	t18		
30	1920PS3					Winters Lane #2 PS	Villa Hills	Kenton	n22		
31	0050PS3	field and 175ssos	bypass	pipe		Highland Heights PS	Unincorporated	Boone	k13		
32	1950PS1					Lakeview PS	Boone County	Boone	k13		

APPENDIX H

System Release Report

Location: _____ Wet Weather Release / Dry Weather Release
 (Closest Address, Street, City) (Please Circle One)

Type of structure: _____ Structure number: _____
 (Manhole, Pump Station, CSO, Force Main, Sewer) Example: (2120040) (DA 212 Manhole 40)

Cause of Release: (Circle One) Lack of Capacity / Blockage in Main Line / Power Outage
 High River Level / Mechanical Failure / Sewer Line Break / Electrical Failure
 Other (Explain) _____
 Example: (Cause unknown pending further investigation)

Release Began: _____ Reported by: _____
 (Date and Time) (Name of person reporting release)

Dry Creek Operator on Duty initiating the report: _____

Notification	Name	Date	Time	Phone Number
Local Office DOW Electronic Notification	Yes/No			859-525-4923
DOW (Frankfort)				1-800-928-2380

Instructions from KDOW: _____ No Instructions Given:

Release Stopped: _____ Reported by: _____
 (Date and Time) (Name of person reporting Stop release)

Dry Creek Operator on Duty finalizing the report: _____

Notification	Name	Date	Time	Phone Number
Local Office DOW Electronic Notification	Yes/No			859-525-4923
DOW (Frankfort)				1-800-928-2380

Volume of System Release: _____ Gallons / E-Notification Tracking Number _____

Method Used to Estimate Volume Released: Volume Estimate Guide / Mannings Pipe Chart
 (Circle One)

Please document all pertinent information about the release: _____

 (Obtain as much information as possible from the person reporting the release)

Environmental Impact Assessment: Fish Kill / Discoloration / Public Use Observed / Public Access
 (Check the Appropriate Box/Boxes)
 for observed Impact
 Noticeable Odor / Visible Solids in Stream / Visible Solids Along Stream Bank / There Was No Impact

(See back for Instructions on Environmental Impact Assessment)

Faxed to the Division of Water: Date _____ Name: _____

The purpose in documenting Overflows will help to develop measures to protect public health and the environment by providing a standardized course of action to follow in the event of overflows from the collection system. This includes any separate sewers and any combined sewer overflow (CSO) from the combined sewers. This report form will help to develop mechanisms to:

- 1) Identify and characterize sewer overflows;
- 2) Provide immediate response to investigate and mitigate the overflow event, minimizing the effect on public health and the environment;
- 3) Provide immediate notification to all affected, including the public, health officials, the Kentucky Division of Water (DOW), and others; and,
- 4) Ensure that SD1 personnel are trained to implement the plan.

The objectives are to provide better customer service and environmental stewardship through this document. This is intended to be an operational document and although the report emphasizes emergency response activities to contain, mitigate, and clean up residuals from overflows, it also addresses preventative measures taken as part of the routine maintenance procedures conducted by SD1.

Instructions for completing the Environmental Impact Assessment: It is vitally important that an assessment of the immediate area affected by the overflow is documented. The person responding to the overflow event should make every effort to assess the impact to the public and the environment as soon as feasible. The appropriate boxes on the front of this report should be reported to the Dry Creek personnel taking and reporting all the information to the Division of Water. If the assessment is considered unsafe due to darkness, the assessment should be completed the next day during day light hours and should be reported to Dry Creek for proper documentation of the event. This circumstance is typical during overflows involving Pump Stations. The pump station crews will typically perform the assessment for proper documentation. **When performing the assessment Ask Yourself "Would I feel comfortable allowing the public access in the immediate vicinity of this area impacted by this overflow?"**

Overflow response Containment and Cleanup procedures: After an initial assessment of the overflow is completed, field crews should initiate measures to stop the overflow. Perimeters should be established, where deemed appropriate, if needed, to prevent public contact until clean-up efforts are complete. The immediate destination of the overflow should be determined and efforts made to minimize the overall impact. In the event of prolonged (more than 48 hours) overflow conditions due to line blockage or failure, portable bypass pumping should be conducted around the obstruction. Post warning signs if the overflow affects an existing creek/waterway or could create a potential health risk.

Crews responding to all overflows shall make every effort to contain and ensure that the areas impacted by overflows should be thoroughly cleaned of residual material deposited by system overflows in order to minimize the public health and environmental impact. All solid materials should be disposed of in an appropriate manner.

Name of person performing the Assessment: _____ Date/Time: _____

Please Identify the Impacted Waterway: _____
(Example: Small tributary to Banklick Creek)

For Field Supervisor Required information: _____
(Please describe the events of the Overflow)

Work Requests/Work Orders: _____

Field Supervisors Review Initials: _____ Date: _____

Pump Station Supervisors Review Initials: _____ Date: _____

Data Entry Clerk Initials: _____ Date: _____

Director of Regulatory Compliance Review Initials: _____ Date: _____

APPENDIX I

SANITATION DISTRICT NO. 1

REPORT FORM

ODOR COMPLAINT
 SPILL REPORT

NOTIFICATION OF SPILL AND ODOR COMPLAINTS

1. SANITATION DISTRICT NO.1 STAFF MEMBER RECEIVING CALL: _____
2. NAME OF PERSON CALLING: _____
3. REPRESENTING (AGENCY): _____
4. TELEPHONE # OF PERSON CALLING: _____
5. ADDRESS OF PERSON CALLING: _____
6. TIME OF CALL _____ A.M. _____ P.M. DATE OF CALL: (month) _____ (day) _____ (year) _____
7. AFFECTED WATERWAY: _____
8. LOCATION OF SPILL: TOWN/CITY _____
COUNTY: _____ STATE: _____
9. NEAREST STREET ADDRESS OR PUBLIC ROADWAY AND GENERAL DIRECTIONS (HIGHWAY OR RT. #, WHICH RAMP, ETC.) _____
10. TYPE OF INCIDENT: () TRAFFIC ACCIDENT () CUSTOMER COMPLAINT () BYPASS () EQUIPMENT FAILURE
() OTHER (IDENTIFY) _____
11. TYPE OF MATERIAL SPILLED: () SEWAGE () PETROLEUM () HAZARDOUS MATERIAL
() OTHER (IDENTIFY) _____
12. AMOUNT OF MATERIAL: _____ LBS _____ GALS (INDICATE IF THIS IS AN ESTIMATE)
13. CAUSE OF SPILL OR ODOR? _____
14. SPILL OCCURRED: (check one)
() ON LAND NEAR CREEK () ON ROADWAY () DIRECTLY INTO RIVER () OTHER (DESCRIBE)
() TO A STORM SEWER VIA A SEWER SYSTEM () DIRECTLY INTO CREEK OR TRIBUTARY
15. DATE OF SPILL: (month) _____ (day) _____ (year) _____
16. TIME OF DAY SPILL: (began) _____ (stopped) _____
17. THE SPILL HAS BEEN REPORTED TO:
a. (Name) _____ (Agency) _____
b. (Name) _____ (Agency) _____
c. (Name) _____ (Agency) _____
d. (Name) _____ (Agency) _____

18. REMARKS / COMMENTS: _____

KENTUCKY NATURAL RESOURCES AND ENVIRONMENTAL MANAGEMENT: (502) 564-2741 U.S. EPA REGION IV (404) 562-8700

ORSANCO: (513) 231-7719 KENTUCKY DIVISION OF WATER: FRANKFORT: (502) 564-3410 FLORENCE OFFICE: (859) -292- 6411

APPENDIX J

Environmental Impact Assessment Team (EIA Team)

This newly formed team of employees have been assembled to assess the effectiveness of our program. Throughout the year this team will ensure all the procedures are followed consistently among our crews and to evaluate the efficiency of our program. For the first year of the formation of this team we will only have four members. We will assess the need for additional personnel during the first year efforts. The following individuals have been selected to be on this response team:

Micheal Kendall: Director of Regulatory Compliance

Mr. Kendall has worked for the District since 1974. He started as a Utility worker at Bromley Wastewater Treatment Plant and was promoted to Chief Operator of the plant in 1977. Since then, he has held many positions with the District, from Superintendent of Operations to his current position of Director of Regulatory Compliance. He is currently responsible for overseeing treatment plant operation and maintenance, both large and small; field pump station operation and maintenance, including all flood pumping stations; flow monitoring, including assessment of the condition of our collection system's infrastructure relating to wet weather issues; combined sewer overflow inspection; and assisting the storm water program manager in the area of illicit discharge and detection.

In 1980, he was appointed by Governor John Y. Brown to the Kentucky State Board of Wastewater Certification, serving just one year. He is a member of the Water Environment Federation and he is the 2002 recipient of the William D. Hatfield Award given to him by the Kentucky/Tennessee Water Environment Association.

Jack McHugh: Crew Leader of the CSO crew and our I/I flow monitoring crew

Jack has worked for the District since 1999. He is a crew leader for our flow monitoring operations as well as responsible for the CSO inspection crew. He is responsible for the maintenance of the diversion structures for the CSO's and performs inflow and infiltration investigations relating to SSO's. Prior to working for the District, Jack worked for Malcolm Pirnie Inc. for seven years. His duties there included inflow and infiltration investigation and testing (Smoke and Dye) along with flow monitoring.

Donnie Couch: Special projects – I/I, Storm water complaints, Illicit discharge and others as needed

Donnie Couch has worked for the District since 1994. He has experience with both the field and engineering departments at the District and has extensive knowledge of both the sanitary and storm systems. Presently, he is a Project Coordinator for Regulatory Compliance Department. His job duties include addressing the elimination of illicit discharges, assessing sanitary sewer infrastructure relating to wet weather and flooding issues, and working closely with the city leaders and homeowners to resolve storm water issues. Recently, he was appointed to serve on the Sanitation District's Facility Storm Water Pollution Prevention Team. In addition, he is the Incident Commander for the District's Emergency Response Team and is a certified Hazardous Materials Technician and works closely with both the Greater Cincinnati and Northern Kentucky Hazardous Materials Units.

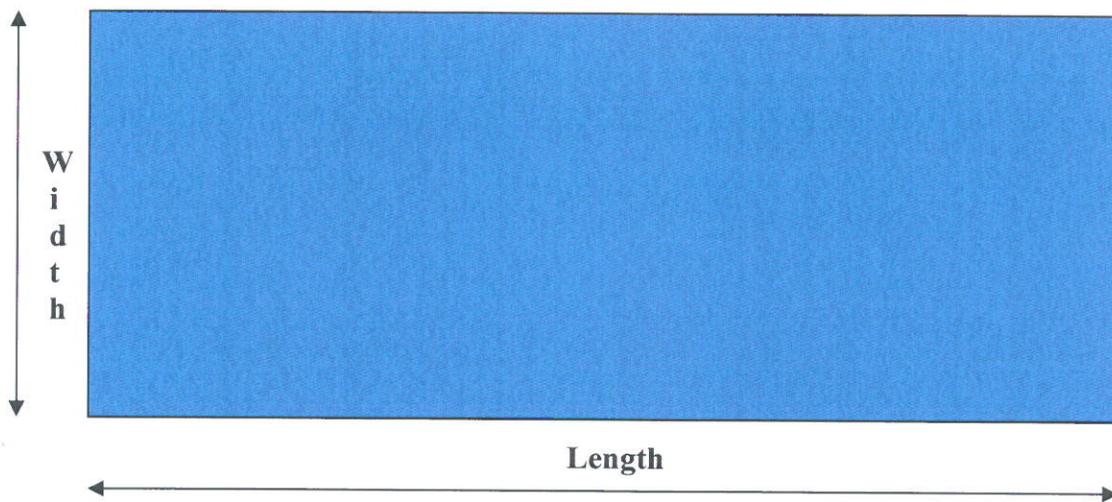
Matt Wooton: Watershed Project Manager

Matt Wooton is an aquatic biologist who has spent the last 10 years studying aquatic life in streams and rivers as a means of monitoring water quality. He earned his Bachelors of Science (BS) degree in 1997 in biological sciences and then followed that by earning a Master of Science (MS) degree in biological sciences in 1999. Prior to coming to the Sanitation District No. 1, Matt was employed by the Ohio River Valley Water Sanitation Commission (ORSANCO) from 1999 to present. His work, as an aquatic biologist, primarily focused on characterizing the macroinvertebrate community of the Ohio River and the development of biological criteria for fish and macroinvertebrates in the Ohio River. Prior to coming to ORSANCO, Matt worked for the West Virginia District of the United States Geological Survey as an hydrologic technician during the Kanawha/New River National Water Quality Assessment (NAWQA) Program.

APPENDIX K

Discharge Volume Estimation

Calculating Rectangular Spill Areas



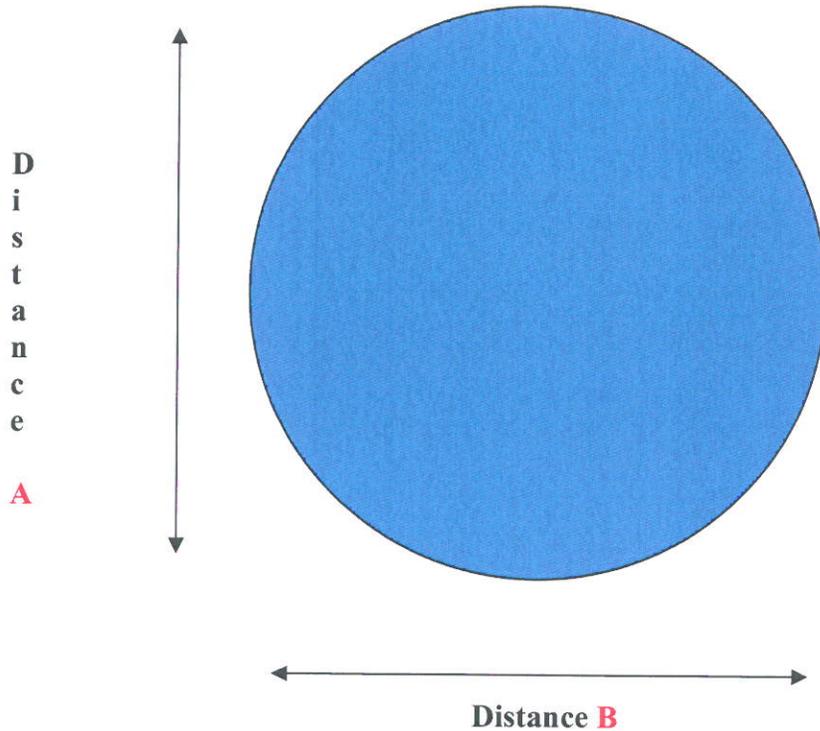
Example: **Approximate length of the spill area -** 100 feet
 Approximate Width of the spill area - 50 feet
 Approximate Depth of the spill area - 0.5 feet
 (convert inches to feet by dividing by 12)
 6 inches divided by 12 = .5 feet

Estimated volume would be: $100 \times 50 \times .5 = 2,500$ cu. ft.

Each cu. ft. will contain 7.48 gallons of sewage

Estimated Discharge Volume would be: $2,500 \times 7.48 = 18,700$ gallons spilled

Calculating Circular or Pond Spill Areas



Example: **Approximate Length of Distance A -** 100 feet
 Approximate Length of Distance B - 100 feet
 Approximate Depth of the spill area - 0.5 feet
 (convert inches to feet by dividing by 12)
 6 inches divided by 12 = .5 feet

Estimated volume would be: $100 \times 100 \times 0.5 \times 0.7^* = 3,500$ cu. ft.

***Factor for estimating area of a circle as
a portion of the area of a square is 0.7**

Each cu. ft. will contain 7.48 gallons of sewage

Estimated Discharge Volume would be: $3,500 \times 7.48 = 26,180$ gallons

Discharge Volume Estimation for Manholes

1 Rim/Casting On		Manhole Overflow Condition						
		Gallons						
		1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
A	Water Seeping Out	2,300	6,800	14,000	27,000	54,000	81,000	110,000
B	Water Pouring Out	11,000	34,000	68,000	140,000	270,000	410,000	540,000

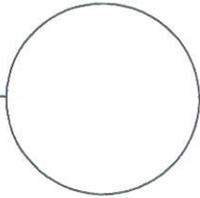
2 Manhole Lid 1/4 Off		Manhole Overflow Condition						
		Gallons						
		1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
A	Avg. Depth of Water above Rim/Casting (Ft.) 0.5	27,000	81,000	160,000	320,000	650,000	970,000	1,300,000
B	1	81,000	240,000	490,000	970,000	1,900,000	2,900,000	3,900,000
C	2	180,000	540,000	1,100,000	2,200,000	4,300,000	6,500,000	8,600,000
D	3	220,000	660,000	1,300,000	2,600,000	5,300,000	7,900,000	11,000,000
E	4	260,000	770,000	1,500,000	3,100,000	6,200,000	9,200,000	12,000,000
F	5	280,000	850,000	1,700,000	3,400,000	6,800,000	10,000,000	14,000,000

3 Manhole Lid 1/2 Off		Manhole Overflow Condition						
		Gallons						
		1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
A	Avg. Depth of Water above Rim/Casting (Ft.) 0.5	54,000	160,000	320,000	650,000	1,300,000	1,900,000	2,600,000
B	1	160,000	470,000	950,000	1,900,000	3,800,000	5,700,000	7,600,000
C	2	360,000	1,100,000	2,200,000	4,300,000	8,600,000	13,000,000	17,000,000
D	3	440,000	1,300,000	2,600,000	5,300,000	11,000,000	16,000,000	21,000,000
E	4	510,000	1,500,000	3,100,000	6,100,000	12,000,000	18,000,000	24,000,000
F	5	570,000	1,700,000	3,400,000	6,900,000	14,000,000	21,000,000	27,000,000

4 Manhole Lid Completely Off		Manhole Overflow Condition												
		Gallons												
Avg. Depth of Water above Rim/Casting (Ft.)	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours	1 Hour	3 Hours	6 Hours	12 Hours	24 Hours	36 Hours	48 Hours
0.5	110,000	340,000	680,000	1,400,000	2,700,000	4,100,000	5,400,000	110,000	340,000	680,000	1,400,000	2,700,000	4,100,000	5,400,000
1	320,000	960,000	1,900,000	3,800,000	7,700,000	12,000,000	16,000,000	320,000	960,000	1,900,000	3,800,000	7,700,000	12,000,000	16,000,000
2	720,000	2,200,000	4,300,000	8,600,000	17,000,000	26,000,000	35,000,000	720,000	2,200,000	4,300,000	8,600,000	17,000,000	26,000,000	35,000,000
3	890,000	2,700,000	5,300,000	11,000,000	21,000,000	32,000,000	43,000,000	890,000	2,700,000	5,300,000	11,000,000	21,000,000	32,000,000	43,000,000
4	1,000,000	3,100,000	6,100,000	12,000,000	25,000,000	37,000,000	49,000,000	1,000,000	3,100,000	6,100,000	12,000,000	25,000,000	37,000,000	49,000,000
5	1,100,000	3,400,000	6,900,000	14,000,000	27,000,000	41,000,000	55,000,000	1,100,000	3,400,000	6,900,000	14,000,000	27,000,000	41,000,000	55,000,000

Another method of calculating the approximate discharge volume is as follows: If you are dealing with a spill that has been running into a stream or storm drain, you must estimate the gallons by the amount of time of the overflow times the number of connections on the sewer line upstream of the overflow. (assume 240 gallons per household per 24 hours. **EXAMPLE:** If you have a line with 6 houses upstream of the overflow and it has been overflowing for 24 hours then - $6 \times 240 = 1,440$ gallons spilled. If the overflow is less than 24 hours in duration, then the calculation must be prorated the daily sewage generation rate. **EXAMPLE:** If you have 60 houses on a lined that has been overflowing for 2 hours then - $60 \times 240 \times 2/24 = 1,200$ gallons spilled. **Another EXAMPLE is:** If you have 6 houses on a line that has been overflowing for 12 hours then - $6 \times 240 \times 12/24 = 720$ gallons spilled.

APPENDIX L



SANITARY SEWER OVERFLOW ALERT

A sanitary sewer overflow occurred in your area on _____

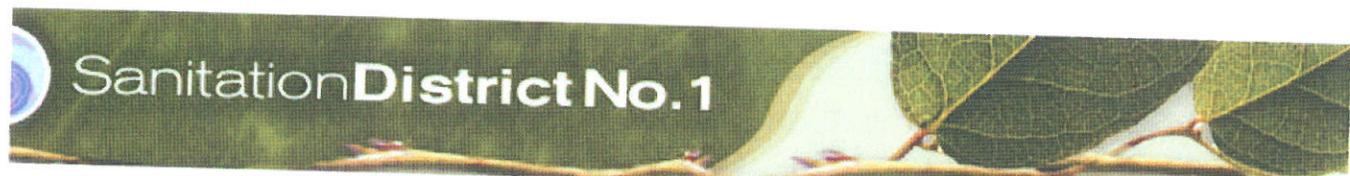
Sanitation District No. 1 has posted signs alerting the public to avoid physical contact with the overflow, and we will clean the the area as quickly as possible.

If you, your family, or 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.

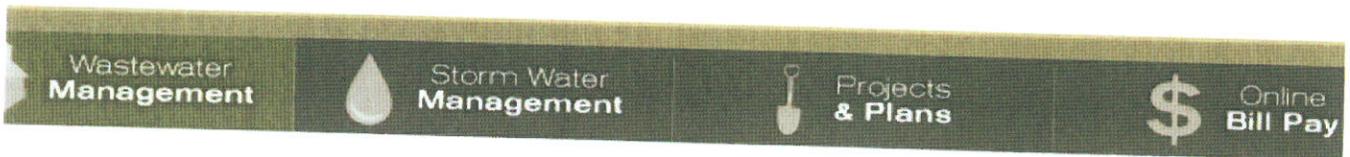
We will remove the warning signs from the impacted area after our cleanup efforts are complete. This will be an indication to you to return to normal.

Any questions please call 578-7450 or e-mail
[@www.sd1.org](mailto:www.sd1.org)

APPENDIX M



D1 Customer Service Developers Education Public Service Park Documents & Reports Forms & Permits



Check Your Local
Forecast and Data



Overflow Notification

Wet Weather Overflow Public Notification Program

SD1 has launched a program to notify Northern Kentucky residents when existing or predicted weather conditions could potentially cause sewer overflows. The overflow advisories will be issued by email and recorded on SD1's new Information Hotline.



Program Objectives:

- Notify interested parties when sewer overflows are likely to occur
- Educate the public about potential health hazards and water quality impacts associated with sewer overflows
- Enable citizens to take appropriate steps to protect themselves and their families from such hazards

When will the advisories be issued?

Under this program, SD1 will issue an advisory when a rainfall of .25 inch or more is predicted or recorded for anywhere in SD1's service area, including Boone, Campbell and Kenton Counties. An advisory will also be issued when the Ohio River level exceeds 38 feet. Advisories will remain in effect for 72 hours after rainfall and 72 hours after river levels have fallen below 38 feet.

To protect yourself and your family from health concerns associated with sewer overflows, avoid contact with water near and around overflows. This includes activities such as boating, wading, fishing and swimming.

How do I receive a Wet Weather Overflow Advisory?

By Phone - Call the SD1 Information Hotline at 859-547-1316

CSO Signage

In order to inform the public of the location of CSOs and the affected waterways, SD1 has posted signs in the areas surrounding the outfalls. The signs provide a notice that this is a "CSO Area," along with a telephone number that can be used to obtain additional information or to report a spill or unusual activity.

Being posted as a "CSO Area" means:



means.

- A combined sewer overflow is located nearby and these waters may be polluted during and immediately following rainfall
- During rainfall, untreated wastewater, along with large amounts of storm water, may discharge directly or indirectly into the receiving streams
- During rainfall, public health and water quality could potentially be impacted due to overflows

**Northern Kentucky's and Cincinnati's water supply intakes are upstream of SD1's CSOs, and therefore are not impacted when overflows occur.

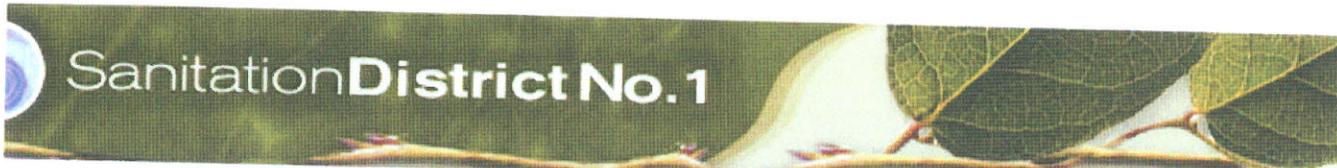
Click [here](#) to view a map showing the locations of CSO outfalls in Northern Kentucky.

To obtain additional information regarding CSOs in Northern Kentucky or report a spill or unusual activity, please email SD1 at info@sd1.org or submit an on-line Trouble Call form by clicking [here](#). You can also call the Dry Creek Wastewater Treatment Plant at 859-331-6674.

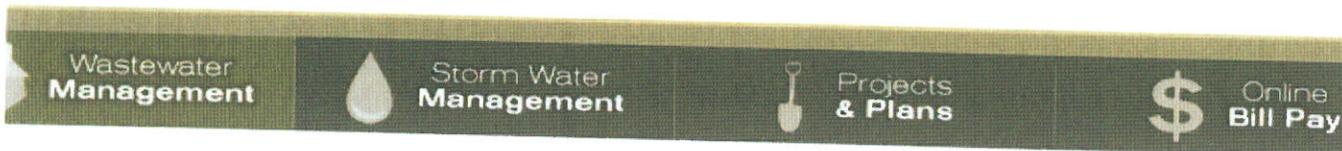
Click [here](#) for more information regarding sewer overflows.

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D1 Customer Service Developers Education Public Service Park Documents & Reports Forms & Permits



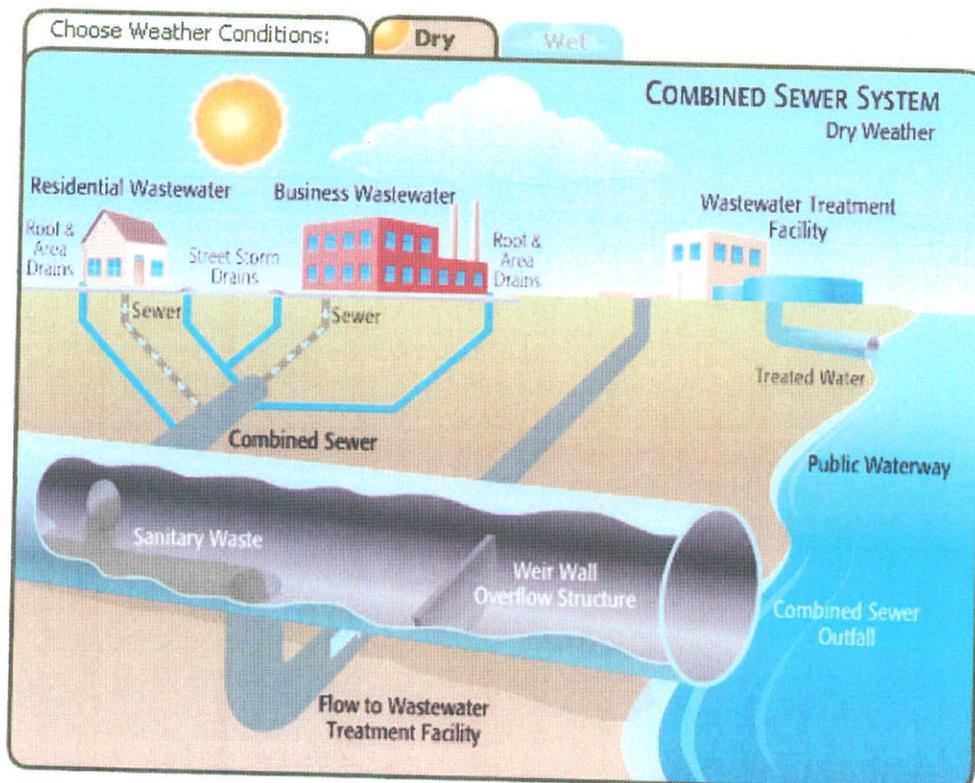
- Wastewater Management
- Water Services
- CSO Info
- Stormwater Management
- Low Notification
- Water Billing

CSO/SSO Info

What is a Combined Sewer System (CSS)?

A combined sewer system is a wastewater collection system that is specifically designed to collect and convey sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater) and storm water through a single pipe. During normal dry weather conditions, sanitary wastes collected in the combined sewer system are conveyed to a wastewater treatment plant. During rain events or snowmelt, these systems are designed to overflow when the collection system capacity is exceeded, resulting in a combined sewer overflow (CSO) that discharges directly to surface waters such as rivers, streams, estuaries, and coastal waters.

Check Your Local Forecast and Data

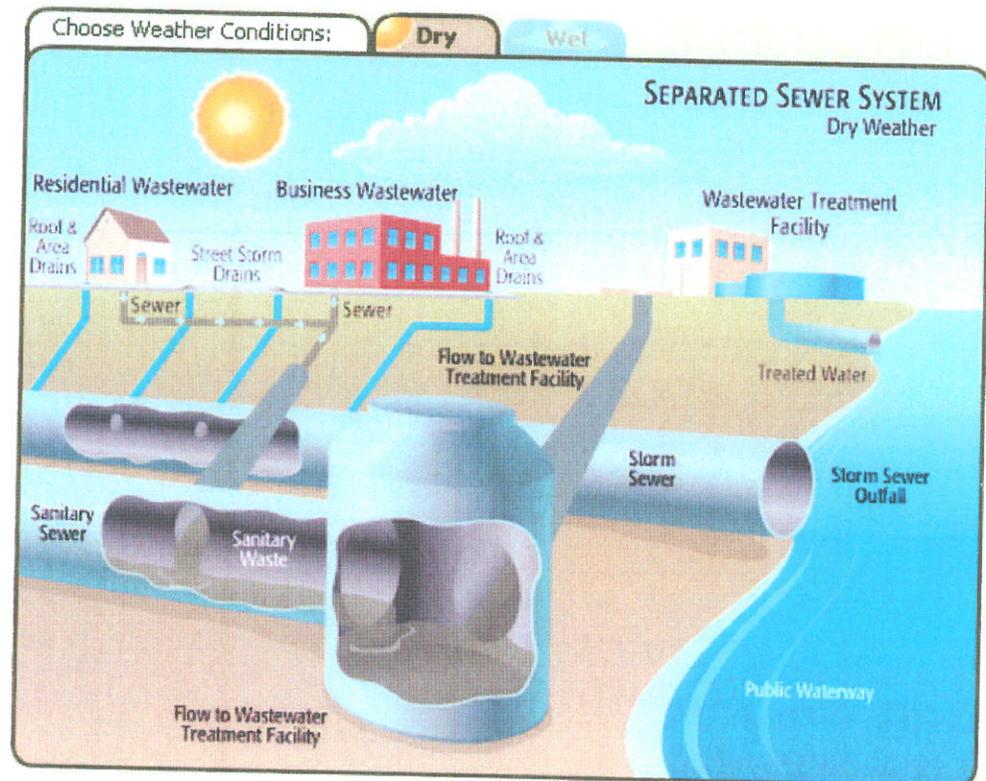


History of CSOs

Combined sewer systems were among the earliest sewer systems constructed in the United States and were built until the first part of the 20th century. Hundreds of communities built combined sewers because they were a cost-effective way to provide sewer service and improve drainage. The overflow points were designed to act as relief points for the excess flow in the sewers, thereby reducing the potential for sewer backups and flooding during rain events. When these sewer systems were first constructed, these overflows were considered an acceptable way to manage excess water.

What is an Separate Sanitary Sewer System (SSS)?

A separate sanitary sewer system is a wastewater collection system, owned by a city or municipality that is specifically designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater). In such systems, storm water is conveyed through a separate set of pipes. These systems are not designed to collect large amounts of storm water run off from precipitation events. A sanitary sewer overflow (SSO) can occur when collect system capacity is exceeded due to wet weather, when normal dry weather flow is blocked for any of several reasons, or when mechanical failures prevent the system from proper operation.



For the last 40 years, the sewers constructed in Northern Kentucky have been separate sewer systems. SSOs have a variety of causes including:

- Blockages from fats, oils, and grease
- Blockages from roots
- Blockages from vandalism
- Line breaks in aging and deteriorating systems
- Public and private storm water connections that allow excess rain water to enter directly into separate sanitary sewer lines

Are Overflows Common?

Overflows are complex and costly issues that affect not only Northern Kentucky, but also many other communities throughout the U.S.

Today, there are 746 communities with combined sewer systems with a total of 9,348 CSO outfalls that are regulated by federal permits (NPDES). EPA estimates that about 850 billion gallons of untreated wastewater



and storm water are released through CSOs each year in the U.S.



Unfortunately, SSOs are a chronic and growing problem in many parts of the country. EPA estimates that between 23,000 and 75,000 SSOs occur each year throughout the United States, resulting in the releases of between 3 billion and 10 billion gallons of untreated wastewater.

When do sewer overflows occur?

Overflows should only occur during wet weather. Whether an overflow occurs and the magnitude is depends on many factors, including volume, rainfall intensity, if the ground is saturated or dry, and on the natural variability of rainfall.

If you observe an overflow, especially during dry weather, please contact SD1 at 331-6674.

What will it cost to control overflows?

The EPA estimates that \$88 billion and \$50.6 billion is needed over the next 20 years to control SSOs and CSOs respectively throughout the nation.

What impacts do CSOs and SSOs have?

Because CSOs contain raw sewage and large volumes of storm water, as well as contribute pathogens, solids, debris, and toxic pollutants to receiving waters, they create public health and water quality concerns. SSOs can also create public health and environmental concerns because they contain raw sewage and can occur on land and in public spaces.

Pollutant concentrations in CSOs and SSOs vary substantially, not only from community to community and event to event, but also within a given event. It is important to note that waterbodies also receive pollutants of the types found in CSOs and SSOs from other sources such as storm water runoff.

How to protect yourself from overflows

To protect yourself and family members from health concerns associated with sewer overflows, SD1 recommends avoiding contact with water near discharges both during and following rain events for at least 72 hours. This includes activities such as boating, wading, fishing and swimming. In addition, when Ohio River levels reach 38 feet, officials warn against coming in contact with the water. Before you recreate near local waterways, be sure to check the water quality data – even if it is not immediately following a rain event. Click [here](#) to view water quality data.

What actions should be taken to reduce the impacts of overflows?

The watershed approach is central to water quality assessments, and the identification of control strategies must include all sources of pollution affecting water quality. Better integration of programs and activities at the watershed level will provide economic benefits on a scale with respect to monitoring and reporting, protecting water quality and reducing the impacts of CSOs and SSOs.

Sanitation District No. 1 is developing an Adaptive Watershed Management Plan to address sewer overflows in Northern Kentucky. This approach will also aid in taking a holistic approach to addressing issues such as pollution in storm water runoff, non-point source pollution and sanitary sewer needs. To learn more about Watershed Management, click [here](#).

What can you do to help?

- Notify SD1 of overflow events in your neighborhood by calling 331-6674. They can assist in efforts to prioritize improvement projects for the region
- Don't pour household products such as cleansers, beauty products, medicine and paint down the drain or into storm drains
- Don't pour auto fluids such as motor oil and antifreeze down the drain or into

storm drains

- Fix leaks from vehicles
- Don't discard lawn care products into the drain or into storm drains
- For information on proper disposal of hazardous wastes, call the Household Hazardous Waste Hotline 859-341-4151
- Take cars to a commercial car wash where the water is treated before being returned to the environment
- If you wash your own car, use biodegradable soap over grass or gravel
- Keep sidewalks and streets free of litter and debris and never sweep leaves grass clippings into street storm drains
- Volunteer for SD1's storm drain marking program, Save-a-Stream, Block-by-Block. To learn more about this educational program, click [here](#).

Where can I get more information regarding overflows?

- Call SD1's Information Hotline at 859-547-1317
- **[EPA's Report to Congress on Impacts and Control of Combined Sewer Overflows and Sanitary Sewer Overflows](#)**
- **[The EPA's CSO Information Site](#)**
- **[The CSO Partnership](#)**
- **[Kentucky Division of Water's CSO Information Site](#)**
- **[The Ohio River Valley Water Sanitation Commission \(ORSANCO\)](#)**
- **[The Water Environment Federation \(WEF\)](#)**
- **[National Association of Clean Water Agencies \(NACWA\)](#)**

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APPENDIX N

Sanitary Sewer Overflow Response Training

Section 1 Training

Sanitation District #1's employees are trained in various levels regarding Sewer Overflow Response Plan (SORP) procedures. All employees will be trained to the awareness level. The District is incorporating SORP awareness training into the New Employee Orientation process. The District's Regulatory Compliance department supervises and administers the training.

Section 1.2 Levels of Training

The district has determined that some employees need only basic training, but others who will be involved in the execution of the SORP will need more intense training. The district has established two levels of training awareness and operations.

- **Awareness level** – This is the lowest level of training provided to District Employees. This training includes the purpose, objectives, and scope of the SORP. Awareness level training will include the following modules.
 1. SORP Overview
 2. How Sanitation District # 1 becomes aware of an Overflow

- **Operations level** – This level of training will be provided to field personnel that will be actively participating in sewer overflow response. This training will include the purpose, objectives, scope and field demonstrations. These employees will be asked to confirm their knowledge by written test and field demonstrations. Operations Level training will include the following modules.
 1. SORP Overview
 2. How Sanitation District # 1 becomes aware of an Overflow
 3. Resources
 4. Public Notification
 5. Initial Response
 6. Mitigation
 7. Documentation
 8. Clean-up of effected areas
 9. Follow -up

Section 1.3 Training Modules

The District will develop a trainer's guide. The guide will contain information on what each module shall cover and the materials needed to conduct the training. A workbook will also be developed with each training module included. This

Work book will be placed in each employee handbook. Listed below is each module and what it contains.

1. **SORP Overview** - This module will summarize the SORP
 - How implementing the SORP will protect the public, the environment and meet regulatory requirements;
 - How the SORP complies with the Consent Decree;
 - Key definitions;
 - Regulatory Reporting;
 - Review of the SORP program.

2. **How Overflows are Reported** – This module will discuss the ways that SD#1 is notified of overflows and what information is needed for a overflow response.
 - Identify who may report overflows;
 - Establishing and maintaining communication with person reporting the overflow;
 - Actions to follow when an overflow is reported;
 - Procedures to follow when an employee discovers an overflow.

3. **SORP Response and Resources** – This module will ready operations personnel to respond to overflows by describing who and what will be involved with an overflow response.
 - Communication to responders once notification has been made;
 - Actions of the first responder;
 - How to evaluate the resources needed for response;
 - Work orders and tracking.

4. **Public Notification** – This module will train employees methods of informing the public of overflows.
 - Methods used to notify the public of overflows;
 - Methods used to notify Regulatory and Health Agencies;
 - What to communicate with the public about overflows;
 - Examples of notification methods.

5. **Initial Response** – This module will discuss investigation, verification and assessment of an overflow. It will also cover how and when to set up control zones.
 - How to confirm an overflow has occurred;
 - Different types of overflows;
 - What to do if a hazardous material is present;
 - How to determine the cause and location of an overflow;
 - How to determine the impacted area;
 - How to determine the extent of impact;
 - Volume estimation techniques and calculations;
 - The process for investigating basement backups to determine if it was caused by a private property issue or mainline defect/blockage;

- Components of a proper control zone, who sets it up, when it can be removed and proper placement.
 - Different Types of control zones and sight specific control zones.
 - How to determine what resources will be needed for mitigation and clean-up.
6. **Mitigation of Condition** – This module discusses the procedures used to initiate and complete measures required to stop, and contain overflows or different types.
- Discuss the purpose and definition of containment;
 - When and how to contain an overflow;
 - Containment methods;
 - Discuss the purpose and definition of filtration;
 - When and how to use filtration;
 - Filtration methods;
 - Discuss the purpose and definition of mitigation;
 - When and how to mitigate overflows;
 - Mitigation techniques;
 - Abatement resolution activities and repairs that can be used;
 - Resources that can be used for containment, filtration and mitigation techniques;
7. **Field Documentation** – This module will explain what information will need to be documented in the field so that it can be reported both to the DOW and to Sanitation District #1.
- Data collection techniques, such as photography interviews and observation;
 - Review the regulatory reporting requirements;
 - Discuss the difference between an overflow and an unauthorized discharge;
 - Review the report that is sent to DOW and the quarterly and annual report sent to DOW;
 - Discuss what information is required for the discharge report and the importance of accurate and timely entry into GBA.
8. **Clean-up of Affected Areas** – This module will explain how to disinfect and deodorize an area after an overflow.
- Minimum levels of clean-up required;
 - Types of clean-up and disinfection practices;
 - Proper disposal;
 - Desired end results;
 - How to deal with odors;
 - Safety concerns;
 - Review of the insurance claim process.

Section 2 Training and Update Schedule

Confidential Preliminary Working Draft

By December 31, 2007, the District will have developed the training program and completed training for all employees to the appropriate level of training needed. After the initial training, employees that are required to have operations level training will receive yearly refresher training. Employees that are only required to have awareness training will attend yearly SORP refresher training. Any updates that are made to the SORP will be conveyed to employees through weekly meetings and the reflected in the annual refresher training.

Section 3 Training Tracker

All training activities will be documented in the Districts Training Tracker program. This will ensure that all employees have received the level of training that is needed to comply with the SORP.