

Sanitation District No. 1  
December 31, 2013

# Capacity, Management, Operations, & Maintenance (CMOM) FY 2013 Annual Report





December 31, 2013

Director of the Division of Enforcement  
Department for Environmental Protection  
300 Fair Oaks Lane  
Frankfort, KY 40601

Chief, Environmental Enforcement Section  
Environmental and Natural Resources Division  
U.S. Department of Justice  
601 D street NW  
Washington, DC 20005  
DOJ Case No. 90-5-1-1-08591

Chief, Water Program Enforcement Branch  
Water Management Division  
U.S. Environmental Protection Agency, Region 4  
Atlanta Federal Center  
61 Forsyth Street, S.W.  
Atlanta, Georgia 30303

Re: Consent Decree Case No. 2:05-cv-00199-WOB

To Whom It May Concern:

Pursuant to the above-referenced Consent Decree, Sanitation District No. 1 (SD1) is required to submit annual reports on the implementation of its Capacity, Management, Operations, and Maintenance (CMOM) programs. These reports are due no later than December 31 each year.

The Consent Decree was entered on April 18, 2007 and required SD1 to submit four separate CMOM documents within the first year – the Grease Control Program, the Sewer Overflow Response Plan (SORP), the CMOM Self-assessment, and the Pump Station Operation Plan for Backup Power. Each of these submittals has received regulatory approval. Updates to these programs are now included in the CMOM Annual Report, as it is not required for the program updates to be submitted as separate documents.

A certification as required by the Consent Decree is also enclosed (Consent Decree paragraph 38).

To the best of my knowledge and belief, the enclosed report is true, accurate, and complete, and further demonstrates SD1's commitment to the mission of protecting and enhancing the water resources and quality of life in Northern Kentucky.

If you have any questions or concerns, do not hesitate to contact me at 859-578-7465 or by email at [drager@sd1.org](mailto:drager@sd1.org).

Best regards,

A handwritten signature in black ink, appearing to read "David E. Rager", with a large, stylized initial "D" and "R".

David E. Rager  
Executive Director

DER/wck  
Enclosures

**CERTIFICATION**

Capacity, Management, Operations, & Maintenance (CMOM)  
FY 2013 Annual Report  
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.

  
\_\_\_\_\_  
David E. Rager  
Executive Director

12/20/13  
\_\_\_\_\_  
Date

COMMONWEALTH OF KENTUCKY

COUNTY OF Kenton )ss.

The foregoing instrument was acknowledged before me this 20 day of December, 2013 by David E. Rager, Executive Director of Sanitation District. No. 1.

  
\_\_\_\_\_  
NOTARY PUBLIC  
Kenton County, Kentucky

My commission expires: 7/6/2014

Lora Marie Bonno  
Notary Public  
Kentucky, State at Large  
Comm. Exp. 07-06-14  
Notary ID 423237

# **CAPACITY, MANAGEMENT, OPERATIONS, AND MAINTENANCE FY 2013 ANNUAL REPORT**

December 31, 2013



**Sanitation District No. 1**

1045 Eaton Drive

Ft. Wright, KY 41017

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## LIST OF ACRONYMS AND ABBREVIATIONS

Cabinet	Kentucky Energy and Environment Cabinet
CCTV	Closed Circuit Television
CIP	Capital Improvement Program
CMOM	Capacity, Management, Operations, and Maintenance
CSAP	Continuous Sewer Assessment Program
CSO	Combined Sewer Overflow
ERP	Emergency Response Plan
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
FY	Fiscal Year
GCE	Grease Control Equipment
GIS	Geographic Information Systems
I/I	Inflow and Infiltration
IMS	Information Management System
IT	Information Technology
NOV	Notice of Violation
O&M	Operations & Maintenance
OSHA	Occupational Safety and Health Administration
ORSANCO	Ohio River Valley Water Sanitation Commission
PM	Preventive Maintenance
SCI	Stream Condition Index
SD1	Sanitation District No. 1
SORP	Sewer Overflow Response Plan
SSES	Sanitary Sewer Evaluation Survey
SSO	Sanitary Sewer Overflow
WRWRF	Western Regional Water Reclamation Facility

## **SECTION 1. INTRODUCTION**

### **1.1 Overview and Report Period**

On April 18, 2007, Sanitation District No. 1 (SD1) entered into a Consent Decree with the U.S. Environmental Protection Agency and the Kentucky Energy and Environment Cabinet (Cabinet) to address sanitary sewer overflows (SSOs) and combined sewer overflows (CSOs) in an effort to improve water quality throughout SD1's service area. The Consent Decree requires that SD1 continue the implementation of formal Capacity, Management, Operations, and Maintenance (CMOM) programs. SD1's CMOM programs are designed to manage the collection systems' assets and operations in a manner that maximizes efficiency and reduces the potential for overflow occurrences. Proper planning and management of CMOM programs can result in a reduction of the number, frequency, and volume of SSOs and CSOs.

Pursuant to the Consent Decree, SD1 is required to submit annual reports on its implementation of the CMOM programs. This report describes implementation of SD1's CMOM programs during Fiscal Year (FY) 2013, which began on July 1, 2012 and ended on June 30, 2013.

### **1.2 CMOM Program Structure**

SD1 has been performing CMOM activities for many years. In 2007, these activities were structured into formal CMOM programs during the self-assessment. During the self-assessment process, a written purpose, goals, and recommended improvements were established for each program. SD1 currently has 34 CMOM programs, which are identified in Table 1.1. Section 2 of this Annual Report provides an update on the implementation of these programs.

**Table 1.1 CMOM Program Activities**

<b>Management Programs</b>	<b>Operations Programs</b>
• Organizational Structure	• Emergency Preparedness & Response
• Communication & Customer Service	• Safety
• Legal Authority	• Budgeting
• Acquisition Considerations	• Engineering
• Information Management System (IMS)	• Call Before You Dig
• Training	• Water Quality Monitoring
• System Mapping	• Compliance
• SSO Reporting & Notification	• Mobile Waste Haulers
<b>Maintenance Programs</b>	• Pump Station Operations
• Manhole Repairs	• Pump Station Emergencies
• Rehabilitation & Replacement	• Pump Station Force Mains PM
• Mainline Sewer Repairs	• Odor & Corrosion Control
• Sewer Cleaning	• Continuous Sewer Assessment
• Equipment & Tools Maintenance	• Smoke & Dye Testing
• Pump Station Maintenance	• Flow Monitoring
• Maintenance of Rights-of-way	• CCTV Inspection
<b>Capacity Programs</b>	• Manhole Inspections
• Capacity Assessment & Assurance	
• New Connection Tap-In	

### 1.3 Collection System's Major Components

SD1's service area currently covers approximately 239 square miles, and serves approximately 102,378 sanitary accounts and approximately 94,765 storm water accounts. SD1 treats flow from a collection system that is comprised of, approximately:

- 41,050 SD1 owned manholes
- 3,900 SD1 owned catch basins and inlets in the combined sewer system
- 70 gate structures
- 1,575 miles of SD1 owned and operated gravity sewer lines and force mains
- 140 miles of additional Florence owned sewer lines and force mains
- 75 miles of additional privately owned sewer lines
- 400 miles of SD1 owned and operated separate storm water lines

- 135 pump stations (11 of which are owned by the City of Walton and operated by SD1 through a contract; 2 of which are owned by the Airport and operated by SD1 through a contract; 2 of which are associated with treatment plants)
- 15 flood pump stations
- 8 small wastewater treatment plants (4 of which are owned by separate entities and operated under contract by SD1)
- 3 regional water reclamation facilities

SD1'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 wastewater treatment plant. The service area consists of both combined and separate systems. The combined sewers are located primarily in the river cities. Maps of the sanitary and storm service areas and the major components can be found in Appendix A.

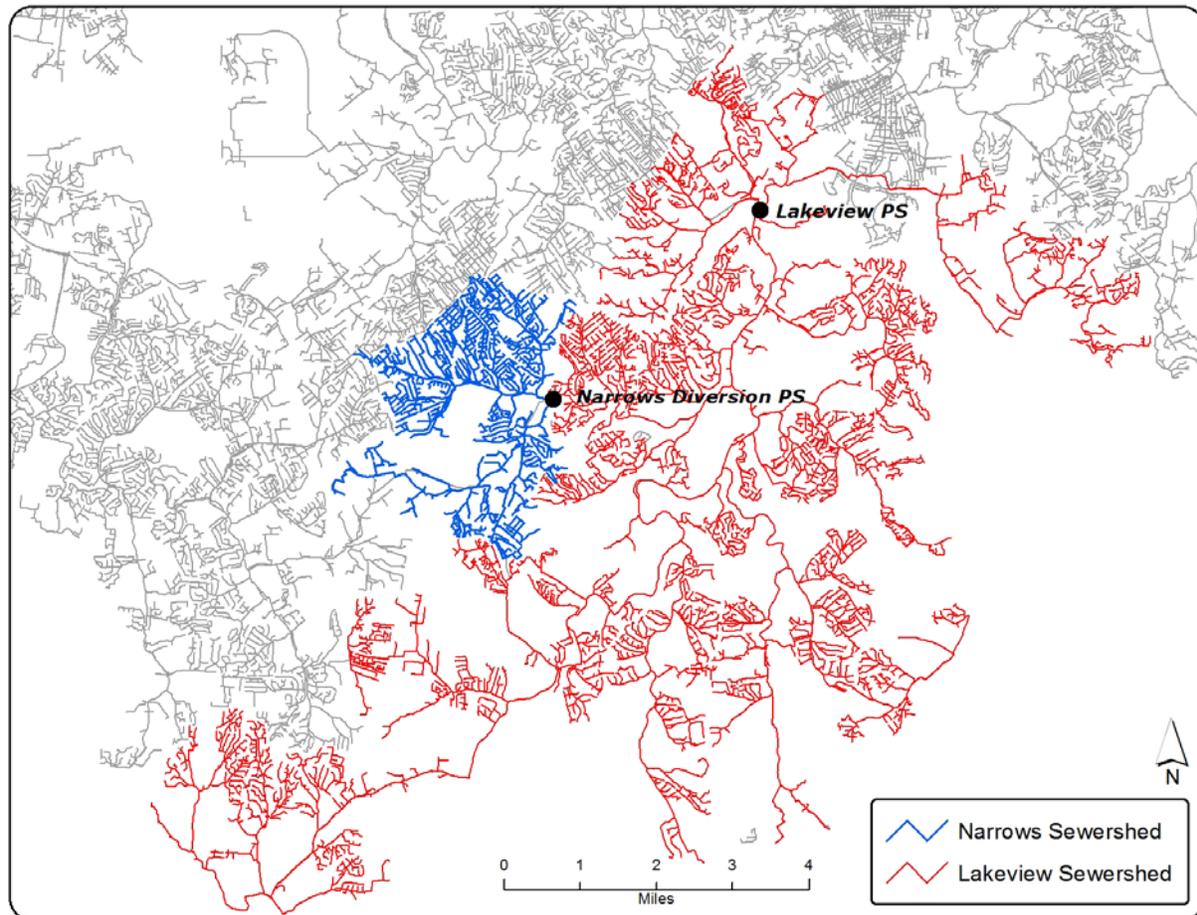
### **1.3.1 Narrows Road Diversion Pump Station**

The Western Regional Water Reclamation Facility (WRWRF) initially treated approximately three to four million gallons of wastewater per day, when it first became operational in early 2012. This initial influent primarily came from tributary areas of Boone County that were associated with the elimination of ten SD1-owned pump stations and three Florence-owned pump stations.

At the beginning of FY 2013, an additional three to four million gallons per day of dry-weather flow was diverted to WRWRF from the Lakeview sewershed, with the activation of the Narrows Road Diversion Pump Station. Narrows Road Diversion Pump Station also has the capacity to divert approximately 17 million gallons per day of wet-weather flow to WRWRF.

Figure 1.1 illustrates the portion of the SD1 collection system (blue) that has been diverted away from the Lakeview Pump Station sewershed (red). Approximately 17 percent of the Lakeview Pump Station sewershed was redirected to WRWRF with the activation of the Narrows Road Diversion Pump Station in FY 2013.

**Figure 1.1 Narrows Road Diversion PS Sewershed**



## **SECTION 2. CMOM PROGRAM HIGHLIGHTS**

This section provides an update on the implementation of SD1’s CMOM programs and Section 5 provides an update the remaining tasks to be completed as part of SD1’s original CMOM self-assessment. In addition, the Consent Decree required SD1 to specifically establish a Grease Control Program and Pump Station Operation Plan for Backup Power. These specific CMOM programs are described in Sections 3 and 4.

## 2.1 Budgeting

The purpose of SD1's Budgeting Program is to enable all operating departments to execute SD1's mission and vision in a fiscally responsible manner and provide cost-effective services to ratepayers. The Budgeting Program provides SD1 with a clear understanding of the organization's financial needs and obligations, which results in the ability to adequately manage debt service and plan for future needs. This program also helps SD1 personnel categorize expenses and properly manage assets and infrastructure.

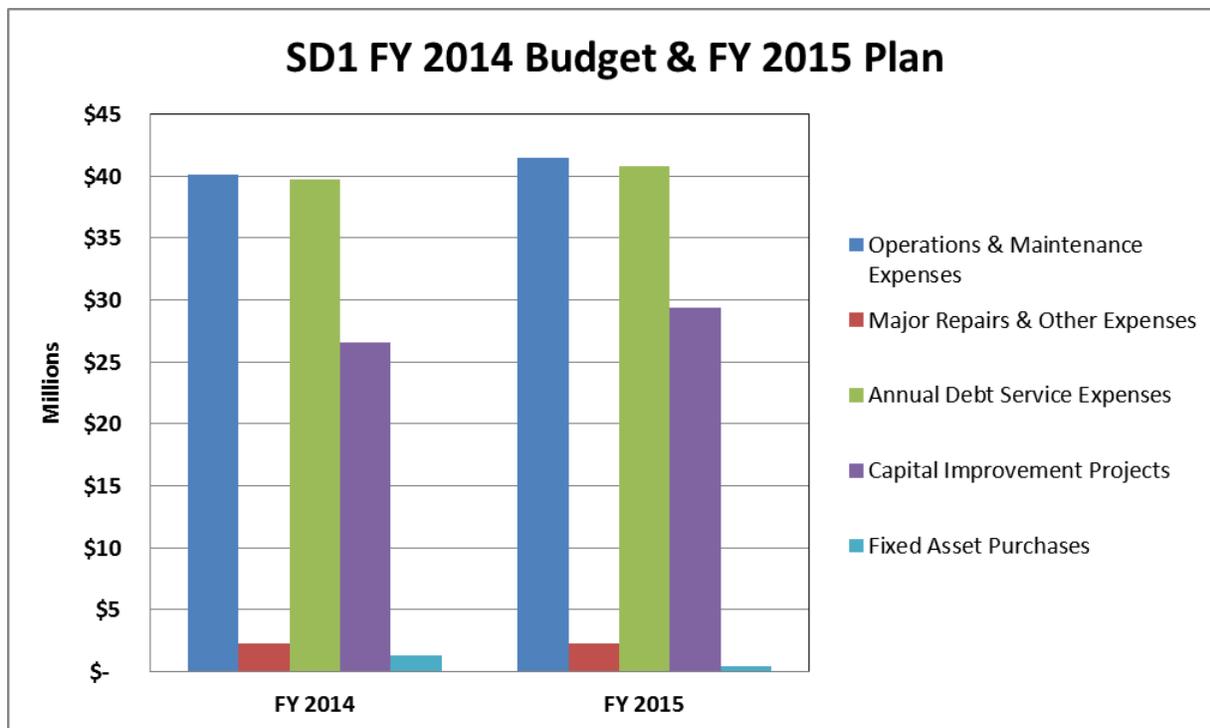
### 2.1.1 Capital and Operations & Maintenance Expenditures

The audited capital expenditures for FY 2013 totaled approximately \$33.9 million, and the audited O&M expenditures for FY 2013 totaled approximately \$36.5 million. As required in the Consent Decree, SD1 has developed Watershed Plans for improvement projects to be implemented over the next several years, which will impact capital spending. The total capital spending associated with all project work over the next two years is approximately \$55.9 million, as demonstrated in Table 2.1. Figure 2.1 represents SD1's anticipated debt service, O&M, and capital improvement program (CIP) expenses over the two five years.

**Table 2.1 Two-Year CIP Budget (FY 2014 – FY 2015)**

<b>Fiscal Year</b>	<b>Projected Capital Spending</b>
2014	\$26,600,477
2015	\$29,358,000
<b>Total</b>	<b>\$55,958,477</b>

**Figure 2.1 SD1 Estimated Expenses: Annual Debt Service, O&M, and CIP  
(FY 2014 through FY 2015)**



**Low Income Assistance**

As an additional effort to help reduce the financial burden placed on ratepayers, SD1 has partnered with a local social service agency to develop a Low Income Assistance Pilot Program. From FY 2010 to FY 2013 SD1 established a program that provided families at or below 125% of the Federal Poverty Guidelines, the opportunity to receive a 25% discount on sanitation service. Nearly 1,200 accounts have received assistance for at least one billing, for a total of \$153,866 in funds provided. Funds are no longer available for FY 2014, as the Low Income Assistance program is being reassessed.

**2.1.2 Alternate Sources of Funding**

Although SD1 receives adequate funding from its operating revenue sources to fund its O&M and debt service commitments, these sources do not provide sufficient funding to also support the CIP. SD1 is therefore required to borrow money from other sources. During FY 2013, user rates, fees, and other revenues made up approximately 80.6% of

the total funding sources, while borrowed money accounted for the remaining 19.4% of necessary funding sources to support the fiscal year budget.

### Clean Water State Revolving Loan Fund

The Kentucky Infrastructure Authority has provided SD1 more than \$418 million out of the Clean Water State Revolving Loan Fund program for capital improvement projects. During FY 2013, there were projects that were in various stages of design, easement acquisition, or construction. Some of the projects include:

- Ash Street Pump Station and Force Main Projects
- Church Street Combined Sewer Overflow Reduction Project
- Kentucky Aire Pump Station Elimination
- Lakeview Pump Station Improvements
- Lakeside Park Public and Private Source Inflow and Infiltration Removal and Sewer Rehabilitation
- Vernon Lane Public and Private Source Inflow and Infiltration Removal and Sewer Rehabilitation

Since 2004, the Kentucky Infrastructure Authority has funded 20 capital improvement projects saving more than \$120 million in interest costs when compared to traditional 30-year revenue bonds.

## **2.2 Capacity Assessment & Assurance**

The purpose of SD1's Capacity Assessment and Assurance Program is to determine the overall capacity of the collection, transmission, and treatment components of the system, identify areas that lack adequate capacity, and develop programs and solutions to provide sufficient capacity in these areas. This program provides staff with a holistic understanding of SD1's system's capacity, which allows for better management, design, and control of the system.

### **2.2.1 Field Inspections and Hydraulic Modeling**

During FY 2013, SD1's wet weather CSO investigation crew continued to perform routine inspections before and after rain events. SSO investigation crews also continued to perform routine inspections after rain events at prioritized recurring and

suspected SSO locations. The purpose of these routine inspections is to verify overflow activity, assess the cause of overflow, and initiate the proper procedures for overflow cleanup. This is part of SD1's ongoing effort to characterize, verify, and respond to overflows throughout the collection system, and ensure that they are appropriately categorized and prioritized for elimination. More information regarding inspection routes can be found in Section 2.6 Emergency Preparedness and Response. Proper overflow characterization from field inspections helps to reinforce the accuracy of the hydraulic model, which SD1 uses to improve its understanding of system capacity, and to identify the most appropriate and effective solutions for eliminating overflow.

SD1 developed a highly calibrated system-wide hydraulic model in 2008 to be used as an accurate planning tool for capital improvements, and to provide information about the current performance of SD1's collection system. To ensure that the hydraulic model continues to provide the most accurate information about the system's performance, SD1's Collections Systems – Operations Asset Maintenance crews perform routine inspections after rain events to verify suspected modeled overflows. The inspection routines, as well as targeted flow monitoring, help maintain an accurate hydraulic model capable of predicting various conditional impacts on an ever-changing system.

SD1's Collections Systems - Operations Asset Maintenance Department conducted a thorough review of historical CSO inspections, and made adjustments to dry-weather inspection routines, in FY 2013. In accordance with Chapter 6 of USEPA's CSO Guidance for Nine Minimum Controls, inspection schedules for diversion manholes (or regulating manholes) were adjusted to gain operational efficiencies, and to reallocate resources to other critical programs. SD1 has adhered to a weekly dry-weather inspection routine for approximately 140 CSO diversions for more than five years. The information gathered from five years of inspections and detailed hydraulic modeling has led SD1 to determine that only 36 diversions require the weekly dry-weather inspection routine. The remaining 104 diversions have been determined to be in good repair, are in locations that have adequate hydraulic capacity during dry weather, and have not historically been susceptible to dry-weather overflows. While USEPA's guidance suggests that such conditions may support a monthly dry-weather inspection schedule, SD1 has assigned the 104 diversions to a more aggressive bi-weekly dry-weather inspection schedule. Some diversions may eventually be moved to a monthly dry-weather inspection schedule, once the bi-weekly inspection schedule has been demonstrated to be sufficient.

SD1 conducted more than 8,200 CSO diversion inspections during FY 2013. Approximately 4,550 of the inspections were done within 48 hours of a wet-weather event that produced at least one half of an inch of rain. The remaining 3,650 inspections were done in dry-weather conditions.

### **2.2.2 Flow Monitoring and Hydraulic Modeling**

SD1's flow monitoring crew is involved in a number of data collection efforts in specific areas of the collection system to confirm model predictions, identify and confirm areas that are suspected to have high inflow and infiltration (I/I), and collect pre and post construction monitoring data in project areas. The map provided in Appendix B highlights the 68 locations that the crew monitored during the reporting period, which includes:

- 47 capacity monitoring sites
- 11 post-construction monitoring sites
- 6 sanitary sewer evaluation survey (SSES) monitoring sites
- 4 pre-construction monitoring sites

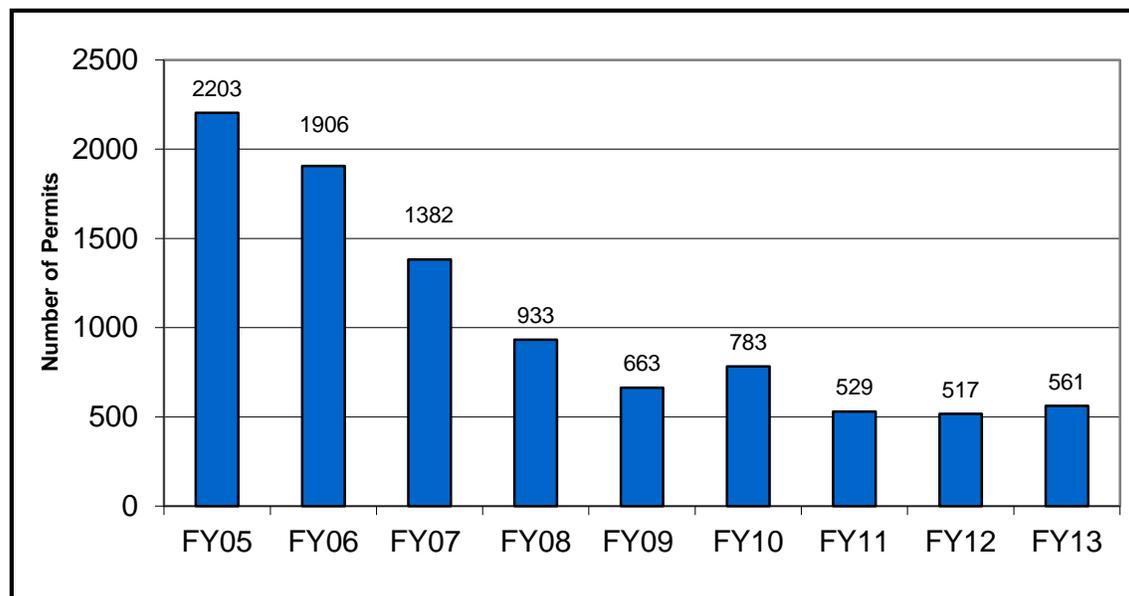
These meters are also currently being used to help update and refine SD1's system-wide hydraulic model. Section 2.2.1 describes how field inspections are being used to continually provide a "reality" check on the model. However, in some cases more detailed information regarding flows and system response to varying antecedent conditions is needed to refine the characterization in areas where specific capacity questions need to be answered, where more detail is needed for design purposes, or where system changes such as the Narrows Road Diversion Pump Station have altered the system enough to warrant a change in the model. In addition, SD1 continues its micromonitoring program to efficiently isolate sources of I/I. More detail is included in section 2.13.1.

### **2.2.3 Reservation of Capacity**

SD1's Rules and Regulations require developers to submit a written request for the reservation of sanitary sewer capacity, which is reviewed and considered for approval by SD1's Board of Directors or designee.

In addition, a building sewer capacity connection permit must be obtained from SD1. In FY 2013, SD1 issued 561 capacity connection permits. Figure 2.2 shows that the number of permits issued annually has declined sharply over the past nine years, and averages approximately 610 over the past five years.

**Figure 2.2 Capacity Connection Permits Issued  
(FY 2005 through FY 2013)**



## 2.3 Communication & Customer Service

The purpose of SD1's Communication & Customer Service Program is to inform and educate staff, external customers, and community groups about the services SD1 offers, including:

- Wastewater collection and treatment
- Storm water collection and management
- Flood protection and drainage
- Industrial monitoring
- Water quality monitoring
- Environmental education

SD1 has worked diligently to establish consistent messages and use unique ways of reaching target audiences through several internal and external communication

initiatives. Highlights of these efforts are included throughout the remainder of this section.

### **2.3.1 General Public Education Efforts**

SD1 engages and informs the general public on issues related its services, through various forms of media.

#### Articles

During this reporting period, SD1 initiatives have been featured in a number of publications, e-newsletters, blogs, and newspapers including:

- Sanitation District No.1 opens new wastewater treatment plant in Boone County (7/1/2012) – *Northern Kentucky Business Journal*
- Northern Kentucky Sanitation District No. 1 Public Service Park (7/9/2012) – *LandscapeOnline.com*
- SD1 facilities win awards for service (11/12/2012) – *The Cincinnati Enquirer*  
Tunnel wins engineering award (12/14/2012) – *The Cincinnati Enquirer*
- Shocked by water bill? How to lower it (5/8/2013) – *WCPO Channel 9 News*
- Sanitation District in KY faces challenges head on (5/17/2013) – *Environmental Protection Magazine*
- Bellevue Girl Scouts use SD1 grant for rain barrel project (6/10/2013) – *The Cincinnati Enquirer*
- Work continues on Vernon Lane Sewer Project (6/28/2013) – *NKY.com*

#### Educational Material and Publications

As a routine part of SD1's communication efforts, educational information is published in "What's Happening," a county-specific publication that is mailed to every resident in Boone, Campbell and Kenton counties. During FY 2013, SD1 had educational information published in seven different issues of "What's Happening."

In addition, SD1 has developed a number of informational and educational pieces during this reporting period, including:

- Storm Drain Marking Program (brochure)
- Conserve Water and Minimize Your SD1 Bill! (bill insert)
- Don't Drain Your Wallet: Tips for Safe Disposal (bill insert)
- Wastewater Treatment at SD1: Northern KY's Sewage Superhighway (booklet)

- Changes in Annual Water Usage Reflected on May Bill (bill insert)
- SD1's Storm Water Program: Solving the Storm Water Puzzle (booklet)
- Understanding Your Storm Sewer Lateral (fact sheet)
- Best Management Practices: Golf Courses (poster)
- I Am SD1 (<http://www.youtube.com/watch?v=9KpJpEzswOc#t=56>)
- SD1: Your Wastewater Utility (<http://www.youtube.com/watch?v=LsJz6xnzfRc>)

Refer to Appendix C, which highlights a few examples of these educational publications.

### **2.3.2 Website**

SD1's website continues to evolve each year. During this reporting period, interactive tours of the Eastern Regional Water Reclamation Facility and Western Regional Water Reclamation Facility were added to the website, as well as information regarding SD1's Regional Storm Water Management Program and the industrial services SD1 provides. Additional topics on the website include current capital projects, the benefits of rain barrels, tips for water conservation, FOG, rain event preparations, field trips, policies, and wet weather notifications. In addition, the home page features a series of flash stories that are updated regularly and highlight key messages. These messages included stories such as:

- Conserve water and minimize your SD1 bill (<http://www.sd1.org/NewsArticle.aspx?id=65>)
- SD1 recognized for excellence by National Association of Clean Water Agencies (<http://www.sd1.org/NewsArticle.aspx?id=67>)
- Filling a Swimming Pool Does Not Affect Sanitary Sewer Bills (<http://www.sd1.org/NewsArticle.aspx?id=75>)

The site also features a document library which allows users to search for documents by category or key word. A sample of the documents added and updated on the site, during this reporting cycle, include:

- The SD1 Timeline
- Continuous Monitoring Network

Examples of these documents can be found in Appendix C.

### 2.3.3 Customer Service Surveys

In the past, SD1 provided its customers paper surveys as a method of gaining feedback as to the quality of service they received during a construction project in their area or when they made a service request. To ensure a high response rate from the customers who received a survey to complete, the surveys were designed as door hangers with return address information and pre-paid postage on the backside. Although this method of feedback has been valuable in evaluating trouble call responses and capital improvement projects, SD1 identified the need for more comprehensive feedback on all of its services. Therefore, SD1 conducted an assessment of surveying methodologies and determined that regular phone surveys would provide a better way to measure performance in all areas.

This new approach to surveying helps gauge the overall understanding and support of SD1's mission and responsibilities, which will indicate where communication efforts with customers should be focused. The first round of phone surveys was conducted during FY 2013. SD1 anticipates conducting additional phone surveys every other year. The following are the key findings and the initial analysis of the first round.

#### Survey Background and Demographic Information

- 384 random telephone surveys were conducted (128 in each county) – included landlines and cell phones
- Survey conducted November 20, 2012 to December 21, 2012
- 89% of respondents have lived in the SD1 service area for past five years
- Four out of five respondents receive both wastewater and storm water service
- 85% of respondents own their home and 15% are renters
- 48% of respondents were male and 52% were female
- 60% of those surveyed did not have children under 18 living in the household

#### Key Finding: Satisfaction

- Boone County had the lowest satisfaction score of 6.7 – Kenton and Campbell Counties had a higher satisfaction score of 7.8
- Respondents tended to give SD1 a higher overall satisfaction score if they never experienced a problem with their service

- On a scale of 1-10, where one is completely dissatisfied and 10 is completely satisfied, respondents rated their overall satisfaction with SD1 as a 7.4
- Respondents who were aware of storm water problems being addressed tended to award higher overall satisfaction scores, while respondents who were aware of wastewater issues being addressed awarded lower overall satisfaction scores
- Factors that could help SD1 improve the overall satisfaction score: perception of value received for money paid, reasonableness of rates, and awareness of storm water problems being addressed

#### Key Finding: Awareness

- Less than half of all respondents know where their wastewater goes when it leaves their house (46%)
- More than half of respondents indicated they know where storm water flows when it leaves their property (59%)
- Some respondents were not entirely clear on the difference between storm water and wastewater services
- Some respondents put all water topics in the same category and did not know the difference between distribution and collection services
- Some respondents were confused, believing SD1 provides trash and recycling services

#### Key Finding: Rates

- When comparing all three counties combined, 35% of respondents felt rates are reasonable while 35% of respondents felt rates are unreasonable, and 30% had no opinion
- Boone County had the highest income level of the counties surveyed, but 48% of respondents indicated that rates are somewhat or very unreasonable – only 30% in Campbell County and 28% in Kenton County felt rates are somewhat or very unreasonable
- On average (70%) of respondents felt that SD1 has made good use of ratepayer dollars in the past
  - Boone County was less likely (59%) to feel that SD1 has made good use of dollars in the past when compared to the other two counties (Campbell at 76% and Kenton at 74%)
- On average, respondents would like to see wastewater rate dollars applied to replacing aging infrastructure (32%)

- Respondents as a whole would like to see storm water rate dollars applied to improving water quality in streams (27%) or replacing aging infrastructure (24%)
  - Boone County would rather see the funds applied to addressing flooding issues while Campbell and Kenton Counties would like funds applied to replacing aging infrastructure

#### Initial Customer Communication Strategies Resulting from Survey

- Look for opportunities to explain the services SD1 provides to prevent confusion with other public services/utilities
- Customers who receive a paper bill read the bill inserts enclosed, more than anticipated – 38% said they always read them, 30% said they sometimes read them – continue to use this method for communication
- Communication messages, including bill inserts, may need to be tailored per county – Boone County residents feel differently about SD1 rates, services, and use of dollars than the other two counties
- Communication messages should focus on explaining the value our customers receive for their dollar and the reasonableness of SD1 rates
- Communication messages should highlight more of the storm water work being done and less of the wastewater work being done
- When communicating about any wastewater work or how SD1 is spending ratepayers' dollars on wastewater work, the focus should be on communicating the need to replace aging infrastructure. Other priorities to communicate are maintaining existing infrastructure and addressing sewer overflows
- When communicating about any storm water work, SD1 will tailor the messages for the customer
- When communicating with entire service area the focus will be on what SD1 is doing to improve water quality
- When communicating with Boone County, the focus will be on addressing flooding
- When communicating with Campbell and Kenton Counties, the focus will be on replacing aging infrastructure

## **2.4 Compliance**

The purpose of SD1's Compliance Program is to identify and control residential, commercial, and industrial sources of flow that could adversely affect the collection

system. This program encompasses both the Industrial Pretreatment Program and Grease Control Program (see Section 3 for an update on SD1's Grease Control Program). This program meets the Clean Water Act pretreatment regulations and complies with the National Pollution Discharge Elimination System permit.

#### **2.4.1 Permitting**

The Compliance Program provides the authoritative measures necessary to permit and monitor discharges from commercial and industrial users that may cause corrosion or blockages in the collection system. SD1 ended FY 2013 with a total of 54 permitted Significant Industrial Users in its collection system. Two new permits were issued during FY 2013 for Manga-Tech Manufacturing and Angstrom Technologies.

SD1 approved one short-term specialty discharge for a gas station, during FY 2013.

#### **2.4.2 Monitoring & Enforcement**

The purpose of the Industrial Pretreatment Monitoring Program is to monitor discharges from industrial users throughout the service area to ensure compliance with Article 5 of SD1's Sanitary Rules and Regulations and protect SD1's sanitary sewer system, treatment plants, employees, and the receiving waters. All permitted industries are inspected annually and monitored semi-annually, with additional inspection and sampling performed as needed. During FY 2013, a total of 54 inspections were conducted.

SD1 has an Enforcement Response Plan in place to address each violation. Typically, the first Notice of Violation issued is verbal (and documented in a computerized program management system). The second violation is written. Each subsequent violation includes a fine. Fines can range anywhere from \$500 to \$1000 depending upon the violation. Most issues are resolved before escalating to fines. If problems persist, an industry is put on a compliance schedule. During FY 2013, Notices of Violation were issued 62 times, consisting of 8 verbal notices, 25 written notices with no fine, and 29 written notices with fines totaling \$23,250. Refer to Appendix D for a summary report describing these violations in more detail.

## 2.5 Continuous Sewer Assessment

The purpose of the Continuous Sewer Assessment program (CSAP) is to provide a proactive and coordinated asset management-based approach to assessing the condition and life cycle of SD1's infrastructure and managing a cost-effective rehabilitation/replacement of the system. Implementation of this program has enabled SD1 to more effectively and proactively prioritize and implement system inspection, cleaning, and rehabilitation/replacement of its assets.

The CSAP is comprised of the following six specific O&M activities that work in conjunction to assess and maintain the collection system:

- Interceptor Program – targets the maintenance and condition assessment of critical main trunk and interceptor sewers
- Large Diameter Sewer Assessment Program – focuses on the maintenance and condition assessment of sewers in the combined sewer system with pipes typically 15-inches and larger in diameter that have a high consequence of failure
- Manhole Inspection Program – assesses manholes throughout the collection system to determine the extent of structural defects, signs of sewer surcharge, and risk of I/I
- Preventive O&M Program – prioritizes the condition assessment, maintenance and repair/rehabilitation of the collection system to proactively prevent system failure that can cause overflows
- SSES Program – identifies and assesses the sources of I/I throughout the collection system
- Trouble Call Program – provides response to calls from customers who suspect problems related to the sanitary sewer service

Appropriate inspection technologies such as flow monitoring, closed circuit television (CCTV), smoke & dye testing, sonar, and visual inspection are used in the assessment phase of the O&M programs. CSAP classifies pipes by using the Sewer Condition Risk Evaluation Analysis Model™ (SCREAM) to generate structural and maintenance scores for each pipe inspected. The structural and maintenance scores then identify appropriate schedules for recommended next actions such as re-inspecting, cleaning, repair, or complete rehabilitation or replacement.

Together, the activities of each O&M program ensure that SD1 is meeting the overall objectives of the CSAP as demonstrated by the program process diagram in Appendix E. The remaining portions of this section highlight the collective progress of the six O&M programs in meeting the performance goals and projected targets of the overall CSAP. The data provided for previous years has been updated based on improvements in Lucity recordkeeping over the past fiscal year.

### 2.5.1 Collection System Condition Assessment

#### Sewer Inspections

Table 2.2 outlines the amount of the system that has been assessed since the onset of the CSAP, through the end of the current reporting period.

**Table 2.2 Sewer Inspection Footage**

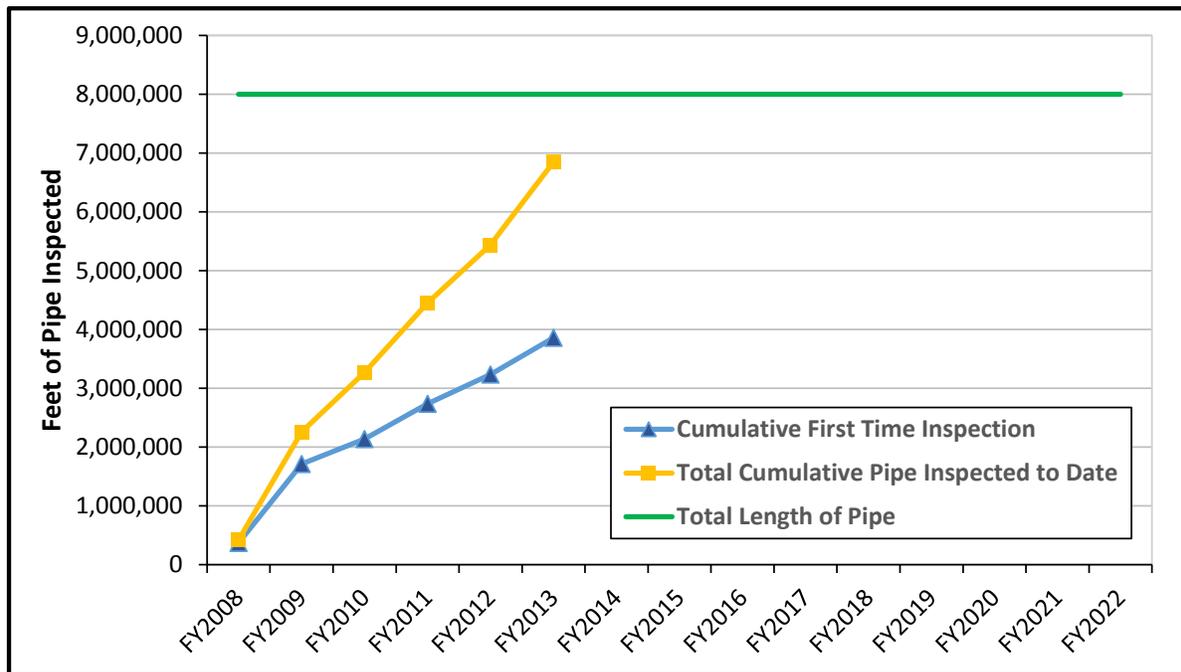
	<b>Initial Inspection Footage</b>	<b>Follow-Up Inspection Footage</b>	<b>Total Cumulative Footage</b>
<b>FY 2008 (Jan-June)</b>	374,068	46,898	420,966
<b>FY 2009</b>	1,340,874	498,113	1,838,987
<b>FY 2010</b>	421,130	589,519	1,010,649
<b>FY 2011</b>	600,306	583,389	1,183,695
<b>FY 2012</b>	501,160	483,494	984,654
<b>FY 2013</b>	622,585	788,311	1,410,896
<b>Total To Date</b>	<b>3,860,123</b> (49% of system)	<b>2,989,815</b>	<b>6,849,847</b>

The above table shows the initial and follow-up inspection footages over the first six years of the CSAP. Initial inspections reflect the amount of the system that has been inspected for the first time based on a prioritization of assets. Follow-up inspections are for pipes that have been initially inspected and leading to reactive maintenance, which in turn require a reinspection for an assessment of the maintenance effectiveness and a new condition score.

SD1’s CMOM Self-Assessment, submitted on October 17, 2007, projected a 10-year target for total system condition assessment. The projection was largely based on historical inspections and maintenance routines performed prior to the formal development of SD1’s CSAP. As stated in the Self-Assessment, such estimations require regular reassessment that may lead to adjustments of the initial projection. The need for post-maintenance reinspection has grown in five years, and has kept pace with initial inspections over the past three years, impeding a ten-year assessment cycle, as shown in Figure 2.3.

In addition, in 2012, an assessment of the CSAP program was conducted and resulted in several recommendations to try to meet the ten-year cycle. However, the CCTV inspection results are showing that the number of pipes requiring rehabilitation drop significantly in the lower priority inspection areas which indicates that if the ten-year cycle is not met, then the risk of failure will not increase by a significant amount versus the importance of addressing pipes that are currently found to have structural issues. Also, it is important to note that the ten year cycle included only those pipes installed by 2008. Therefore, new assets installed after 2008 are not included explicitly in the CSAP ten-year target.

**Figure 2.3 Sewer Inspection Progress**



### Catch Basin and Manhole Inspections

SD1 inspects upstream and downstream manholes during all sewer inspections, unless the manholes have had an inspection within the last 12 months. SD1-owned catch basins, inlets, and trapped storm manholes that are in the combined sewer system are inspected at least once per year. Table 2.3 summarizes the number of catch basins and manholes inspected since the onset of CSAP.

**Table 2.3 Catch Basin & Manhole Inspections**

<b>Period</b>	<b>Number of Catch Basin Inspections*</b>	<b>Number of Manhole Inspections</b>
FY 2008 (January – June)	986	2,050
FY 2009	1,774	7,238
FY 2010	4,168	1,933
FY 2011	3,401	1,783
FY 2012	4,019	901
FY 2013	4,247	889
<b>Total Inspections</b>	<b>18,595</b>	<b>14,794</b>

\*Total includes basins owned by SD1, the Commonwealth of Kentucky, municipalities and private entities.

## **2.5.2 Collection System Maintenance**

### Sewer Cleaning

Cleaning is critical in maintaining the capacity of the sewer system and preventing overflows. SD1's prioritization process ensures that cleaning activities are done in a cost-effective manner and only on pipes in need of cleaning. The program's logic can be found in the CSAP process diagram in Appendix E. The cleaning program classifies pipes by using SCREAM Model™ maintenance scores and identifies appropriate schedules for re-inspections, re-cleaning, and when the pipe should be reviewed for a permanent solution in lieu of continued cleaning. Table 2.4 provides an overview of the length of pipe cleaned in accordance with the CSAP cleaning program logic.

**Table 2.4 Sewer Cleaning Footage**

<b>Period</b>	<b>Footage of Pipe Cleaned</b>
FY 2008 (January – June)	113,695
FY 2009	439,191
FY 2010	737,613*
FY 2011	382,352
FY 2012	370,296
FY 2013	632,825
<b>Total Feet Cleaned</b>	<b>1,938,359</b>

\*Higher totals in FY 2010 are due to sewer cleaning support provided by an outside contractor.

Pipes with high recurring maintenance scores undergo further evaluation for potential permanent solutions. Taking into consideration the pipe's structural and maintenance condition, a life-cycle cost analysis is performed to determine if it is more cost-effective to continue to inspect and clean the pipe on a regular preventive maintenance (PM) schedule or to permanently repair or replace the pipe. To date, SD1 has 14,144 feet of pipe on its permanent PM cleaning list.

Typically, the cleaning and re-inspection frequencies of pipes vary, depending on the condition of the pipe or the frequency of reoccurring issues, such as grease, roots, basement backups and overflows. SD1's permanent PM cleaning list will continue to evolve as additional inspection data is collected, solutions for the remaining pipes are identified, and other new pipes are identified as needing corrective actions.

#### Catch Basin and Grit Pit Cleaning

In January 2009 SD1 began tracking the amount of debris removed during catch basin and grit pit cleaning. During FY 2012, SD1 removed an estimated 527 cubic yards of debris from catch basins and 400 cubic yards of debris from grit pits.

**Table 2.5 Yards of Debris Removed Through Catch Basin and Grit Pit Cleaning**

<b>Activity</b>	<b>FY 2009 Total (Jan–Jun)</b>	<b>FY 2010 Total</b>	<b>FY 2011 Total</b>	<b>FY 2012 Total</b>	<b>FY 2013 Total</b>	<b>Combined Total</b>
Catch Basin Cleaning	149	433	629	527	367	2,105
Grit Pit Cleaning	237	362	330	400	468	1,797
<b>Total Cubic Yards of Debris Removed</b>	<b>386</b>	<b>795</b>	<b>959</b>	<b>927</b>	<b>835</b>	<b>3,902</b>

Rehabilitation and Replacement

Table 2.6 describes the rehabilitation and replacement activities performed by SD1's internal construction crews and maintenance contractors since the onset of the CSAP through the end of the current reporting period.

*(This space was intentionally left blank.)*

**Table 2.6 Rehabilitation & Replacement Activities\***

<b>Activity</b>	<b>FY 2008 Total</b>	<b>FY 2009 Total</b>	<b>FY 2010 Total</b>	<b>FY 2011 Total</b>	<b>FY 2012 Total</b>	<b>FY 2013 Total</b>	<b>Grand Total</b>
Feet of Sewer Lines Repaired or Replaced	11,608	17,944	29,239	19,500	18,508	21,051	<b>117,850</b>
Feet of Sewer Lines Rehabilitated (cured-in-place piping)	1,081	3,204	12,872	64,715**	65,757**	38,129	<b>185,758</b>
Number of Misc. Sewer Repairs	33	41	5	12	4	0	<b>95</b>
Number of Manhole Repairs	548	370	317	321	774***	299	<b>2,629</b>
Number of Manhole Replacements	35	63	80	60	89	33	<b>360</b>
Number of New Manhole Installations	16	53	40	36	57	34	<b>236</b>
Number of Catch Basin Repairs	68	115	71	209	292	21	<b>776</b>
Number of Catch Basin Replacements	81	209	203	116	100	54	<b>763</b>
Number of New Catch Basin Installations	0	4	2	3	3	3	<b>12</b>

\*Rehabilitation & Replacement Activities do not include expansion of SD1 system through CIP projects.

\*\*In FY 2011 and FY 2012, SD1 entered into CIPP lining contracts, which account for the significant increases in lineal footage rehabilitated.

\*\*\*In FY 2012 SD1 entered into a manhole grouting contract, which accounts for the significant increase in manhole repairs.

SD1 Collection System construction crews and SD1's maintenance contractors perform repair, replacement and rehabilitation work. The work schedule is determined by various criticality factors and the proximity of these pipes to priority watershed areas. Pipes requiring emergency work, because of the potential for failure, are scheduled for an immediate repair upon discovery. Additional considerations that may determine if the schedule should be accelerated for a solution are factors such as proximity to overflows, lack of hydraulic capacity, and proximity to other pipes being fixed.

## **2.6 Emergency Preparedness & Response**

SD1's Sewer Overflow Response Plan (SORP) is an operational document that emphasizes emergency response activities to contain, mitigate, and clean residuals from overflows. The long-range objective of the SORP is to provide a framework whereby proper documentation of each event will help establish permanent overflow abatement programs to be incorporated into SD1's Watershed Plans. SD1's SORP as amended July 10, 2009 received regulatory approval on November 10, 2009.

### **2.6.1 SORP Training**

SD1 held annual SORP trainings between June and December of 2013. Approximately 107 operations-level employees attended these trainings, and were issued a standard operating procedures handbook if needed. Personnel in Collection Systems and Plant Operations are required to attend annual training and periodic refreshers throughout the year. Operations-level employees also receive continuous hands-on training in the field during actual overflow response events.

### **2.6.2 SORP Annual Review**

Under the Consent Decree, SD1 is required to perform annual reviews of the SORP and make adjustments as necessary. Specifically, Section 36(c) states that:

**36. (c) Specific CMOM Program Development – Sewer Overflow Response Plan (“SORP”).** ...By no later than each anniversary date of the approval of the SORP, the District shall annually review the SORP and

propose changes as appropriate subject to Cabinet/EPA review and approval.

SD1 conducted its annual review meeting on November 8, 2013, and determined that there were no material modifications to the SORP for FY 2013. Minor updates include wet-weather SSO route adjustments (based on the annual revision to SSO list), and the revised dry-weather inspection schedule for diversions in the combined sanitary system. Updates to wet-weather SSO inspection routes, and dry-weather CSO inspection frequencies can be found in Appendix F.

The SORP describes SSO Reporting and Notification. Quarterly, SD1 reports overflows that occurred throughout SD1's service area, including a cumulative accounting of overflow activity from January 2008 through the current reporting period and an annual comparison of the overflow activity. For the most up to date information regarding total SSO occurrences and volumes, refer to SD1 Consent Decree Quarterly Report No. 24, submitted on October 30, 2013.

## **2.7 Information Management Systems (IMS)**

The purpose of SD1's Information Management Systems (IMS) program is to provide tools and software that tracks asset management records such as, system performance, costs, work orders, inspections, and other datasets that measure the effectiveness and efficiency of SD1's O&M activities and capital expenditures. IMS programs are intended to maximize the accessibility to a wide range of data that are pertinent to operational awareness and effective decision making. As SD1 continues to collect critical data and information pertinent to its business operations, it is imperative that the IMS program also addresses long-term data security.

### **2.7.1 New Software and Upgrades**

#### LaserFiche

During FY 2013, SD1 made major updates to its electronic record retention and management system, LaserFiche. The upgrade to the latest version of LaserFiche provides greater access and archiving of records. The new LaserFiche functionality enhances organization-wide content management and workflow tools that have streamlined time consuming administrative functions, anchoring SD1's record

management program, and fulfilling legislative transparency requirements. The following are key features that LaserFiche offers:

- Document retention and destruction schedules
- Customizable search engine
- Customizable forms
- Document routing via workflows
- Workflow automation and templates
- Store and retrieve documents and image files
- Live work spaces for dynamic or shared documents
- Document tagging, linking, annotation, and digital signature
- Integration capability with other software, such as Great Plains Accounting and Lucity

### ReQlogic

SD1 made a major improvement in its procurement processes during FY 2013, by eliminating paper-based purchase requisitions. In order to streamline and track requisitions with greater reliability, SD1 purchased and implemented ReQlogic as a software solution. This software offers a fully integrated platform that embeds the approval hierarchy of the existing accounts payable system and digitally tracks all purchase processes. Another valuable feature of ReQlogic is its ability to integrate with Laserfiche, the record retention software described above. The implementation of the ReQlogic software further demonstrates SD1's commitment to efficiency and financial transparency.

### Asset Management

During FY 2013, SD1 also upgraded its ArcGIS software to version 10.1 and its Lucity asset management software to version 7.6. In order to make upgrades to the most current GIS and Lucity versions, SD1 also needed to upgrade to SQL Server 2008 R2. The major benefit to upgrading to Lucity v7.6 is the availability of two new program modules, developed per SD1's request, that allow storm water BMP management, environmental compliance records pertaining to illicit discharge detection, and grease management for the FOG program, to be centralized in the common asset management software used for the rest of SD1's assets. This improvement will ultimately streamline all records and data regarding assets into a single repository and eliminate the need to maintain separate databases and multiple software licenses.

## 2.7.2 Information Technology Optimization

SD1 conducted a major assessment of its information technology capabilities in FY 2013, in order to identify immediate and future needs. The initial assessment was carried out by a group of high level technology users within the organization call the IT Optimization Team. After the team identified the goals of the assessment, consultants were tasked with developing the framework of an Information Technology Strategic Plan to guide and enhance SD1's investment in information technology for the next five years. The main tasks involved in the development of the framework were:

- Compared SD1's IT practices against industry leaders
- Inventoried the existing IT systems, programs, and applications
- Conducted a high-level assessment of current practices
- Documented guidelines for future improvements and investments

Various strengths, weaknesses, and opportunities for improvement were identified during this process. Nearly 80 recommendations and an implementation plan were the final results of the IT Optimization Team's assessment. Some recommendations have already been acted upon, such as securing the SCADA network by separating it from the Enterprise network with firewalls. Other recommendations will be addressed in the long term, with comprehensive strategic business planning. The complete assessment, inventory, and recommendations can be found in Appendix G.

## 2.8 Legal Authority

The purpose of SD1's Legal Authority Program is to:

- Implement and enforce SD1's Rules and Regulations
- Assist in the development of policies and guidance documents
- Implement SD1's existing policies and guidance
- Ensure compliance with applicable state and federal laws
- Assist with securing necessary permits from state and federal agencies
- Keep informed of relevant legal issues and state and federal policies and guidance
- Reduce legal liability and manage risk
- Provide staff with legal support and advice
- Effectively manage litigation
- Provide legal assistance for timely, effective, and cost-efficient implementation of

the Consent Decree, including coordination with regulators and legal review of all plans submitted pursuant to the Consent Decree

- Continuously review and revise legal authority as needed to further the mission of SD1

### **2.8.1 Sanitary Rules and Regulations**

During FY 2013, SD1 began a major initiative to update, expand upon, and revise its Rules and Regulations. The purpose of the initiative is to clarify SD1 requirements for system users, developers and contractors. The update is expected to be completed by the end of FY 2014. The following areas have been proposed as new additions to the Sanitary Rules and Regulations:

- New design plan submission requirements
- New flow figures and wet-weather peaking factors to be used when calculating flow for residential, commercial and industrial developments
- New aerial sewer specifications
- New drop manhole requirements
- New section for low pressure force main systems
- New section for incorporating the Small Pump Station Design Guide to be used on SD1 capital projects and by developers
- New reservation of capacity policies
  - Easement requirements
  - Property deeds
  - Valid concept plans

### **2.8.2 Private Sewer Laterals**

#### Sewer Lateral Repair and Illegal Connection Inspection and Enforcement Policy

Of the 575 trouble calls related to building backups during FY 2013, 58 were determined to be related to the condition or operation of the public sewer system, and 517 were caused by issues beyond SD1's control. Backups not associated with the proper operation and maintenance of the public sewer system, were due to causes such as, breaks and blockages in private service laterals, plumbing failures, and large storm events that the public system was not designed to convey.

Over the years, SD1's Board of Directors has adopted several amendments to the Sewer Lateral Repair and Illegal Connection Inspection and Enforcement Policy in order to more efficiently address private lateral issues and remove private source I/I. Due to the inability to continue the financing programs that have historically been provided to customers through this Policy, the SD1 Board of Directors repealed it at the end of FY 2013. However, the enforcement provisions that were in the Policy remain in effect under Section 302 of SD1's Sanitary Rules and Regulations. During the five years that the Policy was in place, SD1 provided approximately \$99,915 in financing to 27 property owners.

Below are the enforcement regulations regarding broken service laterals and illegal connections, found in the latest version of the Sanitary Rules and Regulations on SD1's website.

#### Section 302 – Prohibited Discharges

- 1) No person shall discharge or cause to be discharged, either directly or indirectly, to the sanitary sewer system, surface water, groundwater, roof runoff, subsoil drains or subsurface drains.
- 2) Any such connections made either before or after the effective date of these Rules and Regulations shall be considered illegal and shall be subjects to immediate removal by the owner of the premises so connected and at such owner's expense.
- 3) Should the owner of such an illegally connected premises fail to remove the illegal connection within ninety (90) days of being notified by the General Manager to do so, the General Manager may cause the connection to be removed and the cost thereof to be billed to the owner of the premises.
- 4) No person shall discharge or cause to be discharged to any natural outlet or storm sewer any sanitary sewage or other polluted waters. Effluent from privately owned individual household disposal devices shall not be discharged to storm sewers.

- 5) No person constructing a sanitary sewer or sanitary building sewer shall leave same open, unsealed or incomplete in such fashion as to permit storm or subsurface water to enter such sewers.
  
- 6) In the separate sanitary sewer system, no person shall discharge any substances directly into a manhole or other opening in the wastewater treatment system other than through an approved building sewer, unless otherwise approved by the General Manager in writing. In the combined sewer system, no person shall discharge any substances directly into a manhole or other opening in the wastewaters treatment system other than through an approved building sewer.

## **2.9 New Connection Tap-In**

The purpose of SD1's New Connection Tap-in Program is to ensure standard policies and procedures are in place to approve and perform connections to the sanitary and storm sewer systems. The objectives of this program are to:

- Accommodate economic development throughout the Northern Kentucky region.
- Eliminate the number of illegal and improper taps made throughout the collection system.
- Ensure all connection fees are paid and all new connections are put on billing.
- Maintain the integrity of the sanitary sewer system by reducing the amount of I/I that can enter the system through bad taps or improper abandonment of service laterals.
- Protect the integrity of the sanitary and storm sewer systems by enforcing the use of proper materials.
- Provide an avenue for SD1 to keep certified tappers informed about changes to the Rules and Regulations or specifications for tapping the system.
- Provide supplemental training on other critical SD1 programs, such as FOG, illicit discharge and confined space entry safety.

### **2.9.1 Certified Tapper Program**

SD1's formal Certified Tapper Program ensures that connections to the sanitary and storm sewer system are approved by SD1 personnel and are performed accurately

based upon written specifications and procedures. Plumbers interested in becoming certified are required to attend training and pass a written exam. In addition, Certified Tappers must attend a recertification class offered by SD1 every three years. SD1 currently has 188 Certified Tappers representing 107 plumbing companies, one city, and one utility. Of these 188 Certified Tappers, 17 became newly certified during FY 2013.

### 2.9.2 Violations and Fines

During FY 2013, SD1 issued 19 violations and \$10,500 in fines to eight companies for connecting to SD1's sewer system without obtaining the proper Capacity Permit or Sanitary Sewer Connection Application Permit. Table 2.7 shows the fines issued since 2009.

**Table 2.7 Capacity Connection Violations and Fines**

<b>Fiscal Year</b>	<b>Number of Violations</b>	<b>Number of Companies</b>	<b>Total in Fines</b>
2009	6	6	<b>\$3,000</b>
2010	8	7	<b>\$5,250</b>
2011	9	6	<b>\$5,500</b>
2012	7	3	<b>\$2,000</b>
2013	19	8	<b>\$10,500</b>
<b>Total Violations and Fines</b>	<b>30</b>	<b>22</b>	<b>\$26,250</b>

### 2.10 Organizational Structure

The purpose of SD1's Organizational Structure Program is to delineate job responsibilities, outline opportunities for advancement, ensure effective employee supervisor ratios, and guarantee adequate staff is in place to accomplish the mission and vision of SD1. This program also works in conjunction with the annual budget process to determine staffing needs and allocate operational expenses appropriately.

During the current reporting period, SD1 made minor organizational structure changes to the Engineering and Operations divisions to align responsibilities with appropriate

departments. The main realignment involved the transfer of the Treatment Plant and Pump Station Department from Engineering to Operations, and the transfer of Design and Construction Management from Operations to Engineering. The key activities and responsibilities of SD1's newly reorganized Engineering and Operations divisions can be found in Appendix H, along with current organization charts for the entire organization.

## **2.11 Pump Station Operations**

The purpose of SD1's Pump Station Operations program is to ensure reliable operations of the pump stations throughout the service area. Routine inspections and preventative maintenance (PM) are performed to ensure that all stations are operating at maximum efficiency. In FY 2013, SD1 completed a total of 6,932 inspections and approximately 1,379 pump station PM inspections that included assessments of generators, stand-by pumps, bubblers, heating ventilation and air conditioning, electrical, air release valves, gate valves, plug valves and pump/motor lubrication. Fewer PM inspections were performed in FY 2013 due to the elimination of the 13 pump stations related to the activation of the Western Regional Water Reclamation Facility.

### Power Systems Evaluation and Asset Management Program

During FY 2012, SD1 implemented a proactive and coordinated asset management program of its treatment and pump operation power systems. The purpose of this program is to assess and identify the condition of the power systems, plan and prioritize subsequent improvement plans based upon criticality and implement regular preventive and corrective maintenance required to sustain the reliability of its power systems. These proactive measures cost-effectively ensure that all power systems are operating at maximum efficiency, thereby reducing the risk of sewage discharges.

The initial assessment phase, completed in FY 2011, indicated that the Willow Run and Covington Main Street Flood Pumping Station power systems were in critical condition and in need of immediate attention. Based on this information, SD1 took immediate action at these stations. Transformers at the Willow Run location were replaced in February 2011 and the transformers at the Covington Main Street Flood Station were replaced in July 2012. In FY 2013 new transformers were also added at:

- Eastern Avenue Flood Station in Covington

- Fourth Street Flood Station in Newport
- Washington Street Flood Station in Newport

SD1 continued evaluating the initial condition assessments of the other power systems that were found to be in less critical condition and develop a prioritized improvement plan to address any repairs that are needed. Additionally, SD1 entered into an electrical maintenance contract in FY 2012, to ensure adequate resources during emergencies.

In addition to power evaluations, SD1 completed a major upgrade at the Lakeview Pump Station in FY 2013 with new pumps, motors and discharge piping designed to improve reliability and maintain capacity. The old pumps required constant maintenance to adhere to strict tolerances on the impellers. New pumps were also installed at Meadow Lane Pump Station to eliminate capacity problems.

## **2.12 Safety**

The purpose of SD1's Safety Program is to ensure that appropriate measures are taken to eliminate or control the exposure of SD1 employees and the general public to hazards that may cause physical harm, and to comply with local, state, and federal safety codes and legislation. Performing daily operations in a safe manner not only protects our workforce and the community, but also demonstrates fiscal prudence, high employee morale, and results in financial savings for our ratepayers.

SD1's Safety Committee assists in providing a safe working environment for all employees. The Committee provides recommendations to improve safety and working conditions at SD1 and communicates with all departments, staff, and employees on matters relating to occupational safety and health. In addition, SD1 has an established an Emergency Response Team that has been trained to plan for and respond to workplace emergencies.

### **2.12.1 Safety Training**

SD1 has continued to produce and distribute a Safety Training Calendar that identifies class offerings, instructors, times, and dates of training throughout the year. A copy of the FY 2012 Safety Training Calendar is included in Appendix I. The calendar is posted to the Intranet site, and monthly email notifications are sent to SD1 employees to notify

them of upcoming trainings and attendance requirements. Attendance at safety training classes is tracked with Halogen software to ensure that each employee meets his or her annual safety training requirements.

### 2.12.2 Performance Indicators

Table 2.8 outlines the indicators used to measure the success of the Safety Program and SD1's performance in each area during FY 2008 through FY 2013.

**Table 2.8 Safety Program Performance**

<b>Performance Metric</b>	<b>FY 2008</b>	<b>FY 2009</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012</b>	<b>FY 2013</b>
OSHA Recordables	10	15	19	6	8	8
Worker Compensation Claims	10	9	10	9	7	5
Friendly Reminders Issued	18	1	8	6	5	2
Safety Violations Issued	3	0	4	1	4	1
First Aids	17	17	21	23	22	5
Site Safety Audits	104	348	222	235	192	253

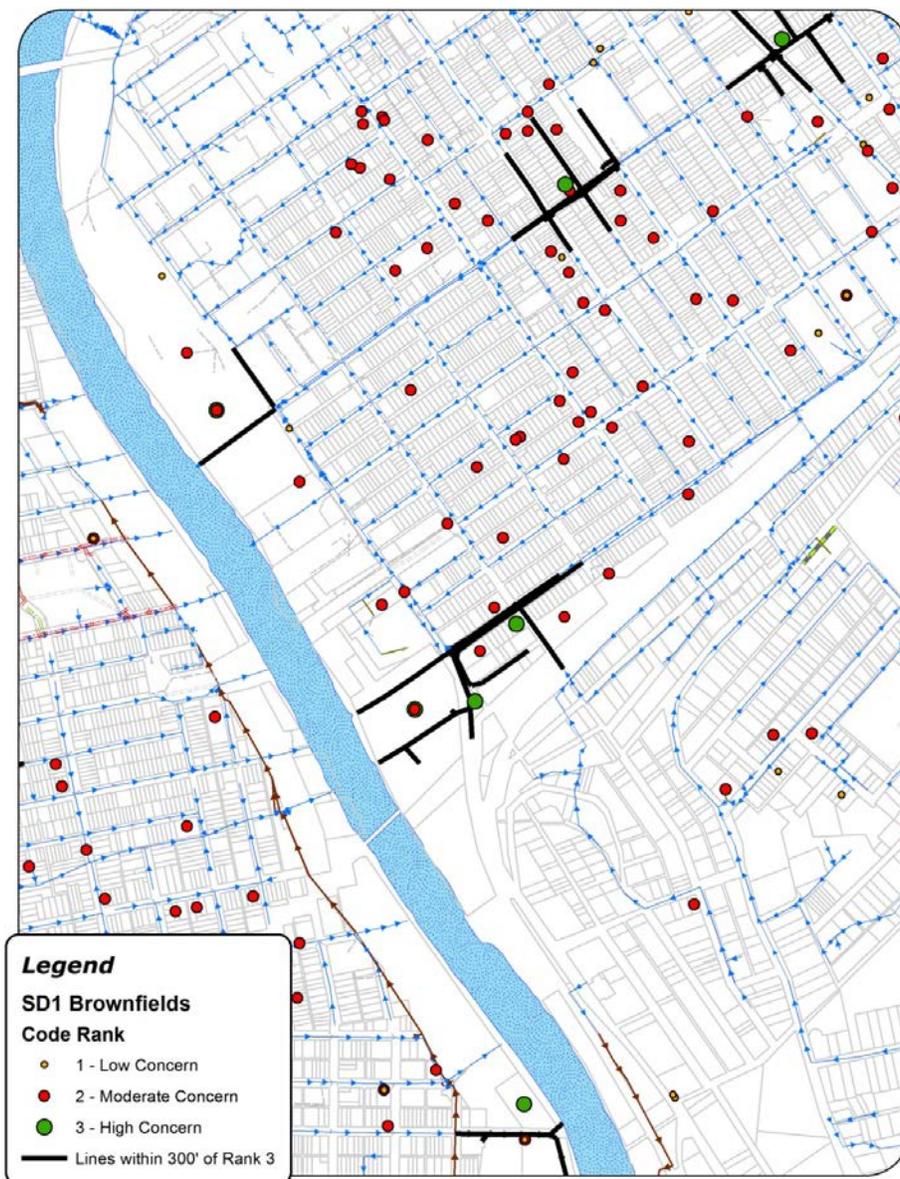
### 2.12.3 SD1 Brownfields Inventory

During FY 2013, SD1's Safety Department, Collection Systems Department, and GIS Department finished implementing a major safety initiative that required approximately two years to complete. Below is a summary of the major initiative.

In the early half of 2012, SD1 compiled an aggregate report of state and federal databases documenting historical Superfund sites, National Priority List sites, brownfields, underground storage tanks, dry cleaning operations, open dumps, and several notices of violation from nearly approximately 90 different sources. Throughout FY 2013, SD1 converted the 1,600-page report into a functional Geographic Information Systems (GIS) layer. Nearly 3,600 locations in Northern Kentucky were identified as potentially hazardous and ranked one to three for severity, three being the most severe. The locations were then mapped in the GIS, so planners and supervisors in the Collections Systems Department can determine if a site requires further assessment,

prior to deploying excavation or construction crews. SD1 has determined that there are approximately 315 sites of high concern in the service area that warrant precaution. Disturbing the potentially contaminated soils around the buried assets within 300 feet of the most severe sites requires further assessment and heightened safety procedures, before digging is allowed. Figure 2.4 demonstrates the brownfield inventory in the GIS format, with various ranked sites and highlighted assets that may be affected.

**Figure 2.4 SD1's GIS-Based Brownfield Inventory**



With the completion of the GIS layer for the brownfield inventory, training on its use and the associated reports was provided to more than 100 SD1 employees. In conjunction with the GIS training, the Safety Department secured an EPA Chemical Hygiene Officer and an instructor at Cincinnati State Technical and Community College to provide multiple workshops for Occupational Safety and Health Administration's (OSHA) Occasional Site Worker Safety certification. The workshops highlighted best practices for working occasionally in hazardous conditions and at contaminated sites. Participants received certificates for successful completion of the trainings.

## **2.13 Smoke & Dye Testing**

The purpose of SD1's Smoke & Dye Testing Program is to identify specific sources of rainfall derived I/I into the sanitary sewer system. Smoke & dye testing along with sewer and manhole inspections and flow monitoring comprises SD1's SSES program elements. Smoke testing helps to identify significant sources of storm water I/I, including private service laterals and illegal connections such as downspouts and area drains. Smoke testing can also be used to determine the location of sewer main defects likely contributing to an I/I problem. Dye testing is performed for comprehensive identification of both public and private source I/I connections.

### Priority I/I Source Identification & Removal Program

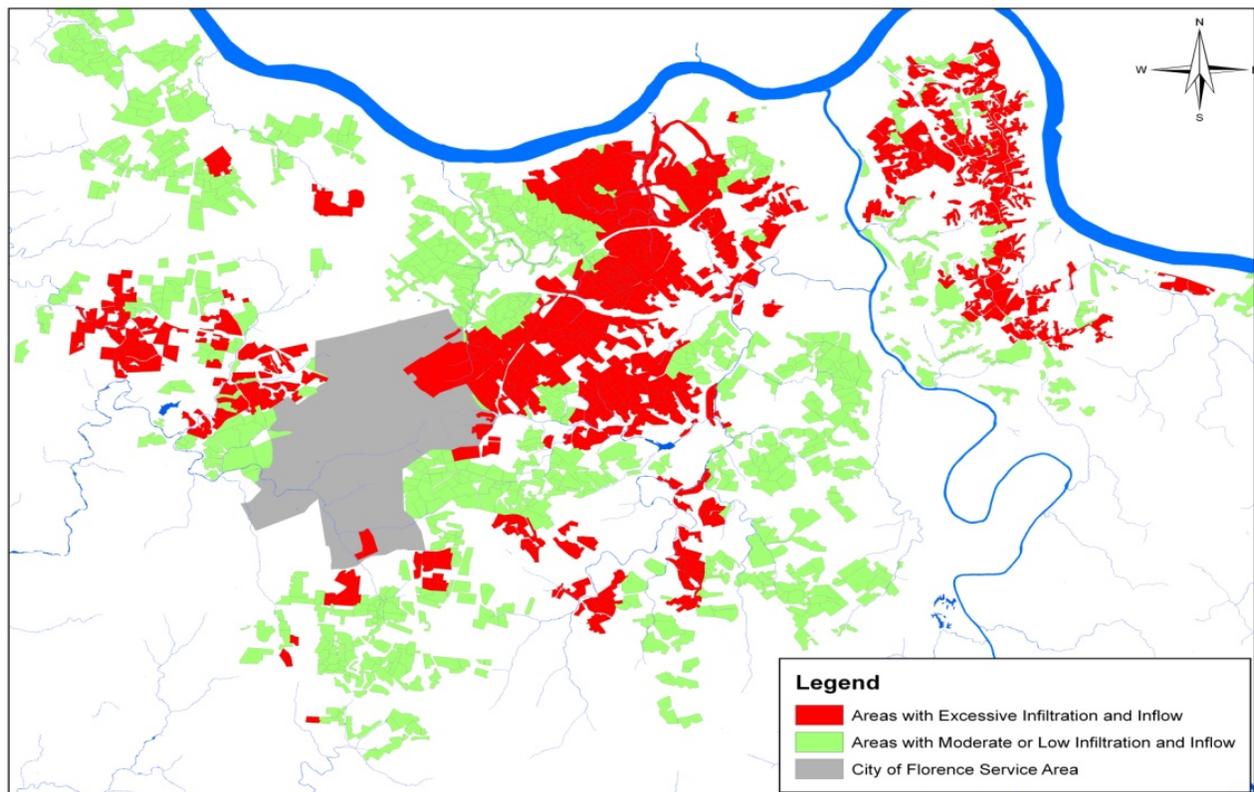
As part of the SSES program, SD1 has budgeted funds as part of its Watershed Plans to implement a Priority Inflow and Infiltration Source Identification & Removal Program designed to reduce and eliminate SSOs through public and private source I/I removal projects. Smoke and dye testing plays a critical role in identifying the sources of I/I as part of this program. The priority watershed areas SD1's SSES crews are initially evaluating as part of this program are known to have extensive I/I and include the Banklick Creek (Lakeview Pump Station) watershed, Taylor Creek watershed, neighborhoods tributary to Crestview Pump Station, Bullock Pen Creek watershed (Erlanger and Elsmere), and the Licking River Siphon watershed.

#### **2.13.1 SSES – I/I Assessment Projects**

The goal of the SSES program is to identify and remove both public and private sources of I/I to reduce and eliminate sanitary sewer overflows. SD1 has expended significant effort over the last several years to identify and quantify the sources of I/I using detailed

flow monitoring and smoke and dye testing. The map in Figure 2.5 provides an overview of the areas in SD1's collection system experiencing I/I at levels such that 2% or more of the storm water runoff from the area served ends up in the sanitary sewer during the typical year based on flow monitoring and calibrated model results. This map provides the focus of the SSES program and I/I associated assessment projects.

**Figure 2.5 Areas of Excessive I/I Across SD1's Collection System**



### Micromonitoring

Micromonitoring is a variation of conventional sewer flow monitoring, focused on smaller pipe segments with the objective of locating actual defects in the sewer. The goal of micromonitoring is to quickly identify sewer pipes that need rehabilitation, in a very economical and time efficient way. To achieve this goal, modified flow monitors called micromonitors are deployed in sub-basins to collect wet weather flows for one or two storm events. This approach minimizes investigation costs, because follow-up fieldwork is focused only in targeted areas, instead of embarking on a basin-wide assessment of the system with smoke and dye testing or CCTV inspection. If a sewer line does not show any I/I response to a significant storm event during the micromonitoring period, it

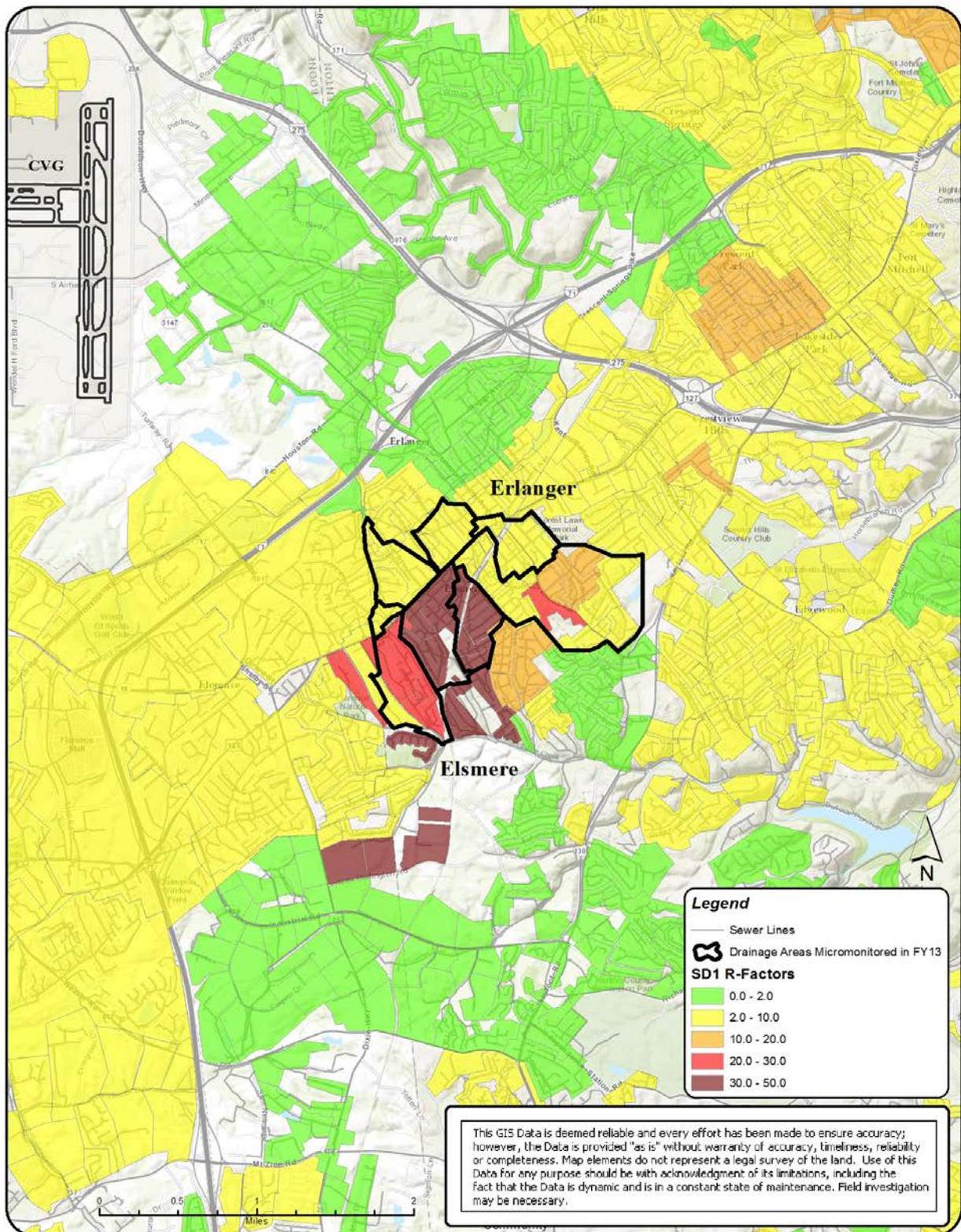
is immediately removed from the investigation and rehabilitation program. Other segments which indicate sources for I/I are included in the sewer rehabilitation program. If the source is on private property, SD1 can then approach individual home owners to find a solution, rather than imposing intrusive testing unnecessarily on the entire region.

Micromonitoring solves the problem of accurate measurement of low flow in small sections of sewer lines where there are only a few houses connected to the line since they have a weir behind the normal flow monitoring probe, which keeps the depth sufficient to prevent debris from accumulating and provides an alternative method of calculating the flow rate. When the flow is very slow, the flow rate over the weir can be calculated from the depth and the rating curve of the weir.

SD1 continues to utilize these micrometers in the collection system to refine its I/I analyses. Figure 2.6 shows areas that were actively monitored in FY 2013 with micrometers. The data collected so far have confirmed the benefits of the micromonitoring program, as some areas are showing much higher I/I than others within the same basin.

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Figure 2.6 Micromonitored Drainage Basins in FY 2013



## 2.14 Training

The purpose of SD1's Training Program is to build an elite, professional, and proactive workforce capable of executing the mission and vision of SD1 in a safe, timely, and cost-effective manner. This comprehensive Training Program results in several benefits for the organization, including:

- Ensuring the safety of our employees and the community we serve
- Increasing job satisfaction, employee morale, and workforce engagement by providing opportunities for personal and professional growth
- Keeping staff up-to-date on industry trends, as well as certification and license requirements
- Maintaining the efficiency and consistency of job performance, which consequently upholds the quality of our work and yields a greater return on investment
- Meeting and exceeding the expectations of our ratepayers and governing bodies by ensuring fiscally responsible, efficient, and well-informed operations

SD1 employees are provided with a wide array of training opportunities throughout the year, including safety training, technical skills training, and soft skills training in areas such as communication and leadership. Employees may receive professional development through external conferences and courses, or through SD1's formal in-house training program that is managed by Human Resources. SD1 personnel received an average of 50 hours of training per person, during FY 2013.

### Training Needs Assessment

SD1 completed a comprehensive training needs assessment throughout the organization, during the current reporting period. The focus of the assessment was to increase the effectiveness, efficiency and relevance of the internal training program and external trainings, such as conferences and industry workshops. As a result of the assessment, six categories and 20 total recommendations are being considered for implementation in FY 2015. Recommendations range from re-evaluating which trainings are considered mandatory for all employees, implementation of departmental training coordinators throughout SD1, redesign of the educational assistance program, and developing a "train the trainer" program for anyone that has opportunity to present to employees as subject matter experts.

### **2.14.1 In-House Training Program**

During FY 2013, SD1 continued to provide results-oriented leadership training courses on the following topics: team building, empowerment through delegation, goal setting and constructive feedback, tools for continuous improvement, change management, and building community through commitment and innovation. In addition, specific computer skills training courses were offered to all SD1 employees to help ensure the continued advancement of technology in SD1's field operations. All of the classroom instruction for the courses identified in the catalog is provided by highly qualified and trained SD1 personnel, and instruction material is made available through the training program's in-house library. The training calendar and library is updated annually to provide revised or new training information.

(Refer to Section 2.6.1 for a description of SORP training and Section 2.12.1 for a description of safety training that took place during the current reporting period.)

### **2.14.2 External Training**

#### Kentucky WINS Program

SD1 continued its participation in the Kentucky WINS program that provides grant funding for employee training through the Kentucky Community & Technical College System. During FY 2013, SD1 was able to secure grant funds to provide personnel additional specialized job training. Personnel attended Gateway Community College and completed courses, customized to SD1 needs, in computer assisted drafting, introduction to project management, and programmable logic controls.

Many of the employees that have taken classes through this program over the last several years are close to meeting the requirements needed to obtain specialized certifications. In FY 2014, SD1 will seek additional grant funds for those employees to take the technical classes needed to fulfill the certification requirements of their respective programs. In addition, SD1 is seeking WINS grant funds for employee course training to help support the development of specific core competencies.

### **2.14.3 Financial Assistance for Continuing Education**

SD1 encourages its employees to continuously improve upon their skills, which could be in the form of pursuing higher education. Requests for financial assistance are approved based on the courses and their relationship to the employees' current or potential future position requirements and expected competencies. During FY 2013, SD1 provided \$14,456 in educational assistance to its employees.

### **2.14.4 Halogen Software**

SD1 implemented new performance evaluation and training tracking software in FY 2013 called Halogen. The Halogen software being utilized by SD1 is comprised of two specific modules. The Halogen eAppraisal module helps SD1 monitor, centralize, and take charge of its talent management practices. The Halogen eLearning Manager module allows SD1 to create targeted training programs that close the skill gaps within the organization, and address current and future training needs. These programs give every SD1 employee the ability to schedule, manage, and track all of their learning and development activities. The precise documentation and measurement of training, as well as the employees' ability to meet annual goals, gives SD1 better indicators of the effectiveness of its training investments, in terms of the resulting employee performances.

## **2.15 Water Quality Monitoring**

The purpose of the Watershed Monitoring Program is to establish a baseline assessment of watershed and stream conditions, via the collection of instream water quality, biological, physical habitat and hydromodification data throughout Northern Kentucky. This program includes dry-weather base flow water quality and biological monitoring in all watersheds (approximately 75 locations), as well as, event-based wet-weather water quality in major watersheds (approximately 60 locations). Additionally, both wet and dry weather water quality samples are collected on the Ohio River between river miles 444 and 518 (22 locations).

During 2012, SD1 continued the collection of instream water quality, biological (fish and macroinvertebrate communities) and habitat data to support the characterization of the Northern Kentucky watersheds, and continued to expand the hydromodification

component in its monitoring efforts. The hydromodification component focuses on measuring the physical stream channel responses that are primarily attributable to land-use conversion from undeveloped to developed. The altered flow regime associated with conventional urban development (i.e. hydromodification) leads to flashier and larger flows, excessive stream erosion, and overall channel instability that can cause water quality impairments (e.g. high TSS and sedimentation/siltation) and have adverse effects on aquatic biota such as fish and macroinvertebrates. Accelerated bank erosion, channel widening, and enlargement also pose risks to adjacent public infrastructure (e.g. sewers, roads, and bridges) and private property.

This data is being used to calculate critical flow values ( $Q_{critical}$ ) for Northern Kentucky streams.  $Q_{critical}$  is a flow threshold, that when exceeded, can induce new or accelerate existing impairments, such as stream bank erosion and habitat simplification. The calculation of  $Q_{critical}$  allows for the design of storm water runoff controls that address both issues. In addition, this factor is viewed as the link between water quality and water quantity management due to the strong relationship revealed by recent data analysis between stream stability and ecological integrity.

### Performance Monitoring

Instream water quality and overflow data collected to help characterize watersheds in Northern Kentucky plays an integral role in prioritizing, designing, and implementing cost-effective solutions that will reduce overflow occurrences and improve water quality in rivers and creeks within SD1's service area. These data were used to create the hydraulic and water quality models that served as essential planning tools in developing SD1's Watershed Plans submitted June 30, 2009, as well as, the March 31, 2011 resubmittal. In 2012, SD1 initiated Phase II of its monitoring efforts, which entailed revisiting sites originally sampled at the onset of the program in 2007. However, it has been determined the best approach is to revisit the sites on a rotating basin schedule, instead of revisiting every site annually. During FY 2013, the 27 sites within the Central basin were sampled. These site revisits included biological and habitat assessments, base flow water quality samples, and where appropriate, hydromodification surveys. Additionally, two base flow events and two wet-weather events were sampled for the entire Northern Kentucky portion of the Ohio River (river miles 444-518). SD1 also continued to develop and refine performance metrics, in order to measure its progress in improving water quality in relation to the base-line water quality models.

### Stream Condition Index

Data collected through SD1's watershed monitoring program continues to support and refine the Stream Condition Index (SCI). During FY 2013, SD1 continued to make refinements to the SCI by including additional biological parameters (i.e. macroinvertebrates and fish, bacteria, solids, oxygen demand, nutrients, and physical parameters), habitat and stream flow data. Additionally, SD1 has introduced a hydromodification metric that is focused on the development of a stream stability index. These data have considerably strengthened the SCI, which is expected to be fully utilized during FY 2014.

### Recreational Management Tool

Several years ago SD1 began discussions with the Cincinnati Metropolitan Sewer District and the Ohio River Valley Water Sanitation Commission (ORSANCO) about the development of a recreational management tool. This tool would be used to inform the public about water quality and facilitate informed decisions regarding recreational use of the Ohio River. In 2011, efforts began to develop an application for smart phones and a website that provides predicted bacteria counts (*E.coli*) on sections of the Ohio River, based on monitoring that was conducted by the three agencies. Giving the public access to this information in real-time allows them to make more informed decisions on whether or not they choose to recreate on the Ohio River.

The tool was first made available to the public as an iPhone application called Recr8OhioRiver in 2012. In 2013 the application was made available on the Android platform, and the main website moved from beta testing phase to fully operational and public. The Recr8OhioRiver website can be viewed at <http://www.recr8ohioriver.org/>.

Since the official launch of the Recr8OhioRiver application and website in FY 2013, usage statistics have been collected. The following is a summary of initial usage in Greater Cincinnati and Northern Kentucky:

- More than 1,700 active smart phone application users
  - iPhone users = 95%
  - Android users = 5%
- More than 3,400 website visits
- More than 50,000 screens viewed
- Nearly 7,000 website page views

The Recr8OhioRiver partners continue to look for ways to improve outreach to the community. The initial strategy to inform the public of this resource is a marketing campaign that includes:

- Signage on public landings
- Signage on water taxis and ferries
- Posters at sporting goods stores, restaurants, and marinas
- Presentations at public meetings, forums, and conferences
- Promotion flyers at Earth Day events and marathons
- Mascot participation in local events like Paddle Fest
- Social media advertising
- Promotion at local community groups

Figure 2.7 provides examples of the above marketing efforts.

SD1 anticipates developing a social media policy in FY 2014 that will enhance the use of the Recr8OhioRiver application, and broaden its ability to deliver timely public notifications and educational material with this new platform.

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Figure 2.7 Recr8OhioRiver Marketing Campaign



## **SECTION 3. GREASE CONTROL PROGRAM**

The purpose of SD1's Grease Control Program is to prevent the introduction of fats, oils, and grease (FOG) into the sanitary sewer system thereby reducing sewer overflows, maximizing sewer capacity and decreasing sewer maintenance costs. In addition, this program is intended to increase awareness of operators of local food service establishments (FSE) and home owners about measures they can take to limit or prevent the introduction of FOG into the drains and sanitary sewer system.

SD1 received regulatory approval of its Grease Control Program: Proposed Phased Implementation Plan on January 8, 2008. The revised Grease Control Program includes components such as ordinances, design standards, and permitting requirements, inspection, and enforcement protocols. The enhancements made in the new Grease Control Program reduce sewer overflows within the collection systems and optimizes system capacity.

Refer to Appendix J for the completed and on-going tasks of the implementation plan. SD1 met the deadline for completion of all tasks by January 8, 2012, and is currently tracking the remaining on-going tasks as part of its regulatory compliance measures.

### **3.1 Program Management**

#### **3.1.1 Responsibility**

SD1's Industrial Monitoring and Plan Review groups are responsible for the implementation of the Grease Control Program.

#### **3.1.2 Legal Authority**

##### Sanitary Rules & Regulations

The Sanitary Rules and Regulations provide SD1 the legal authority necessary to control the sewer system and monitor discharges to the public wastewater treatment system. This control, along with other controls affected by these Rules and Regulations, is necessary not only to conform to federal and state laws and EPA

regulations, but also to provide for the consistent, reliable, and efficient functioning of the SD1's wastewater collection and treatment systems.

#### Enforcement Response Plan

SD1's Enforcement Response Plan (ERP) is used to determine the appropriate enforcement response to a specific violation of pretreatment requirements. The purpose of plan is to define the range of appropriate enforcement actions based on the nature and the severity of the violation and the overall degree of noncompliance. It also promotes consistent and timely use of the enforcement remedies available to SD1 by eliminating uncertainty and confusion concerning enforcement options.

SD1 updated its ERP during FY 2010 to include provisions necessary to enforce the requirements of the grease control program. These updates were approved by the Cabinet on July 19, 2010.

#### FOG Management Policy

During FY 2010, SD1 created a FOG Management Policy to describe in greater detail the implementation of its permitting program. The policy is intended to establish clear design standards, procedures, and guidelines to regulate FSE operations, as well as the disposition of FOG wastes pumped from FSE Grease Control Equipment (GCE) during routine maintenance.

In July 2011, SD1 notified certified tappers, plumbing suppliers, the Northern Kentucky Restaurant Association, the Northern Kentucky Health Department, and city and county representatives that new FSEs are required to install and maintain appropriately sized grease control equipment in accordance with the provisions of the new FOG Management Policy and its related design standards. The policy went into effect on January 1, 2012. SD1's complete FOG Management Policy can be found in Appendix J. The policy was reviewed during FY 2013, and minor revisions to eliminate redundancies are anticipated for FY 2014.

### **3.2 Permitting**

SD1 determines the need to issue a Food Service Discharge Permit along with any applicable fees. Effective January 1, 2012, all new food service establishments are

required to obtain a Food Service Discharge Permit, in accordance with SD1 Rules and Regulations.

### **3.2.1 Record Keeping**

SD1 Food Service Discharge Permit requires that FSE maintain a “FOG Folder” at the FSE facility address that must be available for periodic inspections. Records shall be retained for a minimum of three years. Failure to meet any of the record keeping requirements is a violation of the Food Service Discharge Permit and SD1 Rules and Regulations.

### **3.2.2 Grease Control Equipment (GCE)**

SD1’s permit requires that all discharges containing grease & oil pass through Grease Control Equipment (GCE) before entering the sanitary sewer. GCE refers to any equipment that removes fats, oils, and grease from wastewater such as a grease trap which is installed inside the building usually under a counter/sink or built into the floor of the kitchen area; or a grease interceptor which is usually installed outside in the ground and is much larger in size. GCE must be well-maintained and in proper operating condition at all times.

The design criteria for approved devices are defined in the FOG Management Policy and will be enforced with deadlines for installation through the revisions made to the Sanitary Rules and Regulations.

Effective January 1, 2012, all new FSEs, as well as those undergoing significant renovations, are required to submit plumbing plans to SD1 to ensure that the grease control device specified for installation meets SD1’s design criteria. Once installed, the grease control device must be inspected by SD1 to verify that an appropriate grease control device was installed and is operating properly. SD1 will use any and all legal remedies to enforce the use of such devices, including the Administrative and Judicial remedies set forth in SD1’s Sanitary Rules and Regulation. Commonly used remedies include: notices of violation, cease and desist orders, and administrative fines.

During FY 2013, approximately 53 plans for GCE installations were reviewed and 52 permits were issued by SD1. Of the 52 new permits issued, 10 of the FSEs went out of

business in the same year. Table 3.1 provides an annual plan review and permit summary, since the effective date of the FOG Management Policy.

**Table 3.1 GCE Plans Reviewed and Permits Issued**

<b>Period</b>	<b>Plans Reviewed</b>	<b>Permits Issued</b>
FY 2012	10	23
FY 2013	53	52
<b>Total</b>	<b>63</b>	<b>75</b>

### **3.2.3 Reporting Requirements**

SD1 requires permitted FSEs to report proof of service or cleaning of its GCE. All documentation must be submitted to SD1 within 30 days of the actual cleaning/service.

## **3.3 Inspections**

### **3.3.1 Permitting Inspections**

SD1's Industrial Monitoring Department performs inspections of local FSEs that may be contributing to the buildup of FOG in the collection system. Random inspections are conducted to ensure compliance with the permit and with SD1's Rules and Regulations.

FSEs were initially inspected in known FOG problem areas where maintenance and inspection data reveal that the condition of the lines and pump stations are significantly stressed due to the buildup of FOG. Initially, FSEs in all known problem areas, where sewers were found to overflowing due to blockages of FOG, were thoroughly investigated. By evaluating the collection system in this manner, SD1 was able to prioritize which areas to focus on, and conduct inspections of FSEs that have the greatest potential impact of reducing FOG. In FY 2013, the full enforcement of the Fog Management Policy, inspections of the newly permitted FSEs, and evaluation of the program's first full year were the focus of the Industrial Monitoring staff.

### Sewer Inspection Data

SD1 conducts FSE inspections based on current sewer inspection data, which provides specific locations of grease blockages. CCTV inspection data in Lucity indicating a blockage of 30% or greater due to grease is integrated into a GIS data layer to visually represent the FOG problem areas across SD1's service area. Maps are created from the data layer to display the sewer lines, sewer structures, and buildings connected to the collection system in relation to the grease blockages. The maps are updated daily with new inspection data and are reviewed monthly to determine if new problem areas exist. If new problem areas are discovered, the FSEs in those areas are inspected. Over time, the maps will also be reviewed to ensure that pipe conditions are improving and the FOG issues are being resolved.

### **3.3.2 Compliance Inspections**

At the end of FY 2013, SD1 had 52 new permitted FSEs throughout the service area, and 90 total. Within one year of a permit's issue date, at least one follow-up inspection is conducted at each permitted FSE. SD1 issued 13 Notice of Violations (NOV) for non-compliance with the Food Service Discharge Permit to 10 FSEs. Of the 10 FSEs found in non-compliance, nine were due to not having proper GCE installed prior to opening. The nine FSEs were placed on compliance schedules. Of those nine, two were issued additional NOVs for not meeting compliance schedule deadlines, and one was issued an additional NOV for not having proper cleaning logs on site. A complete FY 2013 violations summary report of permitted FSEs can be found in Appendix K.

### **3.4 Grease Trap Waste Disposal**

All individuals or companies that haul waste to the Dry Creek Wastewater Treatment Plant must apply for and obtain a Domestic Holding Tank Waste Hauler Discharge Permit. Permits are issued on an annual basis and provisions of the permit must be adhered to at all times. Mobile waste haulers disposing grease trap waste at the plant are required to submit a Domestic Holding Tank Waste Hauler Manifest, which provides a detailed description of each load on their truck. All FSEs in SD1 jurisdiction shall have an SD1 certified grease waste hauler complete a grease interceptor certification annually.

Two waste hauler certification courses were held in 2013 (one in April and one in November). Beginning January 1, 2012, any hauler disposing of grease from a permitted FSE at the plant must attend a training course and become certified to inspect GCEs. SD1 does not require all grease to be disposed at the plant therefore, only those haulers associated with a permitted FSE are required to be certified.

SD1 monitors the method and location of disposal of grease removed from accepted grease control devices through the grease hauler manifest. The information is stored in LINKO HW FOG software. SD1 established an Environmental Compliance module in Lucy during FY 2013, as described in Section 2.7 Information Management Systems. The process of transferring the historical data in LINKO HW FOG to the new Lucy module will begin in FY 2014. This will help SD1 maintain FOG records in a centralized database that is accessible to more employees, and provides the capability to easily integrate with other information systems.

The amount of grease hauled to and disposed of at the Dry Creek Wastewater Treatment plant since FY 2008 is provided in Table 3.2.

**Table 3.2 Grease Disposed at Dry Creek Wastewater Treatment Plant  
(FY 2008 through FY 2011)**

<b>Fiscal Year</b>	<b>Gallons of Grease</b>
2008	555,833*
2009	43,649
2010	108,300
2011	161,150
2012	234,210
2013	185,575
<b>Total</b>	<b>1,288,717</b>

\*There was a significant reduction in the amount of grease disposed at Dry Creek following FY 2008 because SD1 no longer received grease from Schwan's Global Supply Chain; however, SD1 anticipates that this number will increase as additional FSEs become permitted.

## **3.5 FOG Education**

### **3.5.1 FSE Compliance Workshop**

SD1 has created appropriate training materials to educate grease generators and their employees on best management practices, permit requirements, and applicable rules and regulations. A representative from all permitted FSEs is required to attend a training workshop.

SD1's current FSE compliance training workshop is being coordinated through the Northern Kentucky Health Department's monthly Food Service Managers Workshop, which is a required program for all FSEs in Boone, Campbell and Kenton counties. This coordination provides a cost-effective and efficient way for SD1 to ensure that all FSEs, even those not currently permitted, are being trained. FSEs must have at least one trained employee on duty per shift.

SD1 is provided a monthly summary of the attendees who attended the training and the number of educational pamphlets and brochures that were distributed to each attendee. During FY 2013, approximately 959 food service managers (including representatives from FSEs that are not currently permitted) attended the workshop and received brochures and pamphlets highlighting the FOG program.

### **3.5.2 General Education**

SD1 uses various communication pieces throughout the year to inform and educate private residences on the harmful effects of FOG in sewer lines and the proper grease handling techniques that can be used to minimize the release of FOG into the collection system. This information is distributed through various channels such as: direct mailings, bill inserts, SD1's website, promotional product giveaways, and community newsletters and newspapers. Using the data provided by sewer inspections, SD1 will focus its public education efforts primarily in areas that are showing signs of grease problems and will apply an appropriate communication strategy to best fit the situation.

#### Residential Communication

During FY 2013, SD1 mailed approximately 695 letters to residents in areas that have experienced an overflow or building backup caused by a build-up of grease. The

standard letter alerts residents that an overflow or building backup occurred, educates the residents about the effects of fats, oils, and grease on the collection system, and clarifies proper disposal methods.

### Website

Over the past year, SD1 has continued to expand the grease control section of its website to include additional information for the public, FSEs, and sludge haulers. This information includes detailed descriptions of common FOG sources, tips on how to properly dispose of FOG, and the “Do’s and Don’ts” of FOG and best management practices for FSEs.

## 3.6 Performance Indicators

Table 3.2 provides a summary of the performance indicators that SD1 is tracking in relation to its implementation of a formal Grease Control Program. Now that there are three full years of data for this program SD1 can begin analyzing the performance information. Specifically, SD1 is determining if there is any correlation between the reduction in the feet of lines on the permanent PM cleaning list and the increase in the number of SSOs and building backups, or if there are other influences/factors that have lead to these results.

**Table 3.2 Grease Control Program Performance Indicators**

<b>Performance Indicator</b>	<b>FY 08</b>	<b>FY 09</b>	<b>FY 10</b>	<b>FY 11</b>	<b>FY 12</b>	<b>FY 13</b>
Feet of Line on Current PM Cleaning List due to Grease	82,000*	4,326	4,326	4,892	4,945	5,465
Number of SSOs due to Grease	4	17	10	7	5	4
Number of Building Backups due to Grease (Reported through Trouble Calls)	2	5	7	7	7	6

\*Between FYs 2008 and 2009, the lines listed on the permanent PM list were inspected and assessed according to the CSAP, using SCREAM scores to help identify the lines requiring PM.

SD1 continues to run an effective Grease Control Program, as indicated in the information in table 3.2. The total number of backups and SSOs due to grease in FY

2013 represents approximately 0.65 per 100 miles of sewer, per year. This compares very well with the top quartile of utilities in the South based on the American Water Works Association's 2007 Benchmarking Study. According to the report, the top quartile performance is 3.8 failures due to blockages per 100 miles of sewer, per year. Even though the numbers in Table 3.2 do not include other causes of blockage failure, an analysis of 2012 data showed a total failure rate of less than 2.5 per 100 miles per year. These trends demonstrate the continual improvement of the effectiveness of SD1's operation and maintenance programs.

## **SECTION 4. PUMP STATION BACKUP POWER**

SD1 received regulatory approval of the Pump Station Operation Plan for Backup Power on May 14, 2008 and has made significant progress assessing and implementing backup power solutions throughout the service area. For a detailed update on the current progress of this program, refer to Appendix J.

## **SECTION 5. SELF-ASSESSMENT PROGRAM**

SD1 performed an extensive self-assessment of each CMOM program in mid-2007, involving approximately 75 employees in a series of interviews and team planning workshops. During this process, SD1 employees identified nearly 100 improvements to collection system activities that would aid in more effectively achieving regulatory compliance and reducing SSO and CSO occurrences throughout the service area. SD1's progress has completed all but one of the original recommendations identified in 2007.

During FY 2013, the final CMOM Self-Assessment task of uploading the sanitary technical specifications to the SD1 website was reviewed extensively. It was determined that some revisions to the specifications are needed before permanently publishing them on the SD1 website. Parties interested in receiving the specifications can receive them electronically, by request, in the meantime. The final task is expected to be completed during FY 2014.

## 5.1 Strategic Business Plan

SD1 began a Strategic Business Plan in FY 2013, and will continue to develop the initiative throughout FY 2014. The new Strategic Business Plan is similar to the original 2007 CMOM Self-Assessment, in that it relies heavily on employees' input to identify opportunities, goals, strategies, and metrics. Throughout FY 2014, SD1 employees will develop, prioritize, and implement future projects to fulfill the organization's vision and mission, as defined by the Strategic Business Plan. The following are the key areas that the SD1 Strategic Business Plan will be focused on:

- Customer Satisfaction
- Financial Viability
- Dedicated Workforce
- Supportive Stakeholders
- Environmental Stewardship
- Operational Efficiency and Resiliency
- Optimal Management of Infrastructure

A more detailed outcome of the Strategic Business Plan will be provided in the CMOM FY 2014 Annual Report, as an example of SD1's continued efforts to comprehensively assess and improve its operations.

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**APPENDIX A:**

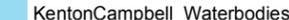
***Map of Sanitary and Storm Service Areas***

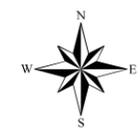
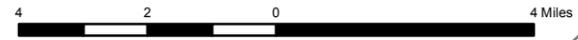
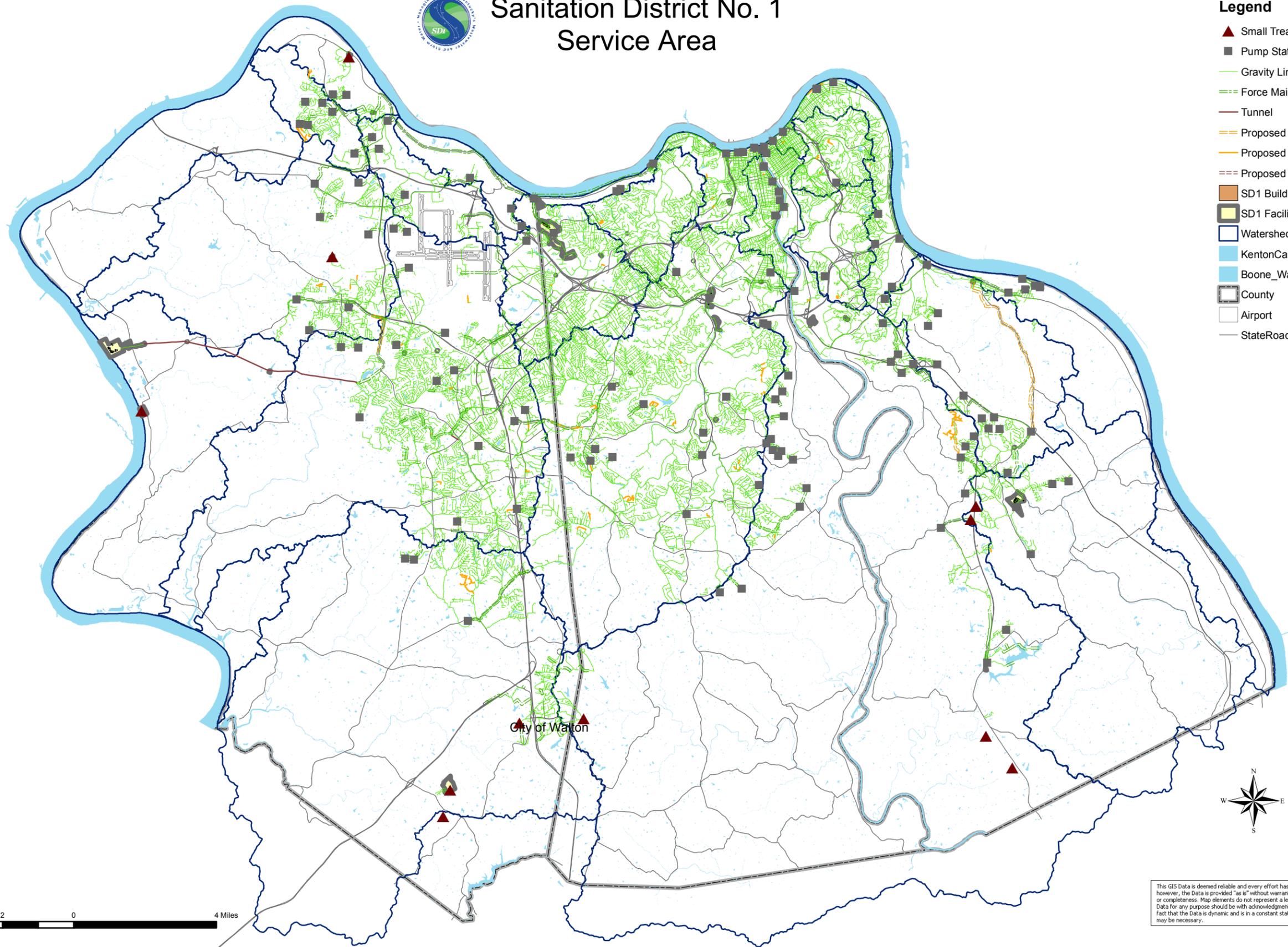
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# Sanitation District No. 1 Service Area

## Legend

-  Small Treatment Plant
-  Pump Station
-  Gravity Line
-  Force Main
-  Tunnel
-  Proposed Force Main
-  Proposed Gravity Line
-  Proposed Tunnel
-  SD1 Buildings
-  SD1 Facility Sites
-  Watersheds
-  KentonCampbell\_Waterbodies
-  Boone\_Waterbodies
-  County
-  Airport
-  StateRoads



This GIS Data is deemed reliable and every effort has been made to ensure accuracy; however, the Data is provided "as is" without warranty of accuracy, timeliness, reliability or completeness. Map elements do not represent a legal survey of the land. Use of this Data for any purpose should be with acknowledgment of its limitations, including the fact that the Data is dynamic and is in a constant state of maintenance. Field investigation may be necessary.



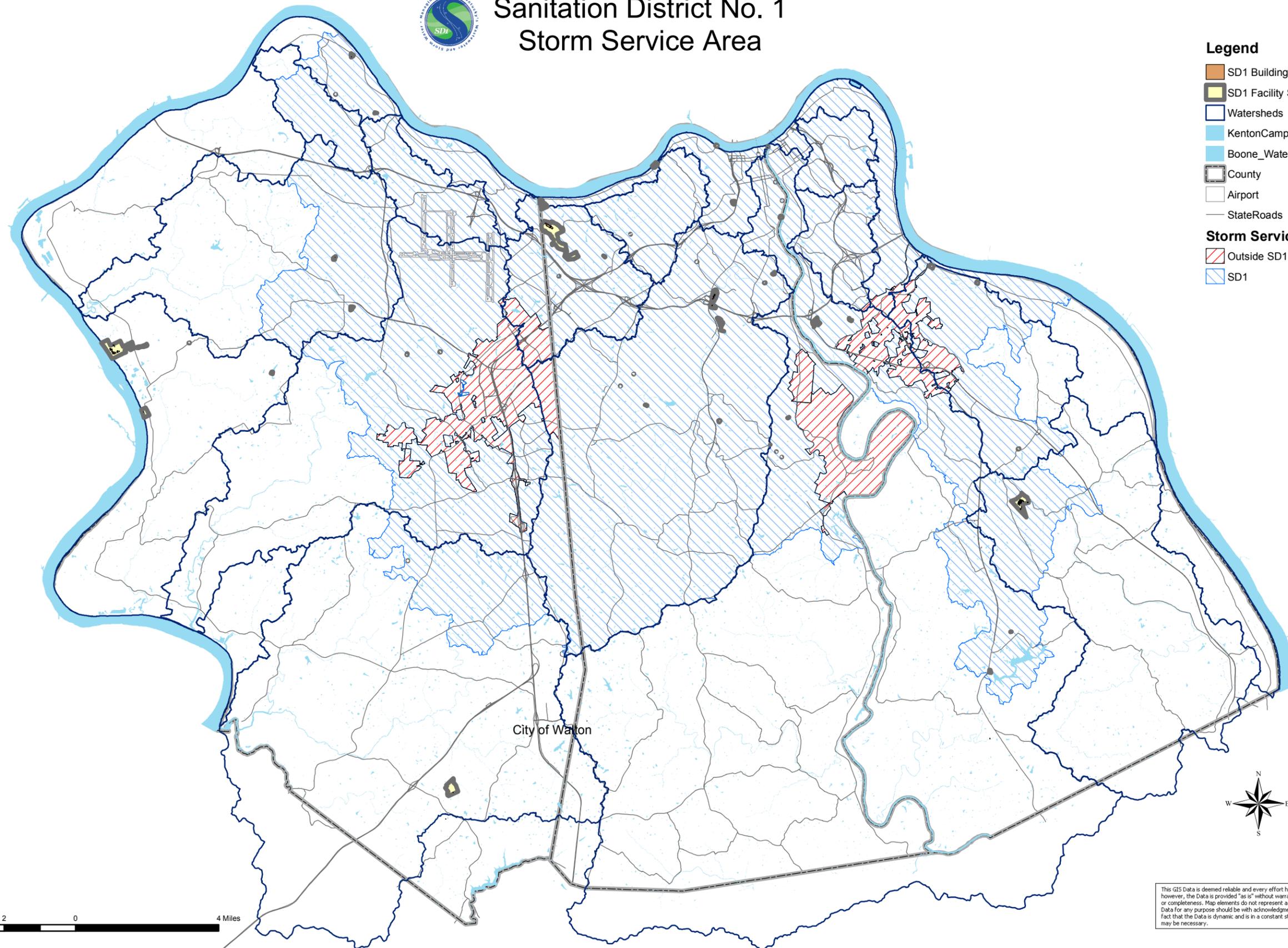
# Sanitation District No. 1 Storm Service Area

## Legend

- SD1 Buildings
- SD1 Facility Sites
- Watersheds
- KentonCampbell\_Waterbodies
- Boone\_Waterbodies
- County
- Airport
- StateRoads

## Storm Service Boundary

- Outside SD1
- SD1



This GIS Data is deemed reliable and every effort has been made to ensure accuracy; however, the Data is provided "as is" without warranty of accuracy, timeliness, reliability or completeness. Map elements do not represent a legal survey of the land. Use of this Data for any purpose should be with acknowledgment of its limitations, including the fact that the Data is dynamic and is in a constant state of maintenance. Field investigation may be necessary.

**APPENDIX B:**  
***FY 2013 Flow Monitoring Locations***

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# C-MOM 2013 Meter Classification

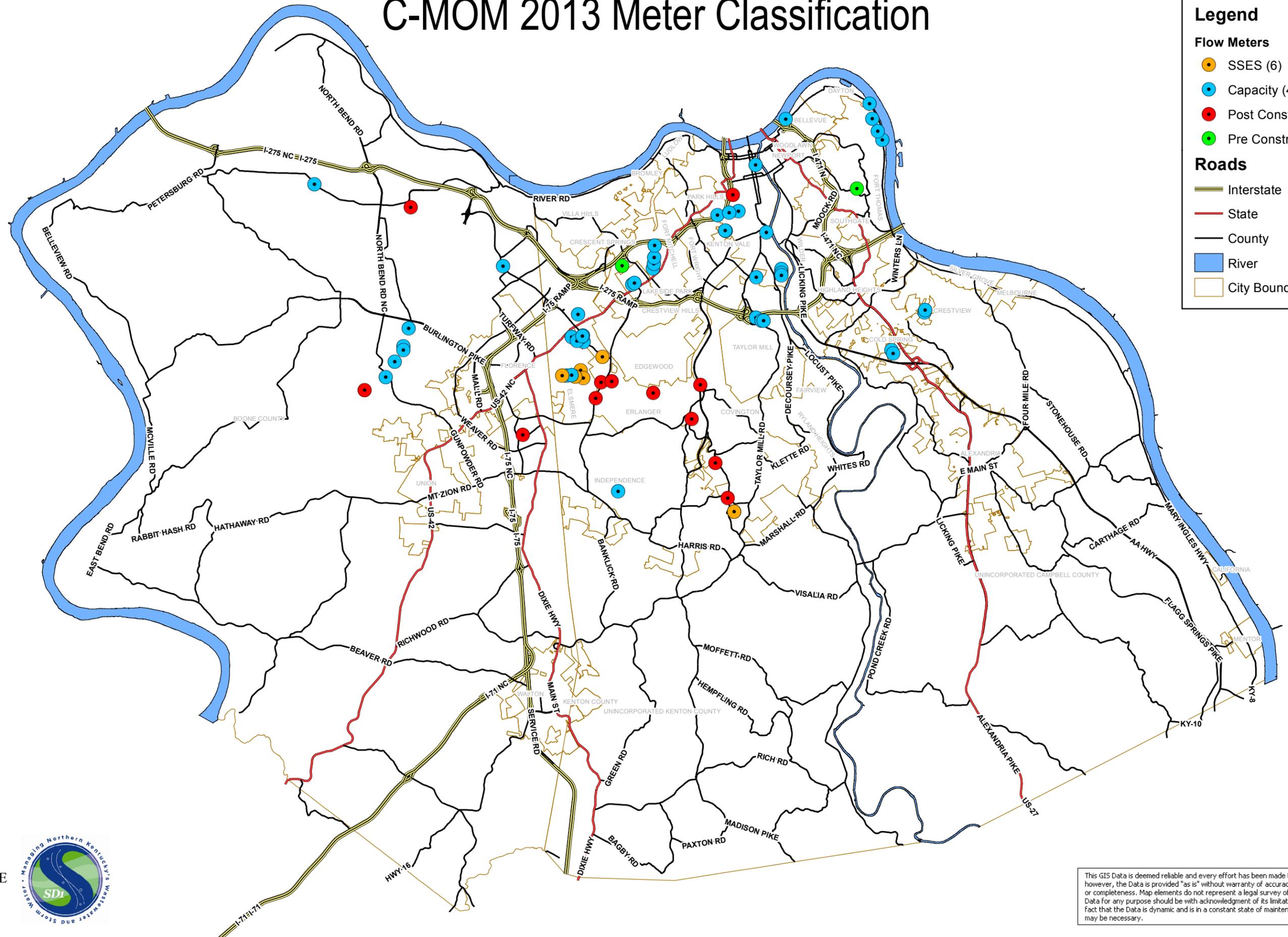
## Legend

### Flow Meters

- SSES (6)
- Capacity (47)
- Post Construction (12)
- Pre Construction (4)

### Roads

- Interstate
- State
- County
- River
- City Boundary



This GIS Data is deemed reliable and every effort has been made to ensure accuracy; however, the Data is provided "as is" without warranty of accuracy, timeliness, reliability or completeness. Map elements do not represent a legal survey of the land. Use of this Data for any purpose should be with acknowledgment of its limitations, including the fact that the Data is dynamic and is in a constant state of maintenance. Field investigation may be necessary.

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**APPENDIX C:**

***FY 2013 Example Educational Publications***

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SD1 is established by the Kentucky Department of Health.

**1946**

SD1 completes construction of the Bromley Wastewater Treatment Plant, Northern Kentucky's first wastewater treatment facility.

**1954**

Congress passes the Clean Water Act, regulating water quality in U.S. water bodies.

**1972**

KY Revised Statute 220, legislation that regulates sanitation districts, is amended, allowing SD1 to operate sewage and drainage systems in cities located in its jurisdictional boundary.

**1994**

SD1 begins an extensive rehabilitation program on the region's sanitary sewer systems.

**1996**

SD1 begins a regional storm water management program.

**2003**

SD1 enters into a consent decree with the U.S. EPA and the Kentucky Environmental and Public Protection Cabinet

**2005**

SD1 begins taking over ownership and maintenance responsibilities for the storm water infrastructure in many Northern Kentucky cities.

**2009**

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Wastewater and Storm Water



*Timeline*

**1948**

Congress passes the Federal Water Pollution Control Act.

**1970**

The U.S. Environmental Protection Agency (U.S. EPA) is established.

**1979**

SD1 constructs the Dry Creek Wastewater Treatment Plant, the largest and oldest wastewater facility currently operating in Northern Kentucky.

**1995**

SD1 takes over ownership and maintenance responsibilities for the sanitary sewer systems in many Northern Kentucky cities.

**1999**

The U.S. EPA establishes the Storm Water Phase II Program to control storm water discharges.

**2004**

SD1 opens Public Service Park, an educational facility designed to educate the public on storm water problems and solutions.

**2007**

SD1 opens the Eastern Regional Water Reclamation Facility in southern Campbell County.

**2012**

SD1 opens the Western Regional Water Reclamation Facility in western Boone County.

# ***SD1***

Managing Northern Kentucky's  
Wastewater and Storm Water



## ***Changes in Annual Water Usage Reflected on May Bill***

Beginning in May, you might see a difference in your SD1 bill based on changes in your water usage during the winter months. Your water usage is provided to SD1 by your local water utility.

When you use water to do things like take a shower, wash the dishes, brush your teeth or run a load of laundry, you create dirty water that goes down the drains inside your home. This dirty water enters the sanitary sewer system where it is carried to one of SD1's treatment plants to be cleaned. The amount of water you use during the winter months determines the sanitary sewer charge on your SD1 bill for the rest of the year.

For more information about how your bill is calculated or how to conserve water to minimize your SD1 bill, visit us on the web at [sd1.org/CustomerService/WasteWaterBillingInformation.aspx](http://sd1.org/CustomerService/WasteWaterBillingInformation.aspx).



**SD1**

Managing Northern Kentucky's  
Wastewater and Storm Water



## ***Don't Drain Your Wallet: Tips for Safe Disposal***

Did you know that what you flush or pour down your drain can potentially harm your home's plumbing, the sanitary sewer system and the environment?

By following the tips on the back of this insert, you can prevent costly repairs to wastewater pipes and protect the health of the community and local streams.



## *Protect your home, the sewer system and the environment by:*

- ▶ **Properly disposing of household grease from meat fats, lard, baking goods, butter and margarine, cooking oils, food scraps, sauces and dairy products by collecting these substances in a container and throwing them in your garbage can.**
  - Fats, oils and grease can build up in pipes, preventing your wastewater from making its way through the sewer pipes to SD1's treatment plant. When your wastewater is unable to move through the sewer pipes, raw sewage can back up into your home or yard or overflow into local streets and streams.
- ▶ **Throwing diapers, baby wipes and personal hygiene products in your garbage can. Do not flush these items down your toilet.**
  - Bulky items like diapers and hygiene products can also clog pipes, causing backups and overflows of sewage into streets, homes and streams.
- ▶ **Never flushing or pouring household chemicals like cleaners, medications, auto fluids, used motor oil, paint or lawn care products down a drain. Contact your county's Solid Waste Coordinator or visit [www.nkyhwh.org](http://www.nkyhwh.org) for information on how to properly dispose of these items.**
  - Hazardous chemicals can cause significant damage to sewer pipes and diminish the effectiveness of the wastewater treatment process. Pesticides, solvents and other cleaning materials can corrode plumbing and release toxic fumes through the sewer system. In addition, chemicals and contaminants that are not removed from the wastewater during the treatment process will be released into local streams along with the treated wastewater.



# SD1

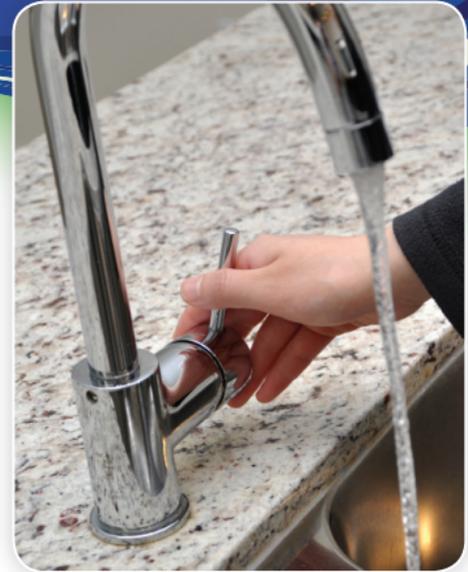
Managing Northern Kentucky's  
Wastewater and Storm Water



## *Conserve Water and Minimize Your SD1 Bill!*

The sanitary sewer charge on your SD1 bill is collected to support the removal and treatment of the wastewater you create each day through activities like taking a shower, washing the dishes and doing laundry. This charge is based on the amount of water you use during a 90-day period in the fall and winter each year according to records from your local water district. Measuring your water usage during this period allows SD1 to avoid charging you for water used outdoors for spring and summertime activities, such as washing your car or watering your lawn, while still reflecting typical water use that enters the sanitary sewer system year-round.

Because your sanitary sewer charge is calculated based on water usage, you can minimize your SD1 bill by following these everyday tips for conserving water.



# Tips for Conserving Water

- ▶ Regularly check toilets, faucets and shower heads for leaks, and promptly fix them.
- ▶ Monitor your water bill for unusually high use. Your water bill and meter are tools that can help you discover leaks.
- ▶ Turn the tap off when brushing your teeth.
- ▶ Take short showers instead of baths.
- ▶ Replace toilets, shower heads and faucets with WaterSense-labeled models or more efficient models that use less water.
- ▶ Use only one glass or reusable water bottle throughout the day to minimize dirty dishes.
- ▶ Run washing machines and dishwashers only when they are full.
- ▶ Upgrade washing machines and dishwashers to Energy Star rated models that use 50 percent less water and offer cycle and load adjustments to increase efficiency.
- ▶ Minimize your outdoor water usage during the months of October through April to prevent an increase in your SD1 bill.



To learn more about water conservation or how SD1 calculates your sanitary sewer bill, visit us on the web at [www.sd1.org](http://www.sd1.org). For questions about your bill, call us at 859-578-7450, or email us at [info@sd1.org](mailto:info@sd1.org).

## Overview

In 1998, SD1 entered into a cooperative agreement with the United States Geological Survey (USGS) to establish a streamgauge network in Northern Kentucky. This agreement planned for the construction and installation of eight monitoring stations throughout Northern Kentucky capable of measuring stream stage (height), local rainfall, and water quality. All stations were designed to be solar-powered and to have the ability to send data through satellite transmission to a web server so it could be accessed in real-time online.

During the spring of 1999, USGS crews constructed four of the eight stations along Banklick Creek, Elijah Creek, Fourmile Creek and Gunpowder Creek. These original stations were primarily designed to collect water quantity data, including stream stage and rainfall, that could be used to construct and calibrate hydrologic models for the area streams.

Throughout the fall of 2000, USGS crews constructed the remaining four stations along Cruises Creek, Mudlick Creek, Twelvemile Creek and Woolper Creek. In addition to expanding the stream stage and rainfall network, all eight stations were upgraded and equipped with continuous water quality monitors. These monitors continuously measure water temperature, dissolved oxygen, pH, specific conductance and turbidity at each of the eight sites.

During the summer of 2007, the network was further expanded to include five additional sites. Stations were installed along Dry Creek, the Licking River, Pleasant Run, Taylor Creek and Threemile Creek. All stations include instrumentation for water quantity and water quality data collection.

This regional monitoring network has been instrumental in SD1's efforts to manage storm water related issues through regional watershed management.

### Links

- All water quantity and water quality data are collected year round around at 15-minute intervals and are updated on the Internet every hour at:  
<http://water.usgs.gov/ky/nwis/qw>

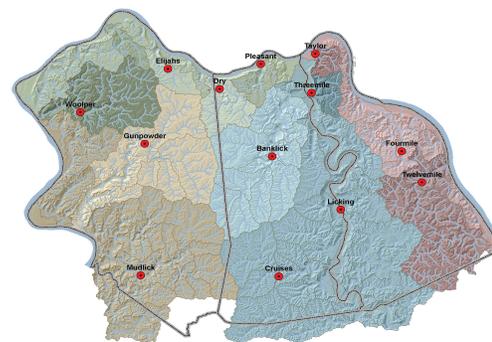


Monitoring stations send data through satellite transmission.



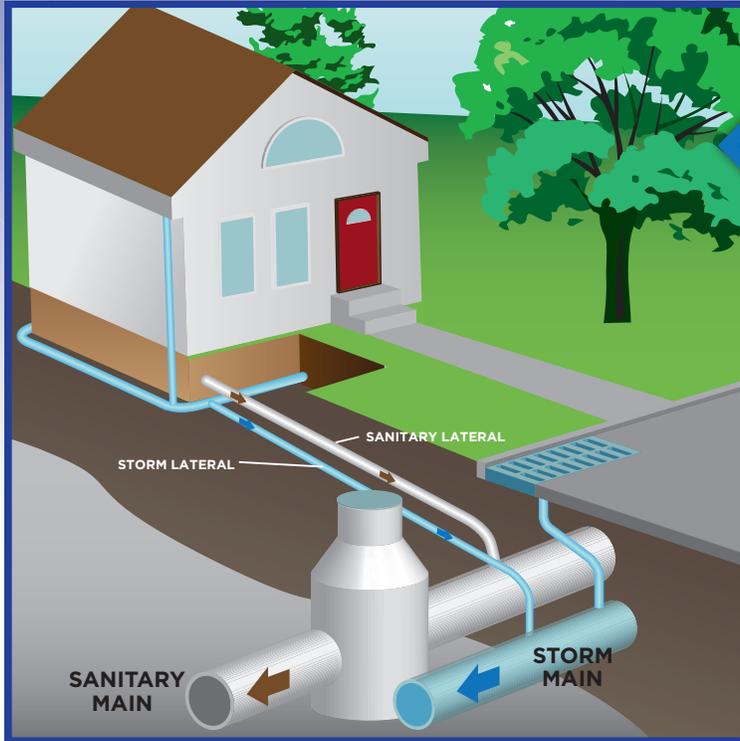
The water quantity and water quality sensors have protective housings.

USGS/SD1 Continuous Monitoring Stations



This map shows all the monitoring stations located in Northern Kentucky.

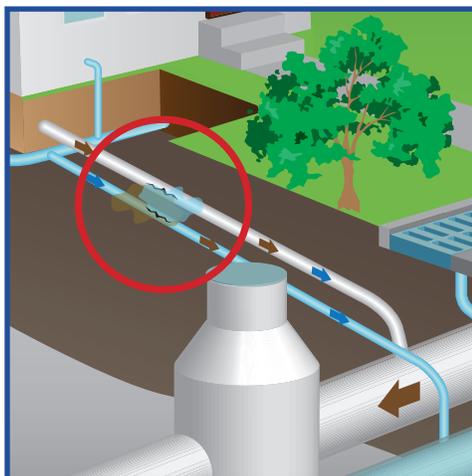
# UNDERSTANDING YOUR STORM SEWER LATERAL



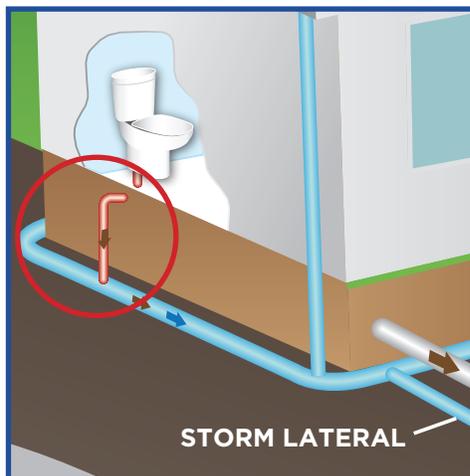
## ACCEPTABLE SYSTEM

Most residential areas carry storm water and wastewater in separate sewer systems. It is important that these systems are connected properly to your house to keep your home's wastewater from polluting storm water and our waterways. Below are three examples of the most common types of unacceptable connections to the storm water system.

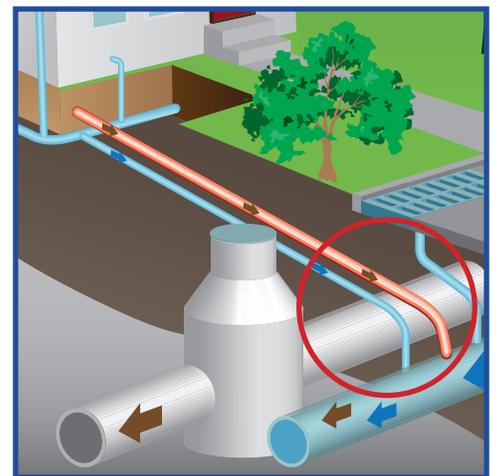
### Indirect Connection



### Direct Connection



### Direct Connection



# UNDERSTANDING YOUR STORM SEWER LATERAL

## **Q. What is a private storm sewer lateral?**

**A.** A private storm sewer lateral is an underground pipe that is a part of your home's plumbing. It conveys storm water from your home's downspouts and/or driveway drains to SD1's public storm sewer system. If you own your home, you also own your lateral from the end of your home's internal plumbing connection to the connection with SD1's storm sewer. You are responsible for maintaining your lateral, just like other pipes in your home.

## **Q. What is an illicit discharge?**

**A.** An illicit discharge includes any substance entering the storm water system that is not composed entirely of storm water, such as oil, paint, fertilizers and sewage. Illicit discharges pose a significant risk to the community since SD1's storm sewer system leads directly to the nearest body of water.

## **Q. Who is responsible for the maintenance of private storm sewer laterals?**

**A.** SD1 is responsible for the maintenance of the public storm sewer main. Homeowners are responsible for the maintenance of their private storm sewer lateral which runs from the homeowner's property to the main storm line.

## **Q. Why are defective laterals a problem?**

**A.** Broken laterals can cause sewage to enter the environment, which is a threat to the health and safety of the community.



# SIGN ME UP!

\_\_\_\_ Please send me more details about the Storm Drain Marking Program.

\_\_\_\_ I would like to participate in the program.

## MAIL, FAX or EMAIL:

Environmental Education  
Program Manager

SD1

1045 Eaton Drive

Ft. Wright, Kentucky 41017

Fax: 859-331-2436

Email: [info@sd1.org](mailto:info@sd1.org)



Group Name: \_\_\_\_\_  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone No.: \_\_\_\_\_  
Email: \_\_\_\_\_

Please complete the additional information below if you would like to participate in the Storm Drain Marking Program.

Preferred dates for participation: \_\_\_\_\_  
Preferred area of participation: \_\_\_\_\_  
Number of people participating: \_\_\_\_\_



SD1

1045 Eaton Drive  
Ft. Wright, Kentucky 41017  
Phone: 859-578-6745  
Fax: 859-331-2436  
E-mail: [info@sd1.org](mailto:info@sd1.org)

## HOW TO KEEP YOUR STREETS AND STREAMS CLEAN AND HEALTHY



Rake grass clippings, leaves and debris away from curbside storm drains.



Wash your car in the grass instead of the driveway to prevent soapy water from washing down drains.



Vegetation reduces storm water runoff, erosion and flooding, so plant trees, bushes and other vegetation wherever you can.



Pick up after your pets. Bacteria, viruses and parasites from pet waste can pollute local streams.



Do not discard or dump anything down a storm drain. The only thing that should go down a storm drain is rain water.



# Storm Drain Marking Program

## CLEAN STREETS SAVE STREAMS

Our curbside storm drains are major channels for pollution to enter local creeks and rivers. Many people dump oil and other pollutants into these storm drains, unaware that they empty directly into nearby streams where fish and other wildlife live.

After heavy rain events, storm water runs off our streets and parking lots into storm drains, picking up leaves, debris and litter along the way. In addition to being washed into local streams and polluting the water, these substances clog the pipes and cause streets to flood.

Keeping your streets and drains clean can help stop flooding, protect your waterways from harmful pollutants and keep wildlife safe.



## SAVE-A-STREAM

By participating in SD1's Storm Drain Marking Program, Save-A-Stream, you can help keep your streets and streams clean and beautiful.

This volunteer program is aimed at educating the public about the connection between storm drains and local waterways and what doesn't belong in a storm drain. Northern Kentucky has over 25,000 storm drains. SD1 hopes to mark all drains with the message "No Dumping, Drains to Waterways" or "Only Rain Down the Storm Drain" to help alert people to the dangers of dumping substances or littering in curbside drains.



## HOW TO GET INVOLVED

Gather a group from your neighborhood, school, scout troop, civic/social organization or business. Save-A-Stream is a community service project that all ages can find rewarding and fun, but please remember all children must be supervised by a responsible adult. SD1 will provide your group with free storm drain marking supplies.

### *Follow these simple steps to participate:*

1. Fill out and return the form on the other side of this brochure.
2. Schedule a day for participation, and reserve your free marking kit. Each kit includes markers, adhesive, wire brushes, door hangers, plastic gloves, detailed instructions, a map showing the drain locations in your area and additional safety supplies.

If you have any questions or concerns about the program, please contact SD1's Environmental Educator at 859-578-6745 or [info@sd1.org](mailto:info@sd1.org).



# BEST MANAGEMENT PRACTICES

## GOLF COURSES

Applied in the right amount, fertilizers provide nutrients to golf course turf, and pesticides protect it from harmful insects. If applied too heavily, however, excess nutrients and chemicals are left on the turf and in the soil. When it rains, these excess materials are washed into surrounding ponds and streams. Fertilizers and pesticides entering waterways can degrade water quality and result in damaging effects such as harmful algal blooms and depletion of oxygen, impacting aquatic life. Here's how you can help protect our waterways from this type of storm water pollution:

- For information on obtaining proper licenses for applying pesticides and fertilizers, contact the Kentucky Department of Agriculture at 502-573-0282.
- Observe directions, restrictions and precautions on labels. Failure to apply in accordance with all directions and restrictions is not only dangerous and wasteful, it is also illegal.
- Use fertilizers and pesticides at correct dosages and intervals to avoid excessive residues which cause harm to plants and animals.
- Store fertilizers and pesticides behind locked doors in original containers with labels intact.
- Clean equipment and containers properly. Do not wash equipment or containers over storm drains.
- Properly dispose of or professionally clean items that have come in contact with any pesticide or fertilizer residue. Do not store contaminated items on the ground or in uncovered outdoor areas.
- To prevent blockages and potential flooding during rain events, do not dispose of grass clippings into streams, storm drains/manholes or sanitary manholes.

1045 Eaton Drive

Ft. Wright, KY 41017

ph 859-578-7450

fax 859-331-2436

[www.sd1.org](http://www.sd1.org)

# SD1

Managing Northern Kentucky's  
Wastewater and Storm Water



### SD1'S HISTORY

Until the early to mid-1900s, Northern Kentucky dealt with wastewater the way most of the country did: raw sewage was dumped directly into the Ohio River and its tributaries.

We've come a long way since then.

To protect the health of the Northern Kentucky community and prevent the contamination of local waterways, SD1 was founded in 1946. At the time, each Northern Kentucky community had its own independent sewage system, and SD1 was charged with connecting these sewer systems to a centralized treatment plant so the region's wastewater could be cleaned and disinfected in one location.

When SD1's first treatment plant, built in Bromley in 1954, became outdated in 1979, SD1 opened a newer plant with the most state-of-the-art treatment technology at the time, the Dry Creek Wastewater Treatment Plant.

### SD1'S CONSENT DECREE

In the 1970s, Congress recognized a disturbing decline in water quality and passed the Clean Water Act, making the United States Environmental Protection Agency (U.S. EPA) responsible for reducing water pollution in the United States.

As SD1's responsibilities and service area grew, it became SD1's job to comply with the strict Clean Water Act regulations. In 2007, SD1 signed an agreement, or Consent Decree, with the U.S. EPA and the Kentucky Environmental and Public Protection Cabinet, taking strong action to reduce water pollution in Northern Kentucky's streams. The Clean Water Act's regulations affect SD1

After serving as the largest treatment plant in Northern Kentucky for more than 30 years, population growth placed strain on Dry Creek's treatment capacity. To help with the extra wastewater, SD1 built the Eastern and Western Regional Water Reclamation Facilities. These newer plants support Northern Kentucky's growing communities and provide them with the most advanced and efficient wastewater treatment technology available.

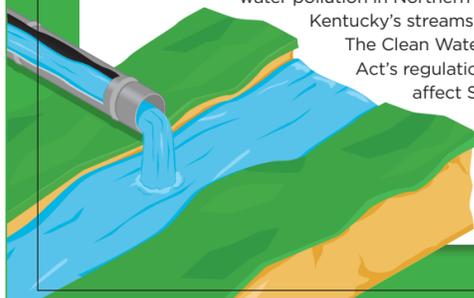
Today, SD1 is the second largest public sewer utility in Kentucky, with ownership and maintenance responsibilities for the majority of the sanitary sewer systems in Northern Kentucky.

because, like many wastewater utilities in the country, we have some sewer systems that carry wastewater and storm water through the same pipes. During a heavy storm, these pipes can become overloaded and overflow, releasing sewage and other pollutants into the environment.

Many sewer districts have entered into consent decrees like SD1, but SD1's Consent Decree is unique. It is a comprehensive approach that focuses on improving regional water quality by addressing other sources of water pollution in addition to reducing sewer overflows.

Through the Consent Decree, SD1 has undertaken the largest water quality improvement program in Northern Kentucky's history.

To learn more about SD1 and our programs, please visit [www.sd1.org](http://www.sd1.org).



**SD1**  
Managing Northern Kentucky's  
Wastewater and Storm Water



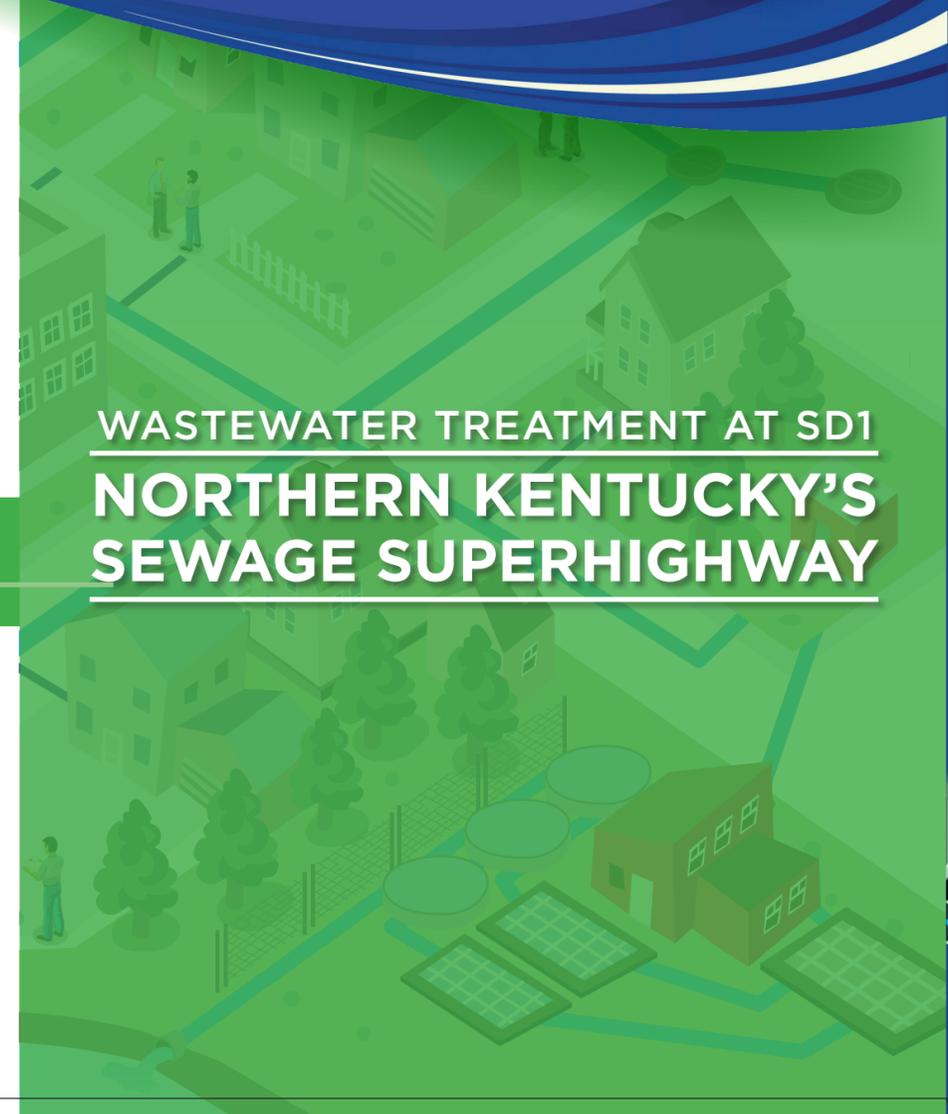
## WASTEWATER TREATMENT IN NORTHERN KENTUCKY

<p>SD1 is established by the Kentucky Department of Health.</p> <p><b>1946</b></p>	<p>SD1 completes construction of the Bromley Wastewater Treatment Plant, Northern Kentucky's first wastewater treatment facility.</p> <p><b>1954</b></p>	<p>SD1 constructs the Dry Creek Wastewater Treatment Plant, the largest and oldest wastewater facility currently operating in Northern Kentucky.</p> <p><b>1979</b></p>	<p>SD1 enters into a consent decree with the U.S. EPA and the Kentucky Environmental and Public Protection Cabinet.</p> <p><b>2005</b></p>	<p>SD1 opens the Western Regional Water Reclamation Facility in western Boone County.</p> <p><b>2012</b></p>
--	--	---	--	--



<p>Congress passes the Federal Water Pollution Control Act.</p> <p><b>1948</b></p>	<p>Congress passes the Clean Water Act, regulating water quality in U.S. water bodies.</p> <p><b>1972</b></p>	<p>SD1 takes over ownership and maintenance responsibilities for the sanitary sewer systems in many Northern Kentucky cities.</p> <p><b>1995</b></p>	<p>SD1 opens the Eastern Regional Water Reclamation Facility in southern Campbell County.</p> <p><b>2007</b></p>
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## WASTEWATER TREATMENT AT SD1 NORTHERN KENTUCKY'S SEWAGE SUPERHIGHWAY



SD1 provides several services to benefit the environment and the residents of Northern Kentucky, but one of the most important is the collection and treatment of wastewater.

Wastewater is the flow of used water from a community or city. Wastewater comes from many sources, including homes, businesses, schools and industries. While most people think of it as only sanitary sewage, wastewater flow includes water from showers, sinks, dishwashers, car washes, hospitals, food processing operations and more.

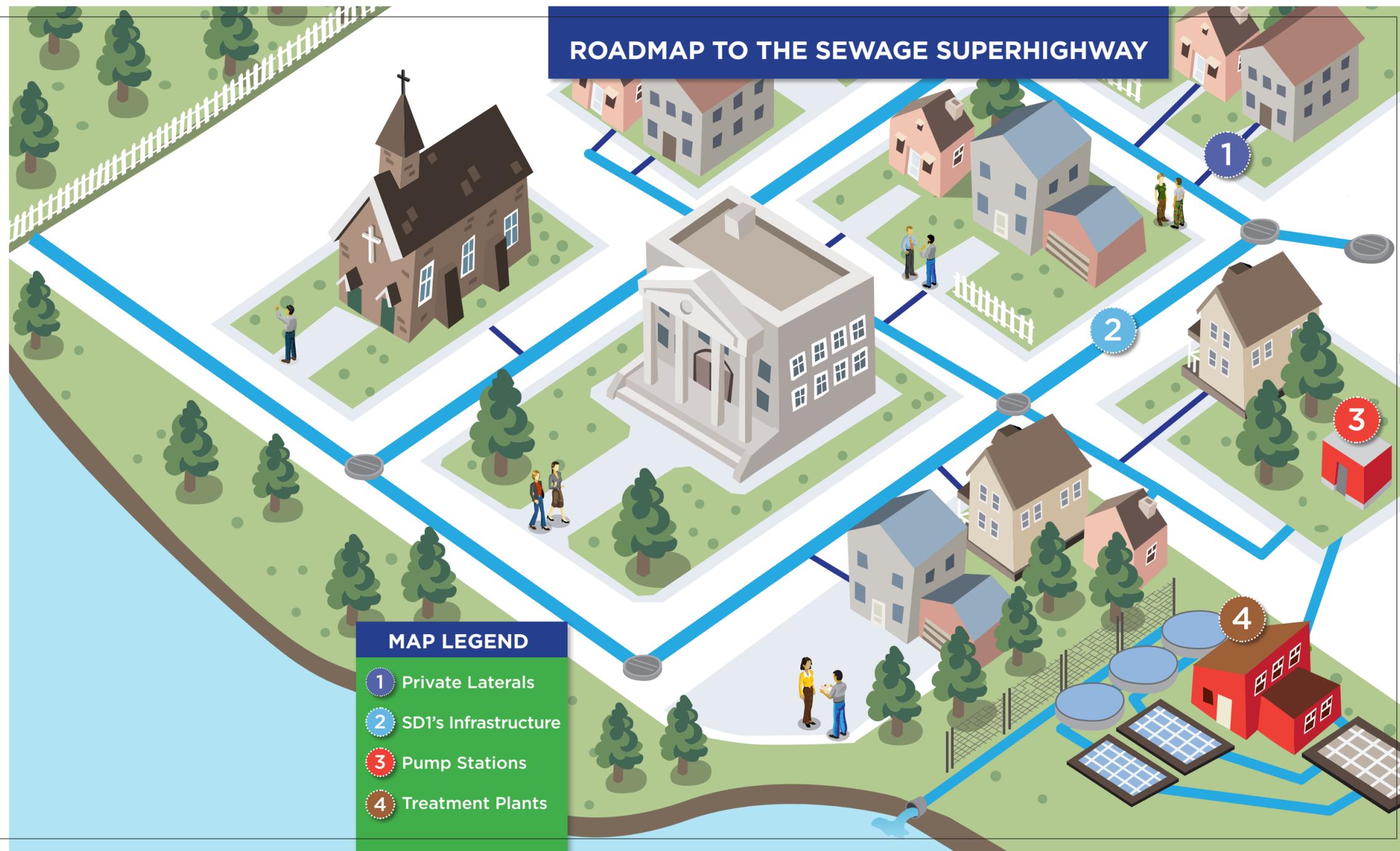
Wastewater from homes and businesses is funneled into SD1's sanitary sewer system where it can be safely transported to a wastewater treatment plant, cleaned and emptied into the Ohio River without hurting the environment or making people sick.

This wastewater system is like an enormous and complex sewage superhighway comprised of sewer lines, pump stations and treatment plants. Each drop of dirty water must travel a complicated route to reach its final destination, a treatment plant. Along the way, the wastewater flow moves from smaller pipes to larger mainlines and can be sped up, detoured and re-routed, just like road traffic.



Are you ready to learn more? Select a tab, and pull out the cards in the pocket to learn more about each stop along the sewage superhighway.

# ROADMAP TO THE SEWAGE SUPERHIGHWAY



**MAP LEGEND**

- 1 Private Laterals
- 2 SD1's Infrastructure
- 3 Pump Stations
- 4 Treatment Plants



## PRIVATE LATERALS

A private sanitary sewer lateral is your driveway to the sewage superhighway. Laterals are pipes that connect homes to SD1's public sanitary sewer system, moving wastewater from the drains in the building to the public system. Just like a driveway, if you own your home, you also own your lateral and are responsible for maintaining it.

Maintaining that private lateral is an important job. If your lateral is broken, blocked or improperly connected to SD1's system, your wastewater is unable to travel its course on the sewage superhighway and may back up into your home.

To make maintaining private laterals easier, some homes have sewer lateral cleanouts, which are vertical pipes that connect an underground lateral to the surface. Sewer lateral cleanouts have removable caps so homeowners and plumbers can quickly access laterals and prevent messes such as sewage backups in homes.



**SD1**Managing Northern Kentucky's  
Wastewater and Storm Water

## SD1'S INFRASTRUCTURE

Infrastructure refers to the huge network of underground pipes that carries wastewater from private laterals to a wastewater treatment plant. These underground pipe systems are the main roads that make up the sewage superhighway.

SD1's infrastructure is made up of about 1,700 miles of pipe that range in size from six inches wide to 12 feet tall. There are more than 7.5 miles of pipe large enough to drive a car through!

Some of these pipes are very old and some are brand new. SD1 did not build all of Northern Kentucky's infrastructure. Instead, we inherited neighborhood sewer systems and connected them together. Because of this, parts of SD1's system are more than 100 years old and were built to outdated standards or to serve much smaller populations.

The earliest infrastructure built in Northern Kentucky was combined sewer systems, which carry sewage from buildings and storm water runoff from rainfall in the same pipes. During dry weather, the pipes in SD1's combined sewer system carry mostly sewage from homes and

businesses and deliver it to a wastewater treatment plant for cleaning. During rainy or snowy weather, however, the pipes can become filled with runoff.

Separate sewer systems, on the other hand, have two networks of underground pipes. The sanitary network carries sewage to a wastewater treatment plant, and a separate storm water network carries runoff from rain water and snowmelt to the nearest body of water to prevent flooding. Separate sewer systems can be found in the more recently-developed areas of Northern Kentucky.

Because there are so many different types of infrastructure and many are very old, SD1 is constantly at work to check for damage and upgrade pipes to ensure the sewage superhighway is operating at maximum efficiency.



**SD1**

Managing Northern Kentucky's  
Wastewater and Storm Water



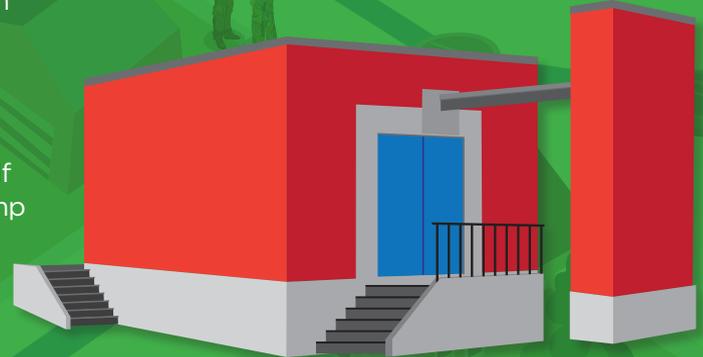
## PUMP STATIONS

On the underground sewage superhighway, pump stations are like entrance ramps to the interstate: they funnel wastewater from one pipe to another and increase the speed of the flow.

Most of the sewage in SD1's system flows to a wastewater treatment plant through gravity lines, pipes that are tilted downward so that sewage flows downhill. However, because Northern Kentucky is so hilly, sewage must be pumped uphill in some areas by one of SD1's pump stations.

Wastewater from many different pipes flows into one of SD1's pump stations and is then pumped into a sewer force main. Sewer force mains use pressure to pump wastewater upward. If rain or snowmelt cause a large amount of water to flow to pump stations, SD1 will turn on additional pumps.

SD1 protects pump station equipment with small buildings that allow employees to maintain and operate the equipment. These buildings are the only visible part of the pump station and are small compared to the large amount of machinery built underground.



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## TREATMENT PLANTS

The wastewater treatment plant is the final stop for wastewater on the sewage superhighway before it reaches the Ohio River.

In addition to several smaller wastewater treatment plants, SD1 operates three major wastewater facilities, including Dry Creek Wastewater Treatment Plant in Villa Hills, Eastern Regional Water Reclamation Facility in Alexandria and Western Regional Water Reclamation Facility in Petersburg.

SD1's treatment plants clean and disinfect Northern Kentucky's wastewater before eventually returning the treated water to the Ohio River. Several steps have to be taken during the treatment process to make sure the wastewater is clean enough to be released into the environment.

### SD1'S WASTEWATER TREATMENT PROCESS

In addition to haulers bringing in the contents of septic tanks, large pipes carry wastewater to the treatment plant. Immediately, this incoming water is treated to control odor. Then, it is filtered through bar screens that separate out debris. This debris is hauled away by trucks to a landfill.

Next, oxygen circulates through the water, stimulating the growth of microorganisms that eat the organic matter in the sewage. The microorganisms that digested the organic waste sink to the bottom, while the cleansed water on top flows into an exit pipeline.

The wastewater is then sent to new tanks to settle. The solids that settle out of the wastewater are treated to remove as much water from them as possible. The end product, known as biosolids, is collected in large dumpsters and sent to a landfill.

Before it is emptied into the river, wastewater is disinfected, either with chlorine or ultraviolet light. If chlorine is used, the water is treated again to neutralize the chlorine in order to make it safe for the environment.



### WHAT IS STORM WATER RUNOFF?

Most water that falls from the sky seeps into the ground; but if the ground is saturated, frozen or covered by hard surfaces like a concrete sidewalk or a paved parking lot, the water is unable to soak into the ground and instead flows over the land, creating what is known as storm water runoff.

Northern Kentucky's creeks, lakes and rivers all depend upon water to soak into the ground to replenish ground water levels. However, unmanaged runoff can cause problems in urbanized areas. When storm water flows over the ground and other hard surfaces, it picks up pollutants like litter, oil, pet waste and chemicals from fertilizers and pesticides and carries those pollutants to SD1's storm sewer system, which, instead of leading to a treatment plant, discharges

storm water and any pollutants it picks up directly to the nearest creek or river. Because SD1 doesn't treat storm water runoff like we do wastewater, these pollutants impact water quality in the local creeks and rivers we use for drinking water and recreation, threatening public health and harming aquatic life.

Excess storm water runoff can also cause flooding and erosion in developed communities, resulting in expensive and inconvenient property damage.

### SD1'S REGIONAL APPROACH TO STORM WATER MANAGEMENT

Storm water is the leading cause of pollution in our waterways. To help protect water quality and public health and to comply with the Clean Water Act of 1972, the United States Environmental Protection Agency (U.S. EPA) issued new storm water regulations in 1999.

At that time, Northern Kentucky cities owned and maintained their own storm sewer systems. Therefore, government leaders were faced with managing a storm water program and complying with new regulations

with no state or federal funding. SD1 was already managing the wastewater infrastructure in Northern Kentucky, and since the two are interconnected, local leaders asked for SD1's help in managing storm water.

In 2003, SD1 entered into an agreement with local governments in Northern Kentucky and developed a Regional Storm Water Management Program. This program complies with federal and state storm water regulations and protects Northern Kentucky waterways from polluted storm water runoff. In 2009, SD1 began taking over operation and maintenance responsibilities of the public storm sewer infrastructure.

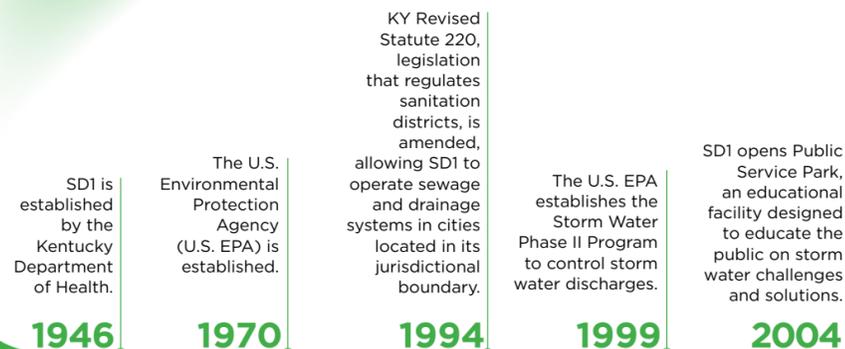
To learn more about SD1 and our storm water programs, please visit [www.sd1.org](http://www.sd1.org).



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## STORM WATER MANAGEMENT IN NORTHERN KENTUCKY



## SD1'S STORM WATER PROGRAM SOLVING THE STORM WATER PUZZLE

SD1 provides several services to benefit the environment and the residents of Northern Kentucky, one of which is improving the health of our watersheds through careful management and prevention of the challenges created by storm water runoff.

A watershed is an area of land that drains rainfall and snowmelt into the body of water it surrounds, such as a creek, river, lake or ocean. Watersheds can be many different shapes and sizes and are not confined by city, state or even national borders. Smaller watersheds that drain to creeks or lakes can be identified inside of larger watersheds that drain to rivers and oceans.

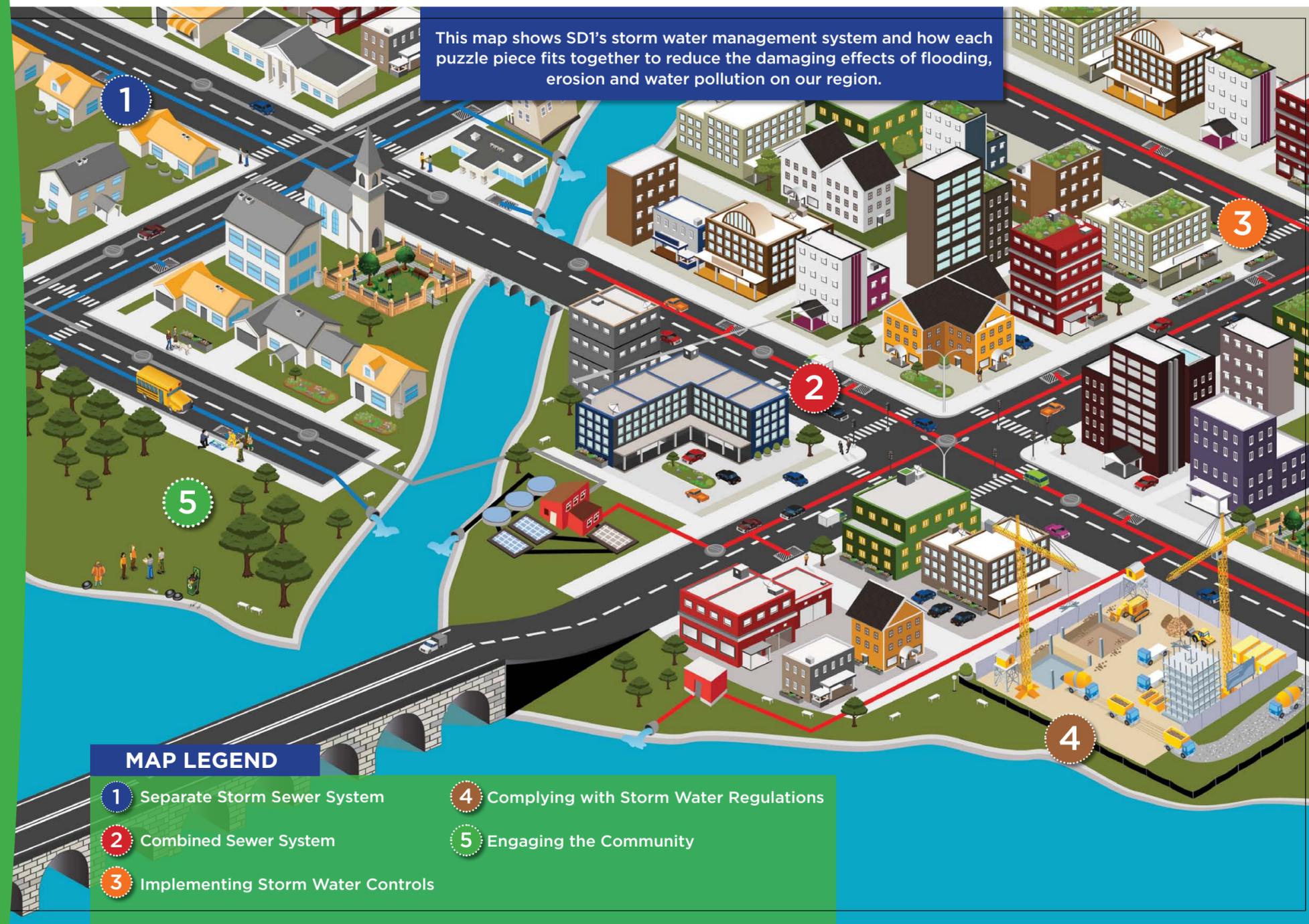
Creeks and rivers don't start and stop in just one city or town. Because of this, SD1 understands that pollution, erosion, flooding and problems such as a clogged or overwhelmed storm pipe in one city can affect other cities and people within the same watershed.

Maintaining an effective storm water management program in the community is like a complex puzzle, and all the pieces must fit together to ensure that storm water is safely collected and directed to the proper places without impacting public health, water quality or the environment. When the puzzle pieces fit together, we have a healthy watershed.

Are you ready to learn more? Select a tab, and pull out the cards in the pocket to learn the importance of storm water management and how each of us can help protect our watersheds.



This map shows SD1's storm water management system and how each puzzle piece fits together to reduce the damaging effects of flooding, erosion and water pollution on our region.



- MAP LEGEND**
- 1 Separate Storm Sewer System
  - 2 Combined Sewer System
  - 3 Implementing Storm Water Controls
  - 4 Complying with Storm Water Regulations
  - 5 Engaging the Community

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Wastewater and Storm Water

## MANAGING STORM WATER WITH THE SEPARATE SEWER SYSTEM

The underground pipes that carry storm water make up one vital piece of the storm water puzzle. Every day, Northern Kentucky residents rely on two different systems to safely carry storm water away from homes, businesses and roads to local creeks and rivers.

The first type of system is known as the separate sewer system which contains storm pipes (blue pipes) and sanitary pipes (gray pipes). The storm sewer pipes carry runoff from rain water and snowmelt to the nearest body of water, while the sanitary pipes carry sewage to a wastewater treatment plant.

SD1 strives to predict future needs when improving storm sewer systems to ensure future generations have a functioning system. In order to ensure Northern Kentucky's storm sewer infrastructure is effective, SD1, local government, business owners and homeowners must all work closely together. SD1 currently works to maintain the separate sanitary and storm sewer systems, whereas cities and counties partner with SD1



to maintain other components of the storm drainage system, such as road side ditches. Homeowners and local businesses have continued to be responsible for drains and pipes that convey storm water solely from their private property.

On the next card, you will learn about the second type of sewer system in Northern Kentucky that conveys storm water, the combined sewer system.

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## MANAGING STORM WATER WITH COMBINED SEWER SYSTEM

The second type of sewer system in Northern Kentucky that conveys storm water is a combined system and it presents unique challenges to the storm water management puzzle.

The combined sewer system was one of the earliest types of infrastructure built in Northern Kentucky and was designed to carry both sewage from buildings and storm water runoff from rainfall through the same pipes. Typically, the water in these pipes is carried to one of SD1's treatment plants to undergo treatment before being discharged into a creek or river.

During rain events, however, excess water can exceed the capacity of the combined system's pipes. When the combined sewer system's capacity is exceeded, the mixture of storm water and wastewater flowing through the pipes overflows into the environment, causing flooding, water pollution and risks to public health. This is known as a combined sewer overflow or CSO.

When river levels continue to rise due to heavy rains, SD1's combined sewer system can't release the mixture of storm water and wastewater through CSOs. This is when SD1's flood pump stations go into action, forcing water out of



the pipes while simultaneously pumping flood water out of our communities. Flood stations are activated at varying Ohio River flood stages.

To reduce the amount of CSOs that occur annually and prevent flooding associated with excess rainfall, SD1 utilizes innovative storm water controls other than pipes and structures to decrease the quantity of storm water that enters and travels through our combined system.



## IMPLEMENTING STORM WATER CONTROLS

The use of innovative storm water controls that focus on reintroducing natural features like wetlands and other vegetation to the region is another important piece of the storm water management puzzle. Natural storm water controls mimic nature's ability to clean and retain storm water, protecting water quality and minimizing the erosion of creeks and rivers.

Undeveloped landscapes like grassy areas, forests and wetlands act like sponges, slowing down and soaking up storm water runoff before it enters our sewer systems, reducing overflows and naturally filtering the water of pollutants. Traditional infrastructure approaches to managing storm water include systems of concrete curbs, gutters and pipes. Natural and innovative solutions, however, include rain gardens, vegetated roofs, biofiltration swales and planter boxes, among others.

Natural storm water controls can be as effective as traditional storm water controls and can provide additional environmental, economic and social benefits



to the Northern Kentucky community. Natural solutions beautify neighborhoods while effectively managing storm water runoff and may also restore habitats for birds and wildlife in urban settings. Natural controls can provide outdoor recreational opportunities or be incorporated into existing recreation areas.

In combination with more traditional structures, natural storm water solutions provide our community with a cost-effective way to comply with regulations and improve water quality in our watersheds.

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Wastewater and Storm Water

## COMPLYING WITH STORM WATER REGULATIONS

Since 2003, SD1 has managed a very important piece of the storm water puzzle, Northern Kentucky's Regional Storm Water Management Program. With the help of the cities in SD1's service area that participate in the Regional Storm Water Management Program, SD1 complies with Clean Water Act regulations by implementing six programs known as Minimum Control Measures:

- 1. PUBLIC EDUCATION** - SD1 educates the community about how storm water pollution affects the water we use daily, the environment and our health.
- 2. COMMUNITY INVOLVEMENT** - Read more about this important piece of the Regional Storm Water Management Program on the pull-out card dedicated to this topic.
- 3. ILLICIT DISCHARGE PROGRAM** - SD1 must detect and correct illicit discharges, which include any substance entering the storm water system that is not composed entirely of storm water.
- 4. REGULATION OF CONSTRUCTION SITES**  
SD1 works closely with contractors and builders to prevent dirt, sediment and pollutants from



entering our streams through controlling runoff from construction sites.

- 5. REGULATION OF DEVELOPED SITES** - SD1 works closely with the development community to implement storm water controls that manage runoff from developed sites.
- 6. POLLUTION PREVENTION** - SD1 and the cities in our service area help to reduce water pollution through control measures like street sweeping and covering materials like salt piles that are stored outdoors, minimizing the potential for pollutants associated with municipal (city, county and SD1) operations to be carried into local streams.

**SD1**Managing Northern Kentucky's  
Wastewater and Storm Water

## ENGAGING THE COMMUNITY

It's important for every member of the Northern Kentucky community to work together to control storm water runoff and prevent the challenges it causes, like water pollution, flooding and erosion. Community members should have a voice in how SD1 manages storm water, and SD1 provides many opportunities for Northern Kentucky residents to take an active role in storm water management. Some of these opportunities include:

- **The Storm Water Advisory Committee** – This committee gives community members a chance to discuss the latest developments in SD1's Storm Water Management Program and provide input on new storm water policies.
- **The Northern Kentucky Hazardous Waste Collection Event** - This event promotes proper disposal of household hazardous wastes (such as paint, lawn chemicals and oil) that have the potential to impact water quality.
- **Creek and River Cleanups** - SD1 promotes and sponsors cleanups to encourage Northern Kentucky residents to actively protect our streams from pollution.
- **SD1's Storm Drain Marking Program** - Volunteer groups help educate the public that storm drains lead to the nearest body of water by marking the drains with a "No Dumping, Drains to Waterways" label.
- **SD1's Storm Water Hotline** - By calling this hotline at 859-578-6745, the public can report illegal dumping, flooding or erosion and find out more information on SD1's many storm water programs.
- **Practicing Healthy Household Habits** – Homeowners can reduce storm water pollution by taking simple, everyday measures, such as sweeping up yard debris, picking up after pets and properly maintaining vehicles to prevent leaks, among many others.

SD1 can't complete the storm water management puzzle alone and understands that a successful regional approach to managing storm water is only possible through strong community involvement.



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**APPENDIX D:**

***FY 2013 Violations Report for Industrial Pretreatment Program***

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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00002**                      **Southern Graphic Systems, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	11-Dec-12	Copper = 37.6 mg/L, Chromium = 40.9 mg/L	19-Feb-13				
				WF	11-Jan-13	Written Notice of Violation (NOV) and fine. Written Notice of Violation (NOV)	\$500.00
NC-P	12-Dec-12	Copper = 14.5 mg/L, Chromium = 19.4 mg/L	19-Feb-13				
				WF	11-Jan-13	Written Notice of Violation (NOV) and fine. Written Notice of Violation (NOV)	\$500.00
NC-P	13-Dec-12	Copper = 9.73 mg/L, Chromium = 9.92 mg/L	19-Feb-13				
				WF	11-Jan-13	Written Notice of Violation (NOV) and fine. Written Notice of Violation (NOV)	\$500.00
NC-P	14-Dec-12	Chromium = 7.90 mg/L	19-Feb-13				
				WF	11-Jan-13	Written Notice of Violation (NOV) and fine. Written Notice of Violation (NOV)	\$500.00
SNC-P	31-Dec-12	Copper, total Concentration TRC Significant Non-Compliance (SNC)  3 of 8 concentration daily results exceeded the Technical Review Criteria (TRC) limit of 33% for the SNC determination period from 7/1/12 to 12/31/12.	01-Apr-13				
				WF	16-Jan-13	Written Notice of Violation (NOV) and fine.	\$500.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00002**                      **Southern Graphic Systems, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
SNC-P	31-Dec-12	Chromium, total Concentration TRC Significant Non-Compliance (SNC)  4 of 8 concentration daily results exceeded the Technical Review Criteria (TRC) limit of 33% for the SNC determination period from 7/1/12 to 12/31/12.	01-Apr-13				
				WF	16-Jan-13	Written Notice of Violation (NOV) and fine.	\$500.00

Permit: **IND-00014**                      **Camco Chemical Co. Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	19-Mar-13	Oil & Grease, Hydrocarbons TRC Non-Compliance. Daily Limit was exceeded. The Concentration Result was 112.8 mg/L while the Concentration Daily Limit was 50 mg/L. The Violation occurred for Sample 'AC29520' on the Sample Date of '3/19/2013 11:00:00 AM' and for Monitoring Point 'MH 1030013'.	08-Jun-13				
				W	01-May-13	Written Notice of Violation for G&O-Hydrocarbon on 3/19/13	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00014**                      **Camco Chemical Co. Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	19-Mar-13	Zinc, total TRC Non-Compliance. Daily Limit was exceeded. The Concentration Result was 47.0 mg/L while the Concentration Daily Limit was 3.5 mg/L. The Violation occurred for Sample 'AC29519' on the Sample Date of '3/19/2013 11:00:00 AM' and for Monitoring Point 'MH 1030013'.	08-Jun-13				
				WF	01-May-13	Written Notice of Violation and fine for high Zn concentration on 3/19/13	\$500.00

Permit: **IND-00019**                      **Blue Grass Quality Meats**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	21-Sep-12	Unintentional bypass of pH PT due to equipment failure during SD1 sampling in Sept. 2012 on 9/13/12. He called to say the transmitter system failed. Ph was above the 10.0 limit for 1 hour and 12 mins. Of which 44 mins was above the 11.0 limit. Issued a verbal NOV since he gave immediate notification of the problem and since it is the first violation in a year.					
				V	21-Sep-12	Verbal Notice of Violation (NOV)	

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00019 Blue Grass Quality Meats**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	12-Jun-13	On 6/12/13, they had a high pH violation for 1 hour and 54 minutes, peak pH was 10.6 found during SD1 sampling. Gave BGQM a Verbal NOV for this pH violation.	12-Jun-13				
				V	01-Jul-13	Verbal Notice of Violation for 6/12/13, they had a high pH violation for 1 hour and 54 minutes, peak pH was 10.6 found during SD1 sampling.	\$0.00

**Permit: IND-00033 Schwan's Global Supply Chain, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	21-Aug-12	Verbal NOV: pH excursion >12 for more than five minutes twice and >11 for more than 15 minutes twice.	22-Aug-12				
				V	23-Aug-12	Verbal Notice of Violation (NOV)	\$0.00
NC-O	02-Oct-12	Verbal NOV: Pretreatment Bypass, see phone event(10/1//12) for industry's initial report. Bypass was reported on time(see also Email Event, 10/4/12 for the report), however, the discharge was not monitored to verify compliance. Phone message/voice mail was left on 10/9/12(see Phone Event) to explain the policy and notify the industry that a violation was being issued.	04-Oct-12				
				V	09-Oct-12	Verbal Notice of Violation (NOV)	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00033**                      **Schwan's Global Supply Chain, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	19-Mar-13	Non-compliance parameter violation - pH violation The pH fell outside the Districts limits of 6.0 to 10.0. The pH was recorded at levels above 10.0 for an extent of time that violated our time frame limit and also below the violation limit of 5.0 (see attached graph and also refer to the Sanitation District No. 1 Rules and Regulations on pH for the Dry Creek Wastewater Treatment plant).	26-Jun-13				
				W	03-Apr-13	Written Notice of Violation (NOV)	\$0.00

Permit: **IND-00036**                      **Ameripride Linen & Apparel Services**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	13-Sep-12	pH Violation	29-Oct-12				
				WF	18-Sep-12	Written Notice of Violation (NOV) and fine.	\$1,000.00
NC-R	26-Oct-12	Late NOV Response	05-Nov-12				
				W	30-Oct-12	Written Notice of Violation (NOV)	\$0.00
NC-P	13-Feb-13	O&G, Hydrocarbon = 61.1mg/L					
				W	19-Mar-13	Written Notice of Violation (NOV)	\$0.00
NC-P	13-Feb-13	Zinc, Total = 7.8 mg/L, TRC Non-Compliance	08-May-13				
				W	19-Mar-13	Written Notice of Violation (NOV)	\$0.00
NC-P	14-Feb-13	pH detected <5 on 2/14/13 and >10 for 2 hours, 20 min. on 2/15/13					
				WF	19-Mar-13	Written Notice of Violation (NOV) and fine.	\$1,000.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00036**      **Ameripride Linen & Apparel Services**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	15-Feb-13	O&G, Hydrocarbon = 114.5 mg/L, TRC Non-Compliance					
				W	19-Mar-13	Written Notice of Violation (NOV)	\$0.00
SNC-P	01-Apr-13	Zinc, Total Concentration, TRC Significant Non-Compliance (SNC)  1 of 3 concentration daily results exceeded the Technical Review Criteria (TRC) limit of 4.2 mg/L the SNC determination period from 10/1/12 to 3/31/13.	08-May-13				
				W	06-May-13	Written Notice of Violation (NOV)	\$0.00
NC-P	16-Apr-13	O&G, Hydrocarbon = 103 mg/L, TRC Non-Compliance					
				WF	16-May-13	Written Notice of Violation (NOV) and fine.	\$500.00
NC-P	17-Apr-13	O&G, Hydrocarbon = 107 mg/L, TRC Non-Compliance					
				WF	16-May-13	Written Notice of Violation (NOV) and fine.	
NC-R	20-Apr-13	Late Fine Payment: Fine payment for NOV (date 3/19/13) was not received by the due date of 4/19/13.					
				WF	30-Apr-13	Written Notice of Violation (NOV) and fine.	\$500.00
NC-P	03-Jun-13	Oil & Grease, Hydrocarbon = 63.0 mg/L					
				WF	07-Aug-13	Written Notice of Violation (NOV) and fine.	\$750.00
NC-P	06-Jun-13	Oil & Grease, Hydrocarbon = 58.6 mg/L					
				WF	07-Aug-13	Written Notice of Violation (NOV) and fine.	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00036 Ameripride Linen & Apparel Services**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-R	20-Jun-13	Resample data(O&G) for NOV (date 5/17/13) was received late.					
				WF	07-Aug-13	Written Notice of Violation (NOV) and fine.	\$750.00

**Permit: IND-00039 Duro Designer Company, Inc. (Walton)**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	31-Jul-12	Copper, total TRC Non-Compliance. Daily Limit was exceeded. The Concentration Result was 10.1 mg/L while the Concentration Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC11336' on the Sample Date of '7/31/2012 9:30:00 AM' and for Monitoring Point 'MH 2280047'.	19-Oct-12				
				WF	21-Sep-12	Written Notice of Violation (NOV) and fine.	\$3,000.00
NC-P	01-Aug-12	Copper, total TRC Non-Compliance. Daily Limit was exceeded. The Concentration Result was 11.7 mg/L while the Concentration Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC11337' on the Sample Date of '8/1/2012 10:20:00 AM' and for Monitoring Point 'MH 2280047'.	19-Oct-12				
				WF	25-Sep-12	Written Notice of Violation (NOV) and fine.	\$3,000.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

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 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00039**                      **Duro Designer Company, Inc. (Walton)**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	02-Aug-12	Copper, total TRC Non-Compliance. Daily Limit was exceeded. The Concentration Result was 39 mg/L while the Concentration Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC11410' on the Sample Date of '8/2/2012 9:15:00 AM' and for Monitoring Point 'MH 2280047'.	19-Oct-12				
				WF	25-Sep-12	Written Notice of Violation (NOV) and fine.	\$3,000.00
SNC-P	31-Dec-12	Copper, total Concentration TRC Significant Non-Compliance (SNC)  3 of 8 concentration daily results exceeded the Technical Review Criteria (TRC) limit of 33% for the SNC determination period from 7/1/12 to 12/31/12.	01-Apr-13				
				W	18-Jan-13	Written Notice of Violation (NOV)	\$0.00
NC-P	03-Apr-13	Zinc, Total = 4.99 mg/L, TRC Non-Compliance					
				W	09-May-13	Written Notice of Violation (NOV)	\$0.00
NC-P	23-May-13	Zinc, Total = 4.54 mg/L, TRC Non-Compliance					
				WF	19-Jun-13	Written Notice of Violation (NOV) and fine.	\$500.00
NC-R	13-Jun-13	Late Response: Violation response was received late for NOV date 5/9/13.	17-Jun-13				
				V	19-Jun-13	Verbal Notice of Violation (NOV)	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00045**                      **A.O. Smith Corp., Protective Coating Division**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	14-May-13	Nickel, total TRC Daily Limit was exceeded. The Result was 10.785 mg/L while the Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC33934' on the Sample Date of '5/14/2013 2:00:00 PM' and for Monitoring Point 'MH 1040162'.	10-Jul-13				
				W	03-Jun-13	Written Notice of Violation (NOV)	\$0.00
NC-P	15-May-13	Nickel, total TRC Daily Limit was exceeded. The Result was 10.055 mg/L while the Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC34008' on the Sample Date of '5/15/2013 2:30:00 PM' and for Monitoring Point 'MH 1040162'.	10-Jul-13				
				W	03-Jun-13	Written Notice of Violation (NOV)	\$0.00
NC-P	16-May-13	Nickel, total TRC Daily Limit was exceeded. The Result was 7.05 mg/L while the Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC34085' on the Sample Date of '5/16/2013 1:30:00 PM' and for Monitoring Point 'MH 1040162'.	10-Jul-13				
				W	03-Jun-13	Written Notice of Violation (NOV)	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00045                      A.O. Smith Corp., Protective Coating Division**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	17-May-13	Nickel, total TRC Daily Limit was exceeded. The Result was 7.36 mg/L while the Daily Limit was 5 mg/L. The Violation occurred for Sample 'AC34164' on the Sample Date of '5/17/2013 11:00:00 AM' and for Monitoring Point 'MH 1040162'.	10-Jul-13				
				W	03-Jun-13	Written Notice of Violation (NOV)	\$0.00

**Permit: IND-00053                      White Castle Distributing, LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	23-May-13	The pH fell outside the Districts limits of 6.0 to 10.0. The pH violations were recorded below 5.0 multiple times for a long period of time. The pH level was recorded to be below 6 for over an hour on 04/25/2013 and 04/26/2013. These pH levels are violations of our Rules and Regulations. (see attached graph and also refer to the Sanitation District No. 1 Rules and Regulations on pH for the Dry Creek Wastewater Treatment Plant).					
				W	23-May-13	Written Notice of Violation (NOV)	\$0.00

**Permit: IND-00054                      Perfetti Van Melle USA**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00054 Perfetti Van Melle USA**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	24-Aug-12	During the sampling event that occurred between 8/13/2012 through 8/23/2012 your facility demonstrated multiple pH excursions outside SD1 and Federal EPA limits. The excursions occurred on 8/16/2012 and 8/22/2012 (see enclosed pH graph). All excursions violated the SD1 and Federal EPA limit that states that pH shall not fall below 5.0 Standard Units.	27-Sep-12				
				WF	24-Aug-12	Written Notice of Violation (NOV) and fine.	\$500.00

**Permit: IND-00057 Mubea Inc. (Industrial Rd)**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-R	21-Oct-12	Late Reporting: 3rd Quarter Self Monitoring Report was submitted late.	23-Oct-12				
				W	30-Oct-12	Written Notice of Violation (NOV)	\$0.00

**Permit: IND-00060 Givaudan Flavors, Corporation**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-R	15-Apr-13	Failure to Monitor Bypass/Late Reporting of Bypass: On 4/15/13 a bypass of pretreatment at this facility occurred for approximately seven and a half hours. An estimated 216,000 gallons of untreated wastewater was discharged to the sanitary sewer during this time. The discharge was not monitored for pH during this time. The bypass report was received late.	16-Apr-13				

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00060                      Givaudan Flavors, Corporation**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				V	23-Apr-13	Verbal Notice of Violation (NOV)	\$0.00

**Permit: IND-00063                      Ultra Environmental Services, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	12-Sep-12	Oil & Grease, Hydrocarbons TRC Non-Compliance. Daily Limit was exceeded. The Concentration Result was 176 mg/L.The Concentration Daily Limit is 50 mg/L.	21-Sep-12				
				W	16-Oct-12	Written Notice of Violation (NOV)	\$0.00

**Permit: IND-00064                      Wild Flavors, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	24-Jan-13	pH exceeded allowable limits. pH was recorded by industry from 9:00 am-11:00am, approximate readings were read at <2.2 and >13.	23-Jan-13				
				V	24-Jan-13	Verbal Notice of Violation (NOV)	\$0.00
NC-P	01-Apr-13	The pH fell outside the Sanitation District No. 1's (SD1) limits of 6.0 to 10.0. The pH of your wastewater discharge on 4/1/2013 around 9:00 am was found to be below 5 for periods of time. This is a federal limit violation. (Refer to SD1's Rules and Regulations on pH for the Dry Creek Wastewater Treatment Plant).	24-Apr-13				
				W	11-Apr-13	Written Notice of Violation (NOV)	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00069 Skilcraft, LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	03-Apr-13	Zinc, total TRC Daily Limit was exceeded. The Result was 3.56 mg/L while the Daily Limit was 2.61 mg/L. The Violation occurred for Sample 'Self Monitoring' on the Sample Date of '4/3/2013' and for Monitoring Point 'Stage 2 & 4'.	14-May-13				
				W	03-May-13	Written Notice of Violation - Zn in stages 2&4	\$0.00
NC-P	04-Apr-13	Zinc, total TRC Daily Limit was exceeded. The Result was 3.26 mg/L while the Daily Limit was 2.61 mg/L. The Violation occurred for Sample 'Self Monitoring' on the Sample Date of '4/4/2013' and for Monitoring Point 'Stage 2 & 4'.	14-May-13				
				W	03-May-13	Written Notice of Violation for Zn Stages 2 & 4	\$0.00

**Permit: IND-00073 Lyons Magnus**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	13-Aug-12	pH exceeded allowable limits numerous times throughout the resampling period of 8/13 to 8/15/12. pH was recorded below 5.0 several times and below 60 for an hour twice.	22-Nov-13				
				WF	28-Aug-12	Written Notice of Violation (NOV) and fine.	\$750.00
NC-P	10-Oct-12	pH exceeded allowable limits. pH was greater than or equal to 11.1 for 24 minutes.	22-Nov-13				

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00073 Lyons Magnus**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				WF	18-Oct-12	Written Notice of Violation (NOV) and fine.	\$500.00
NC-R	13-Oct-12	Failure to submit response to NOV(8/28/12) and fine payment.	20-Nov-12				
				WF	18-Oct-12	Written Notice of Violation (NOV) and fine.	\$500.00
NC-P	20-Nov-12	pH exceeded discharge limits twice during the sampling period 11-12 to 11-16-12. One excursion was <5 for three minutes. One excursion was >10 for 72 minutes and >11 for 62 minutes.	22-Nov-13				
				WF	20-Nov-12	Written Notice of Violation (NOV) and fine.	\$1,000.00
NC-P	02-Jan-13	pH exceeded allowable limits numerous times during the sampling period 12-17-12 to 12-21-12.	22-Nov-13				
				WF	02-Jan-13	Written Notice of Violation (NOV) and fine.	\$1,000.00
NC-P	07-Jun-13	pH exceeded permit limits. pH was recorded <5 for two minutes.	22-Nov-13				
				WF	13-Jun-13	Written Notice of Violation (NOV) and fine.	\$1,000.00

**Permit: IND-00076 Hillshire Brands**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	27-Sep-12	Oil & Grease, Total Non-Compliance.	21-Nov-12				
				W	17-Oct-12	Written Notice of Violation (NOV)	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00076**                      **Hillshire Brands**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	26-Oct-12	Oil & Grease, Total TRC Daily Limit was exceeded. The Result was 191 mg/L while the Daily Limit was 100 mg/L. The Violation occurred for Sample 'Self Monitoring' on the Sample Date of '10/26/2012' and for Monitoring Point '2430206'.	08-Jan-13				
				WF	29-Nov-12	Written Notice of Violation (NOV) and fine. \$500 fine, for violation of G&O limit while resampling for a prior G&O violation	\$500.00

Permit: **IND-00077**                      **Iofina Chemical, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	10-Sep-12	During the sampling of 9-10-2012 to 9-14-2012 there were multiple violations of the SD1 pH limits, see attached graph. 9-10-12 the effluent pH was below the 6.0 pH limit for 1 hour and 2 minutes. On 9-12-12 there were several quick pH spikes below the Federal EPA limit of 5.0. On 9-14-12 there was 1 quick pH spike below the 5.0 limit.					

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00077**                      **Iofina Chemical, Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				W	21-Sep-12	Written Notice of Violation (NOV). During the sampling of 9-10-2012 to 9-14-2012 there were multiple violations of the SD1 pH limits, see attached graph. 9-10-12 the effluent pH was below the 6.0 pH limit for 1 hour and 2 minutes. On 9-12-12 there were several quick pH spikes below the Federal EPA limit of 5.0. On 9-14-12 there was 1 quick pH spike below the 5.0 limit.	\$0.00
NC-P	21-Mar-13	During the sampling of 3-18-2013 to 3-22-2013 there were multiple violations of the SD1 pH limits, see attached graph. On 3-21-2013 there were 2 quick spikes below 5.0 and on 3-22-13 there were several quick pH spikes below 5.0. These are in violation of the Federal EPA limit of 5.0.	24-Jun-13				
				W	24-Apr-13	Written Notice of Violation (NOV) for pH quick spikes below 5.0.	\$0.00

Permit: **IND-00083**                      **Club Chef LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-S	26-Nov-12	Phase 2 Compliance Schedule for chronic pH violations from 2011.					
				CS	27-Nov-12	Phase 2 Compliance Schedule for chronic pH violations in 2011	\$0.00
NC-O	30-Mar-13	Did not submit a progress report within 14 days stating that the pH compliance schedule is completed.					

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

**Permit: IND-00083 Club Chef LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				W	02-Apr-13	Written Notice of Violation (NOV) for Not submitting the final progress report within 14 days of completing the pH compliance schedule.	\$0.00

**Permit: IND-00085 Mubea Inc. (8224 Dixie HWY)**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-R	01-Nov-12	Late self monitoring report due to a new contact not being told that he has to send a quarterly report to SD1. The outside lab did the required sampling on time per their contract. Gave verbal NOV for late reporting.	22-Oct-12				
				V	01-Nov-12	Verbal Notice of Violation (NOV) -Late self monitoring report due to a new contact not being told that he has to send a quarterly report to SD1. The outside lab did the required sampling on time per their contract. Gave verbal NOV for late reporting.	\$0.00

**Permit: IND-00272 Kiswel Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00272**                      **Kiswel Inc.**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	11-Jun-13	Non-compliance parameter violation - pH violation The pH fell outside the Districts limits of 6.0 to 10.0. The pH was recorded at levels below 5.0 for a short period of time on 6/11/2013 and 6/12/2013, see attached graph and also refer to the Sanitation District No. 1 Rules and Regulations on pH for the Dry Creek/Western Wastewater Treatment.					
				W	15-Aug-13	Written Notice of Violation (NOV)	\$0.00

Permit: **IND-00429**                      **C&B Marine LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	19-Sep-12	Oil & Grease, Hydrocarbons TRC Daily Limit was exceeded. The Result was 79.9 mg/L while the Daily Limit was 50 mg/L. The Violation occurred for Sample 'Self Monitoring' on the Sample Date of '9/7/2012' and for Monitoring Point 'End of Pretreatment'.	07-Sep-12				
				V	19-Sep-12	Verbal Notice of Violation (NOV)	
SNC-P	31-Dec-12	Not enough additional sampling was performed to keep your facility from becoming in SNC for the sampling period of 6/1/12 to 12/31/12. You are in SNC - TRC for Oil & Grease - Hydrocarbon (50%).	07-Feb-13				

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00429**                      **C&B Marine LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
				P	29-May-13	SNC for G&O hydrocarbon -TRC Violation - Publish in local newspaper for SNC for the period of 6/1/12 to 12/31/12.	\$0.00
				W	07-Feb-13	Written Notice of Violation Declaration that they are in SNC for the period of 6/1/12 to 12/31/12 for O&G Hydrocarbon.	\$0.00
NC-O	31-Dec-12	Quarterly Sampling and Quarterly Reporting were not performed for the last quarter of 2012, (10-1-2012 to 12-31-2012)	26-Mar-13				
				W	07-Feb-13	Written Notice of Violation (NOV) Quarterly Sampling and Quarterly Reporting were not performed for the last quarter of 2012, (10-1-2012 to 12-31-2012)	\$0.00
NC-P	24-Apr-13	SD1 and C&B took samples on the same day. The average of SD1 sample and C&B sample result for 4/24/13 barely showed compliance for Grease & Oil-Hydrocarbon. The zinc average concentration was 3.84 mg/L which is a violation ( C&B=4.41, SD=3.27), the zinc limit is 3.5 mg/L.					
				W	07-Jun-13	Written Notice of Violation: SD1 and C&B took samples on the same day (4/24/13). The average of SD1 sample and C&B sample result for 4/24/13 barely showed compliance for Grease & Oil- Hydrocarbon. The zinc average concentration was 3.84 mg/L which is a violation ( C&B=4.41, SD=3.27), the zinc limit is 3.5 mg/L.	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Event Category that Contain Violation  
 NC Date: Jul 1 2012 - Jun 30 2013

Permit: **IND-00429**                      **C&B Marine LLC**

Violation Type	Date of NC	Violation Description	Date In Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
NC-P	14-Jun-13	The average of the 2 G&O samples taken on 6-14-13 for hydrocarbon (one taken by SD1 and 1 taken by Test America) came out to 99.7 mg/L. The limit is 50 mg/L.	02-Aug-13				
				W	26-Jul-13	Written Notice of Violation (NOV), the average of the 2 G&O samples taken on 6-14-13 for hydrocarbon (one taken by SD1 and 1 taken by Test America) came out to 99.7 mg/L. The limit is 50 mg/L.	\$0.00

## **APPENDIX E:**

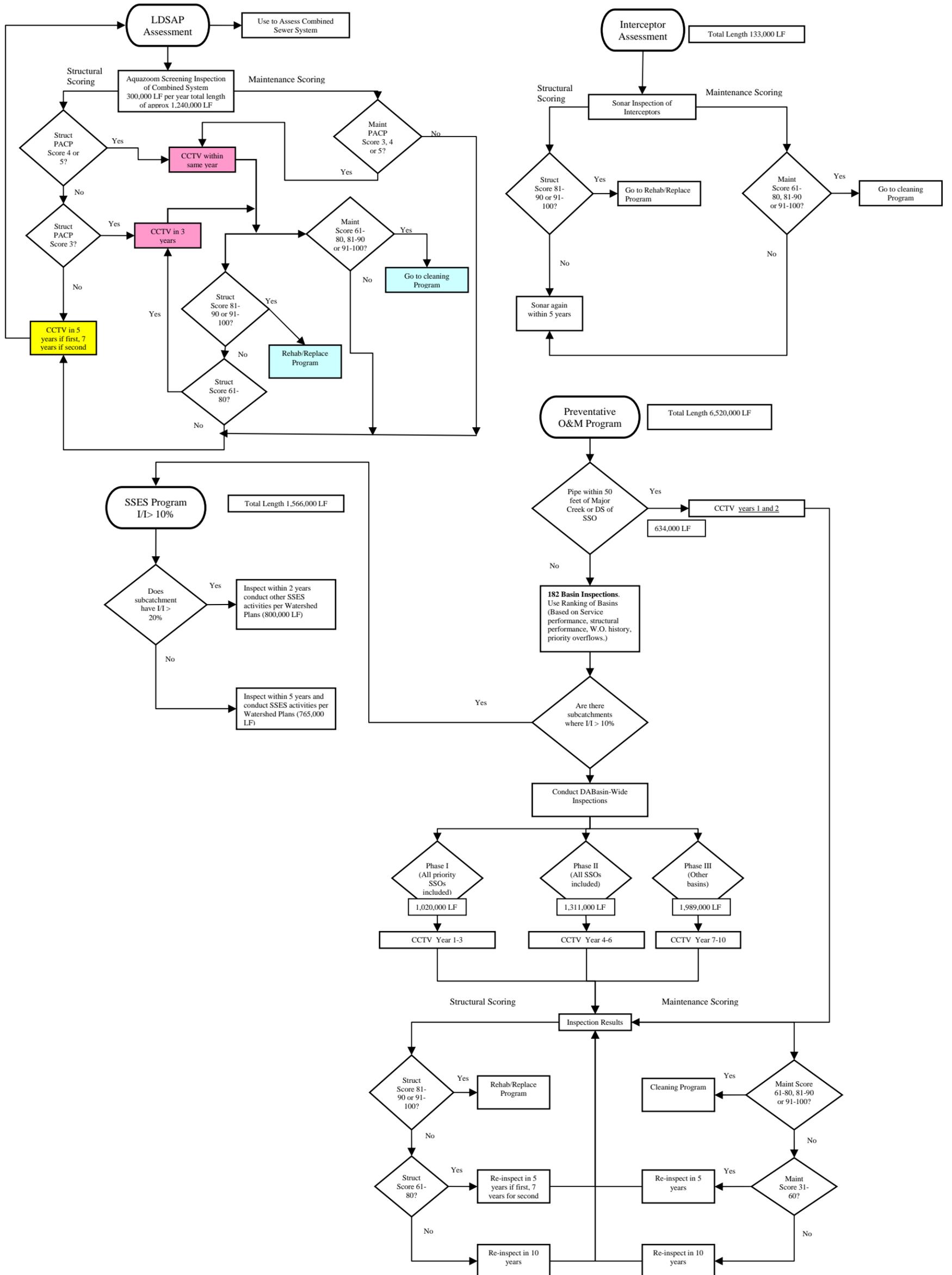
### ***Continuous Sewer Assessment Program Process Diagram***

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# Sanitation District No. 1 Continuous Sewer Assessment Program

## Process Diagram 10/05/09

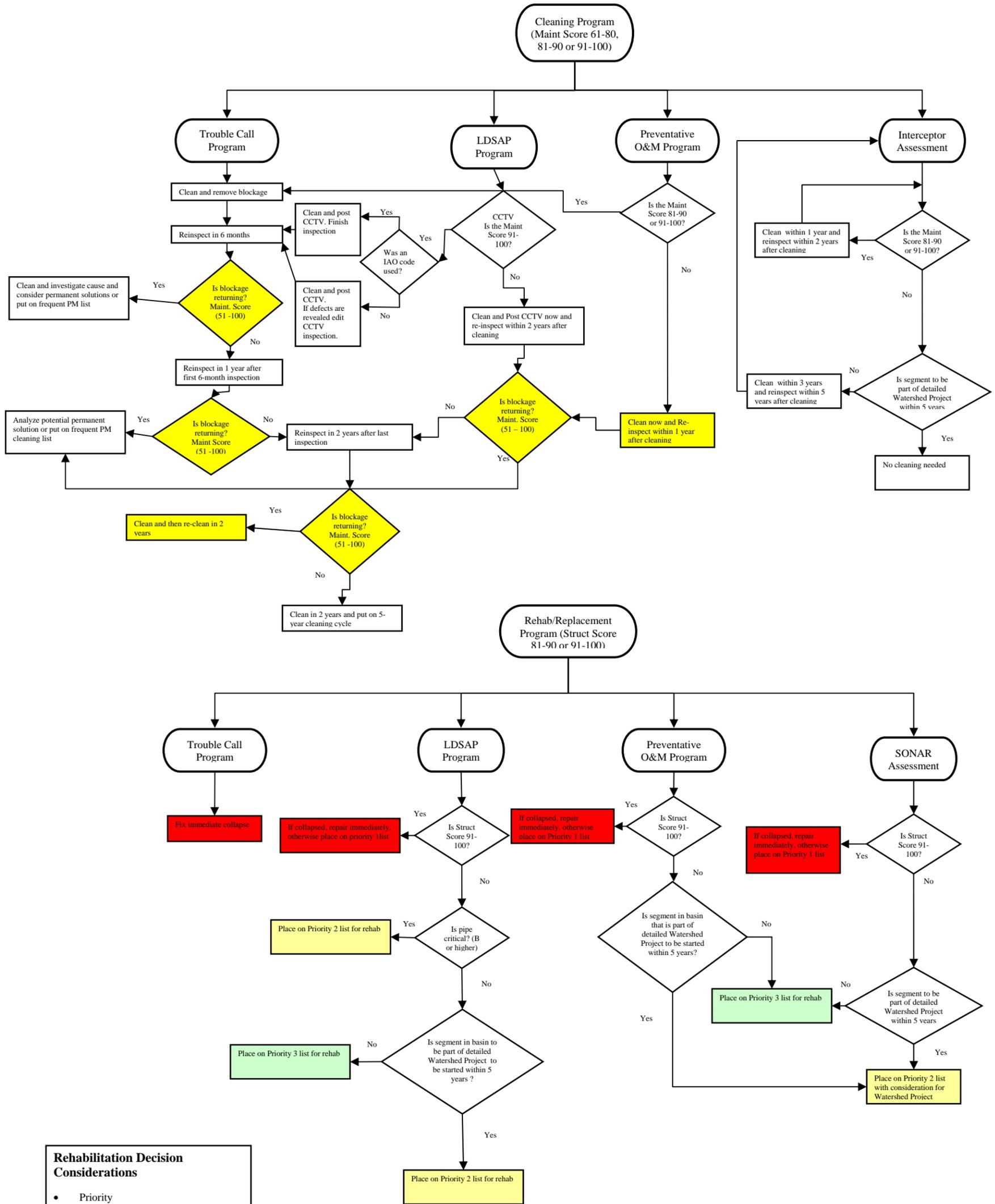
CONFIDENTIAL PRELIMINARY WORKING DRAFT WATERSHED CONSENT DECREE



# Sanitation District No. 1 Continuous Sewer Assessment Program

## Process Diagram 11/17/08

CONFIDENTIAL PRELIMINARY WORKING DRAFT WATERSHED CONSENT DECREE



**APPENDIX F:**  
***SORP Updates***

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# Wet-Weather Inspection Routes for SSOs

## Introduction

SD1's wet-weather investigation program has been in place since 2005 and will continue to be expanded, as warranted, for ongoing field verification and response cleanup of recurring and potential sewer overflows. SD1's SORP team, within the Collection Systems - Asset Maintenance Department, continues to perform routine inspections after rain events at recurring SSO locations and prioritized, potential SSO locations to verify overflow activity and the need for sewer overflow response cleanup. SD1 may also investigate new SSO locations during a rain event, in response to a trouble call. This is part of SD1's ongoing effort to characterize the collection system and verify overflows to ensure that they are categorized accurately and cleaned up after rain events, as needed. Furthermore, proper system characterization and overflow verification ensure that the hydraulic models that SD1 utilizes for overflow activation and volume estimation continue to provide the most accurate information available.

The route sheets provided herein are based upon field observations and hydraulic model data, which indicate the event size that triggers the need for inspections and a SORP clean-up response at confirmed recurring wet-weather and potential SSO locations.

## Recurring SSOs

Currently, SD1 has confirmed 179 locations throughout the collection system that have recurring wet-weather overflows. Through field observations and model data, SD1 has identified the size of the rain event that triggers overflows at these locations. Crews are deployed to 93% (166) of these locations immediately following the threshold rain event to implement inspection and clean-up procedures. Historical field data and observations confirmed that the remaining 7% (13) do not require a regular cleanup due to either low frequency/low volume of activations or the location of the outfall. These recurring locations are inspected periodically throughout the year to continue to confirm that a SORP cleanup is not required. All of the recurring SSO locations are characterized and reported on a quarterly basis. The list of recurring SSOs is updated annually and submitted in SD1's April Consent Decree Quarterly Report. Table 1.1 presents these locations, as of 2013, and how they are inspected, cleaned-up, and reported.

### *Pump Stations with Constructed Bypasses*

Currently, SD1 has 11 pump stations throughout the collection system that have the potential to overflow during rain events. These pump stations are monitored



by supervisory control and data acquisition (SCADA) systems, and pump station operation personnel are deployed to these locations to implement response procedures if an alarm is activated. The following pump stations have constructed bypasses in the wet wells:

- Cedar Point
- Crestview (bypass to be eliminated)
- Eagle’s Landing
- Keavy
- Kentucky Aire (pump station to be eliminated)
- Highland Heights
- Mafred
- Meadow Lane
- Richwood
- Ridgeway
- Winter’s Lane #2

**Table 1.1 Overview of Recurring SSO Response**

Count	11	166	13
Monitoring	SCADA (continuous)	Inspected by SORP team after wet-weather	NR <sup>(1)</sup>
SORP Cleanup	YES – Using SORP SOP		
Event Documentation	YES – entered in Lucity		
Event Reporting	YES – when observed overflowing		
Quarterly Reporting	YES – using modeled activations and volumes		

(1) Past inspections to characterize these overflows revealed no need for regular SORP cleanup, due to location or low frequency

**Potential SSOs**

SD1 field-investigates potential overflows that are predicted by model data or have historical evidence, based on past inspections that may indicate overflow activity. This information is summarized and grouped in excel spreadsheets and the Lucity asset inventory, which the Collection Systems – Asset Maintenance Department uses, along with route sheets, to inspect each location. The current



program prioritizes locations for inspection and characterization by watershed. Currently, SD1 has identified approximately 21 potential SSOs across the collection system, in addition to the confirmed recurring SSO locations. The 21 potential SSOs will continue to be monitored and characterized through field inspections and hydraulic modeling to determine their status.

As SD1’s systematic and prioritized inspection program continues, this list of potential SSOs will be revised on an annual basis. Table 1.2 presents a summary of the potential overflows and how they are inspected, cleaned-up, and reported.

**Table 1.2 Overview of Potential SSO Response**

Count	21 potential SSOs
Monitoring	Potential SSOs inspected by Collection Systems - Asset Maintenance and SORP teams, after wet-weather events. Program prioritizes locations for inspection and characterization by watershed. All 21 potential locations receive SORP inspections throughout the year.
SORP cleanup	<b>YES</b> – using SORP SOP
Event documentation	<b>YES</b> – entered in Lucity
Event reporting	<b>YES</b> - when observed overflowing
Quarterly reporting	Only after being added to Recurring SSO List



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**Wet Weather Investigation Routes**

Recurring SSOs					
Manhole	Status	County	Field Monitoring Performed By	Rain	Watershed
0020006	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Fourmile Creek
0360074	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Fourmile Creek
0860003	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Licking River
0060001	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Ohio River east
0060002	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Ohio River east
0150009	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0150063	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0150064	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0150065	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0150085	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0150086	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0150399	Recurring SSO	Campbell	Collection Systems - SORP Team	1"	Threemile Creek
0860016	Recurring SSO	Campbell	Collection Systems - SORP Team	2"	Threemile Creek
1850140	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
1850141	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
1950232	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
1990032	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2100002	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2100128	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2100129	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2110002	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2120001	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2120041	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2280011	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2280016	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2300016	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2300121	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2300123	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2301219	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2301274	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Banklick Creek
2130026	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Dry Creek
2130028	Recurring SSO	Kenton	Collection Systems - SORP Team	1"	Dry Creek
1110161	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Banklick Creek
1760047	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Banklick Creek
1760048	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Banklick Creek
2040040	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Banklick Creek
2070019	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Banklick Creek
2130027	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Dry Creek
2130286	Recurring SSO	Kenton	Collection Systems - SORP Team	2"	Dry Creek
2280010	Recurring SSO	Kenton	Collection Systems - SORP Team	3"	Banklick Creek
2410387	Recurring SSO	Boone	Collection Systems - Asset Maintenance	1"	Gunpowder Creek
2390002	Recurring SSO	Boone	Collection Systems - Asset Maintenance	2"	Woolper Creek
2360024	Recurring SSO	Boone	Collection Systems - Asset Maintenance	3"	Elijahs Creek
2400001	Recurring SSO	Boone	Collection Systems - Asset Maintenance	3"	Sand Run
2370003	Recurring SSO	Boone	Collection Systems - Asset Maintenance	3"	Woolper Creek
0020007	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Fourmile Creek
0020008	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Fourmile Creek
0200003	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Fourmile Creek
1920086	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Fourmile Creek

**Wet Weather Investigation Routes**

Recurring SSOs					
Manhole	Status	County	Field Monitoring Performed By	Rain	Watershed
1920097	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Fourmile Creek
2150090	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Fourmile Creek
0040003	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Ohio River east
0120019	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Ohio River east
0370001	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0380005	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0400002	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0410010	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0410019	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0430006	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0500047	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0530083	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
1010002	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
1010025	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0100002	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Threemile Creek
0110010	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Threemile Creek
0220058	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Threemile Creek
0270020	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Threemile Creek
0270103	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	1"	Threemile Creek
0020031	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Fourmile Creek
0280073	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Fourmile Creek
0060004	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Ohio River east
0070044	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Ohio River east
0300035	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Ohio River east
0330005	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Ohio River east
0360004	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Ohio River east
0390007	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Taylor Creek
0400034	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Taylor Creek
0410036	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Taylor Creek
0440074	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Taylor Creek
0490039	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Taylor Creek
0100003	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0150024	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0150087	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0150356	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0220035	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0220056	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0220086	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0230011	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0230016	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0250002	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
1930007	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	2"	Threemile Creek
0020032	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Fourmile Creek
2450001	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Licking River
0280001	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Ohio River east
0370009	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Taylor Creek
0400017	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Taylor Creek
1010027	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Taylor Creek

**Wet Weather Investigation Routes**

Recurring SSOs					
Manhole	Status	County	Field Monitoring Performed By	Rain	Watershed
0110002	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Threemile Creek
0260001	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Threemile Creek
0270062	Recurring SSO	Campbell	Collection Systems - Asset Maintenance	3"	Threemile Creek
1110025	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1110226	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1110294	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1940006	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1950014	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1960002	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1990018	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
2090008	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
2100057	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
2110001	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
2170006	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
2170097	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
2300019	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Banklick Creek
1190012	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Dry Creek
1230019	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Dry Creek
1240008	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Dry Creek
1610053	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Dry Creek
1610054	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Dry Creek
1550053	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	1"	Pleasant Run Creek
1040060	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1110051	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1110164	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1110174	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1110275	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1120029	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1570025	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1860108	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1870013	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1870014	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1990028	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2020035	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2020203	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2090063	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2100007	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2100036	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2100037	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2100106	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2100126	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2110006	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2160004	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2170008	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
2170013	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1600050	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Dry Creek
1790003	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Dry Creek
0870037	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Licking River
2350173	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Licking River
1560102	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Pleasant Run Creek

**Wet Weather Investigation Routes**

Recurring SSOs					
Manhole	Status	County	Field Monitoring	Rain	Watershed
1700008	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Pleasant Run Creek
1730100	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	2"	Pleasant Run Creek
1750076	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Banklick Creek
2160005	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Banklick Creek
2160006	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Banklick Creek
1230036	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1190001	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1210018	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1220016	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1220054	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1240012	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1600029	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1610102	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1770062	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1560092	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
1690043	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
1700006	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
1730103	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
2290001	Recurring SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
1830020	Recurring SSO	Boone	No Clean Up Needed		Dry Creek
1830067	Recurring SSO	Boone	No Clean Up Needed		Dry Creek
0050022	Recurring SSO	Campbell	No Clean Up Needed		Ohio River east
0270026	Recurring SSO	Campbell	No Clean Up Needed		Threemile Creek
0860001	Recurring SSO	Campbell	No Clean Up Needed		Licking River
2150050	Recurring SSO	Campbell	No Clean Up Needed		Fourmile Creek
1090069	Recurring SSO	Kenton	No Clean Up Needed		Banklick Creek
1110067	Recurring SSO	Kenton	No Clean Up Needed		Banklick Creek
1560016	Recurring SSO	Kenton	No Clean Up Needed		Pleasant Run Creek
1560019	Recurring SSO	Kenton	No Clean Up Needed		Pleasant Run Creek
1560074	Recurring SSO	Kenton	No Clean Up Needed		Pleasant Run Creek
1690072	Recurring SSO	Kenton	No Clean Up Needed		Pleasant Run Creek
1700025	Recurring SSO	Kenton	No Clean Up Needed		Pleasant Run Creek

**Wet Weather Investigation Routes**

Potential SSOs					
Manhole	Status	County	Field Monitoring Performed By	Rain	Watershed
2280023	Potential SSO	Boone	Collection Systems - Asset Maintenance	2"	Gunpowder Creek
2280405	Potential SSO	Boone	Collection Systems - Asset Maintenance	3"	Gunpowder Creek
2420346	Potential SSO	Boone	Collection Systems - Asset Maintenance	3"	Gunpowder Creek
0430007	Potential SSO	Campbell	Collection Systems - Asset Maintenance	1"	Taylor Creek
0660004	Potential SSO	Campbell	Collection Systems - Asset Maintenance	1"	Ohio River East
0120018	Potential SSO	Campbell	Collection Systems - Asset Maintenance	2"	Ohio River
1220028	Potential SSO	Campbell	Collection Systems - Asset Maintenance	2"	Taylor Creek
0150346	Potential SSO	Campbell	Collection Systems - Asset Maintenance	3"	Threemile Creek
0490035	Potential SSO	Campbell	Collection Systems - Asset Maintenance	3"	Taylor Creek
0490073	Potential SSO	Campbell	Collection Systems - Asset Maintenance	3"	Taylor Creek
1010026	Potential SSO	Campbell	Collection Systems - Asset Maintenance	3"	Taylor Creek
2280073	Potential SSO	Kenton	Collection Systems - Asset Maintenance	2"	Banklick Creek
1300007	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Licking River
1730068	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
1730086	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Pleasant Run Creek
1790027	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Dry Creek
1880009	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Licking River
1880022	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Licking River
1880048	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Licking River
1880087	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Licking River
2100110	Potential SSO	Kenton	Collection Systems - Asset Maintenance	3"	Banklick Creek

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# Inspection Routes for CSOs

## Introduction

Historically, SD1's CSO investigation crews have inspected every CSO diversion once per week and after every rainfall event greater than half an inch. The information gathered from these diversion inspections have been used to characterize the activity of CSOs during wet weather, and to identify the location of dry-weather overflows, as well as the measures needed to eliminate them from reoccurring.

The route sheets included herein outline the current inspection frequencies of the 171 diversions associated with SD1's 96 CSO outfalls.

## Dry Weather CSOs

During the dry-weather inspection routines, the CSO investigation crews visually look for debris and blockages that may trigger a dry-weather overflow, or would affect the ability of the diversion to maximize the flow entering the interceptor during rainfall. Diversions are equipped with string lines or blocks to better detect if a dry-weather overflow has occurred.

The CSO investigation crews implement response procedures as described in the SORP for any diversion found to have a dry-weather overflow. In addition, assessment procedures are implemented as described in the NMC report to identify the cause of the dry weather overflow and implement solutions to ensure that the dry weather overflow does not reoccur.

During 2013, a minor modification was made to the dry-weather inspection frequencies of some diversions. Based on historical inspections, modeled data, targeted CCTV inspections of upstream pipe, and EPA's 1995 Guidance for Nine Minimum Controls, SD1 determined that 37 diversions no longer needed weekly dry-weather inspections. These 37 locations have shown no evidence of structural or maintenance issues, or lack of capacity, which would lead to a dry-weather overflow. EPA's guidance suggests that monthly inspections of such locations may be warranted, however SD1 will inspect these 37 locations on a bi-weekly basis. The bi-weekly inspection frequency of the 37 diversions may be adjusted to monthly, once the bi-weekly schedule has been demonstrated to lead to no additional dry-weather CSOs. The new list of 37 bi-weekly dry-weather inspections is referred to as the Consolidated Route in the following pages.



The Table 1.1 summarizes how the CSOs are inspected, cleaned-up, and reported.

**Table 1.1 Overview of CSO Response**

Combined Sewer Overflows	
Count	96
Monitoring	134 inspected on a weekly basis in dry weather by a dedicated CSO crew within SD1's Collection Systems – Asset Maintenance Department; 37 inspected on a bi-weekly basis in dry weather by the same crew; re-inspected by the same crew after wet-weather events producing more than ½ inch of rain.
SORP cleanup	<b>YES</b> – for Dry Weather Overflows - using SORP SOP
Event documentation	<b>YES</b> – for Dry Weather overflows – entered in Lucity
Event reporting	<b>YES</b> – for Dry Weather overflows – using SORP SOP
Quarterly reporting	<b>YES</b> – using modeled activations and volumes



Diversion Inspections - Western Route	Dry Weather Inspection Frequency	Wet Weather Inspection Frequency
STEVE TANNER -1730053	Weekly	After 1/2" of Rain
ROHMAN ST - 1730008	Weekly	After 1/2" of Rain
PLEASANT ST - 1730029	Weekly	After 1/2" of Rain
LAGOON ST - 1720005	Weekly	After 1/2" of Rain
ADELA ST - 1710003	Weekly	After 1/2" of Rain
KENNER ST - 1710054	Weekly	After 1/2" of Rain
BUTLER ST - 1710068	Weekly	After 1/2" of Rain
CARNEAL ST - 1710084	Weekly	After 1/2" of Rain
ASH ST - 1710098	Weekly	After 1/2" of Rain
ALTAMONT ST - 1500010	Weekly	After 1/2" of Rain
SWAIN CT - 1490015	Weekly	After 1/2" of Rain
PARKWAY and HIGHWAY - 1490027	Weekly	After 1/2" of Rain
WRIGHT ST - 1480017	Weekly	After 1/2" of Rain
320 CRESENT AVE - 1480103	Weekly	After 1/2" of Rain
3RD ST - 1480012	Weekly	After 1/2" of Rain
3RD ST and I-75 - 1480097	Weekly	After 1/2" of Rain
4TH ST and I-75 - 1480108	Weekly	After 1/2" of Rain
DALTON ST - 1480123	Weekly	After 1/2" of Rain
8TH and PHILADEPHIA - 1480129	Weekly	After 1/2" of Rain
WILLOW RUN - 1480116	Weekly	After 1/2" of Rain
AMSTERDAM and PARKVALE - 1380054	Weekly	After 1/2" of Rain
AMSTERDAM and ARLINGTON - 1380083	Weekly	After 1/2" of Rain
DIXIE HWY and ARLINGTON - 1320093	Weekly	After 1/2" of Rain
PARK HILLS and DIXIE HWY - 1350104	Weekly	After 1/2" of Rain
MARCELLA DR - 1510133	Weekly	After 1/2" of Rain
PHILADEPHIA ST - 1470003	Weekly	After 1/2" of Rain
BAKEWELL ST - 1470032	Weekly	After 1/2" of Rain
MAIN ST - 1470052	Weekly	After 1/2" of Rain
JOHNSON ST - 1470072	Weekly	After 1/2" of Rain
2ND and RUSSELL - 1440002	Weekly	After 1/2" of Rain
2ND and WASHINGTON - 1440053	Weekly	After 1/2" of Rain
MADISON AVE - 1440072	Weekly	After 1/2" of Rain
SCOTT ST - 1440100	Weekly	After 1/2" of Rain
GREENUP ST - 1440121	Weekly	After 1/2" of Rain
GARRARD ST - 1440156	Weekly	After 1/2" of Rain
KENNEDY ST#1 - 1440145	Weekly	After 1/2" of Rain
KENNEDY ST#2 - 1440146	Weekly	After 1/2" of Rain
6TH and GARRARD 1420004	Weekly	After 1/2" of Rain
8TH and GARRARD - 1420022	Weekly	After 1/2" of Rain
8TH ST - 1420025	Weekly	After 1/2" of Rain
8TH and SANFORD - 1420028	Weekly	After 1/2" of Rain
9TH ST - 1420032	Weekly	After 1/2" of Rain
10TH ST - 1420043	Weekly	After 1/2" of Rain
ROBBINS ST - 1420076	Weekly	After 1/2" of Rain
11TH ST - 1420079	Weekly	After 1/2" of Rain
12TH ST - 0980002	Weekly	After 1/2" of Rain
13TH ST - 0980016	Weekly	After 1/2" of Rain
MARYLAND AVE - 0980036	Weekly	After 1/2" of Rain
15TH ST - 0960003	Weekly	After 1/2" of Rain
OLIVER ST - 0960027	Weekly	After 1/2" of Rain
PATTON ST - 0960032	Weekly	After 1/2" of Rain
16TH and WATER ST - 0930014	Weekly	After 1/2" of Rain
16TH ST - 0930002	Weekly	After 1/2" of Rain
17TH ST - 0930026	Weekly	After 1/2" of Rain
GLENWAY and PARK - 0930050	Weekly	After 1/2" of Rain
19TH ST and OAKLAND - 0930041	Weekly	After 1/2" of Rain
S.E SIDE BALLPARK#2 - 0930066	Weekly	After 1/2" of Rain
S.E SIDE BALLPARK#1 - 0930056	Weekly	After 1/2" of Rain
20TH ST - 0930075	Weekly	After 1/2" of Rain
DURETTE AVE - 0930083	Weekly	After 1/2" of Rain
OAKLAND and FLORIST - 0910005	Weekly	After 1/2" of Rain
OAKLAND ST - 0910007	Weekly	After 1/2" of Rain
EASTERN AVE NORTH - 0910027	Weekly	After 1/2" of Rain
EASTERN AVE SOUTH - 0910031	Weekly	After 1/2" of Rain
EASTERN AVE and HOLMES - 0910025	Weekly	After 1/2" of Rain
HERMAN ST - 1310052	Weekly	After 1/2" of Rain
WARREN ST #1 - 1310062	Weekly	After 1/2" of Rain
WARREN ST #2 - 1310065	Weekly	After 1/2" of Rain

Highlighted structures indicate Secondary Diversions, which divert to other parts of the CSS and do not directly outfall into a body of water. Diversions from these structures are never reported as a release, even during dry weather.

Diversion Inspections - Eastern Route	Dry Weather Inspection Frequency	Wet Weather Inspection Frequency
33RD and LATONIA - 1840055	Weekly	After 1/2" of Rain
33RD and EMERSON - 1840072	Weekly	After 1/2" of Rain
33RD and CARLISLE - 1840069	Weekly	After 1/2" of Rain
CHURCH NORTH - 1850150	Weekly	After 1/2" of Rain
CHURCH WEST - 1850024	Weekly	After 1/2" of Rain
CHURCH EAST - 1850032	Weekly	After 1/2" of Rain
DECOURSEY - 1870025	Weekly	After 1/2" of Rain
47TH ST - 1870031	Weekly	After 1/2" of Rain
VIRGINIA - 1880021	Weekly	After 1/2" of Rain
BALTIMORE - 1880028	Weekly	After 1/2" of Rain
44TH ST - 1880010	Weekly	After 1/2" of Rain
E38TH ST #1- 0870021	Weekly	After 1/2" of Rain
E38TH ST #2 - 0870019	Weekly	After 1/2" of Rain
EARL and GILBERT - 0870052	Weekly	After 1/2" of Rain
SOUTHERN and MYRTLE - 0870039	Weekly	After 1/2" of Rain
SOUTHERN - 0870071	Weekly	After 1/2" of Rain
PARK DR - 0870007	Weekly	After 1/2" of Rain
34TH ST at L&N BRIDGE - 0880017	Weekly	After 1/2" of Rain
E33RD ST - 0880004	Weekly	After 1/2" of Rain
25 28TH ST - 0890063	Weekly	After 1/2" of Rain
ASHLAND OIL - 0910064	Weekly	After 1/2" of Rain
EASTERN and MEINKEN - 0910055	Weekly	After 1/2" of Rain
EASTERN and ADAMS - 0910039	Weekly	After 1/2" of Rain
9TH ST - 0840003	Weekly	After 1/2" of Rain
LOWELL and 9TH ST - 0840005	Weekly	After 1/2" of Rain
BRIETHE and LOWELL - 0840132	Weekly	After 1/2" of Rain
LOWELL and 10TH ST - 0840027	Weekly	After 1/2" of Rain
FITZSIMMONS - 0730005	Weekly	After 1/2" of Rain
12TH ST #1 - 0730009	Weekly	After 1/2" of Rain
12TH ST #2 - 0730028	Weekly	After 1/2" of Rain
4TH CHAMBER - 0820001	Weekly	After 1/2" of Rain
16TH and MONMOUTH - 0690034	Weekly	After 1/2" of Rain
ENTERPRISE RENTAL - 0690008	Weekly	After 1/2" of Rain
LESTER - 0340034	Weekly	After 1/2" of Rain
GLAZIER - 0650053	Weekly	After 1/2" of Rain
GEIGER - 0650041	Weekly	After 1/2" of Rain
SOUTH WARD and COVERT RUN - 0550024	Weekly	After 1/2" of Rain
TAYLOR&RETREAT - 0540055	Weekly	After 1/2" of Rain
DONNERMEYER and LAFAYETTE - 0540044	Weekly	After 1/2" of Rain
DONNERMEYER and BERRY - 0540009	Weekly	After 1/2" of Rain
NELSON and LINDEN - 0630039	Weekly	After 1/2" of Rain
9TH and LINDEN - 0660057 (GATEWELL)	Weekly	After 1/2" of Rain
WILDCAT DR - 0650025	Weekly	After 1/2" of Rain
PARTY SOURCE - 0650084	Weekly	After 1/2" of Rain
COLUMBIA ST CHAMBER - 0790015	Weekly	After 1/2" of Rain
SARATOGA (PURPLE BRIDGE) - 0770006	Weekly	After 1/2" of Rain
WASHINGTON ST CHAMBER - 0640081	Weekly	After 1/2" of Rain
DON PABLO - 0630001	Weekly	After 1/2" of Rain
PATCHEN - 0620031	Weekly	After 1/2" of Rain
LAFAYETTE - 0620015	Weekly	After 1/2" of Rain
TAYLOR - 0610080	Weekly	After 1/2" of Rain
WASHINGTON - 0610006	Weekly	After 1/2" of Rain
FOOTE - 0600002	Weekly	After 1/2" of Rain
WARD - 0600016	Weekly	After 1/2" of Rain
VAN VOAST - 0600037	Weekly	After 1/2" of Rain
O'FALLON - 0600041	Weekly	After 1/2" of Rain
MCKINNEY - 0570115	Weekly	After 1/2" of Rain
MCKINNEY - 0570011	Weekly	After 1/2" of Rain
Main St - 0570123	Weekly	After 1/2" of Rain
MAIN ST - 0570030	Weekly	After 1/2" of Rain
ANCHOR INN - 0360018	Weekly	After 1/2" of Rain
TOWER HILL - 0330099	Weekly	After 1/2" of Rain
625 MARY INGLES - 0340044	Weekly	After 1/2" of Rain
617 MARY INGLES - 0200066	Weekly	After 1/2" of Rain
CARMEL MANOR - 0030017	Weekly	After 1/2" of Rain
ASH ST - 0010001	Weekly	After 1/2" of Rain

Highlighted structures indicate Secondary Diversions, which divert to other parts of the CSS and do not directly outfall into a body of water. Diversions from these structures are never reported as a release, even during dry weather.

<b>Diversions Inspections - Consolidated Route</b>	<b>Dry Weather Inspection Frequency</b>	<b>Wet Weather Inspection Frequency</b>
ROHMAN ST - 1730008	Bi-Weekly	After 1/2" of Rain
PLEASANT ST - 1730029	Bi-Weekly	After 1/2" of Rain
LAGOON ST - 1720005	Bi-Weekly	After 1/2" of Rain
ADELA ST - 1710003	Bi-Weekly	After 1/2" of Rain
CARNEAL ST - 1710084	Bi-Weekly	After 1/2" of Rain
ASH ST - 1710098	Bi-Weekly	After 1/2" of Rain
ALTAMONT ST - 1500010	Bi-Weekly	After 1/2" of Rain
PARKWAY and HIGHWAY - 1490027	Bi-Weekly	After 1/2" of Rain
320 CRESCENT ST - 1480103	Bi-Weekly	After 1/2" of Rain
3RD ST - 1480012	Bi-Weekly	After 1/2" of Rain
3RD ST at I-75 - 1480097	Bi-Weekly	After 1/2" of Rain
DALTON ST - 1480123	Bi-Weekly	After 1/2" of Rain
8TH and PHILADEPHIA - 1480129	Bi-Weekly	After 1/2" of Rain
KENNEDY ST #2 - 1440146	Bi-Weekly	After 1/2" of Rain
8TH ST - 1420025	Bi-Weekly	After 1/2" of Rain
11TH ST - 1420079	Bi-Weekly	After 1/2" of Rain
12TH ST - 0980002	Bi-Weekly	After 1/2" of Rain
OLIVER ST - 0960027	Bi-Weekly	After 1/2" of Rain
GLEWAY and PARK - 0930050	Bi-Weekly	After 1/2" of Rain
19TH ST and OAKLAND - 0930041	Bi-Weekly	After 1/2" of Rain
EASTERN AVE SOUTH - 0910031	Bi-Weekly	After 1/2" of Rain
EASTERN AVE - 0910025	Bi-Weekly	After 1/2" of Rain
OAKLAND and FLORIST - 0910005	Bi-Weekly	After 1/2" of Rain
EASTERN and MEINKEN - 0910055	Bi-Weekly	After 1/2" of Rain
ASHLAND OIL - 0910064	Bi-Weekly	After 1/2" of Rain
34TH ST and L&N BRIDGE - 0880017	Bi-Weekly	After 1/2" of Rain
47TH ST - 1870031	Bi-Weekly	After 1/2" of Rain
CHURCH ST NORTH - 1850150	Bi-Weekly	After 1/2" of Rain
LOWELL and 9TH ST - 0840005	Bi-Weekly	After 1/2" of Rain
9TH ST - 0840003	Bi-Weekly	After 1/2" of Rain
4TH ST CHAMBER - 0820001	Bi-Weekly	After 1/2" of Rain
SARATOGA (PURPLE BRIDGE) - 0770006	Bi-Weekly	After 1/2" of Rain
LAFAYETTE ST - 0620015	Bi-Weekly	After 1/2" of Rain
TAYLOR ST - 0610080	Bi-Weekly	After 1/2" of Rain
O'FALLON ST - 0600041	Bi-Weekly	After 1/2" of Rain
MC KINNEY - 0570115	Bi-Weekly	After 1/2" of Rain
EARL&GILBERT - 0870052	Bi-Weekly	After 1/2" of Rain

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**APPENDIX G:**  
***Information Technology Strategic Plan***

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# Sanitation District No. 1

## Information Technology Framework Document

July 18, 2013



# Sanitation District No. 1 Information Technology Framework

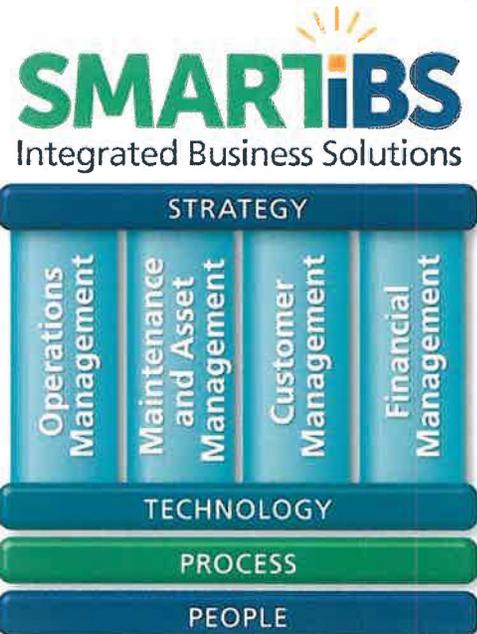
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Approach	4
SWOT Workshop	5
Application Inventory	8
Assessment Findings	10
Implementation Plan	36

## Introduction

This document serves as Westin's Information Technology Strategic Plan (Plan) for Sanitation District No. 1 (SD1). Westin conducted a series of interviews, interactive workshops and associated on-site activities to perform an inventory and a high-level assessment of SD1's use of information technology. This included the development of a vision and framework to guide future technology investments. Westin's assessment services compared SD1's information technology practices against industry leaders.

The chief goal of this Plan is to document the systems and business practices, and apply other proven methods to increase SD1's information technology maturity. The outcomes of Westin's efforts provide a high-level framework for future technology improvements and investments.

Help guide the future information technology investments and associated business process enhancements for the next 3 to 5 years.

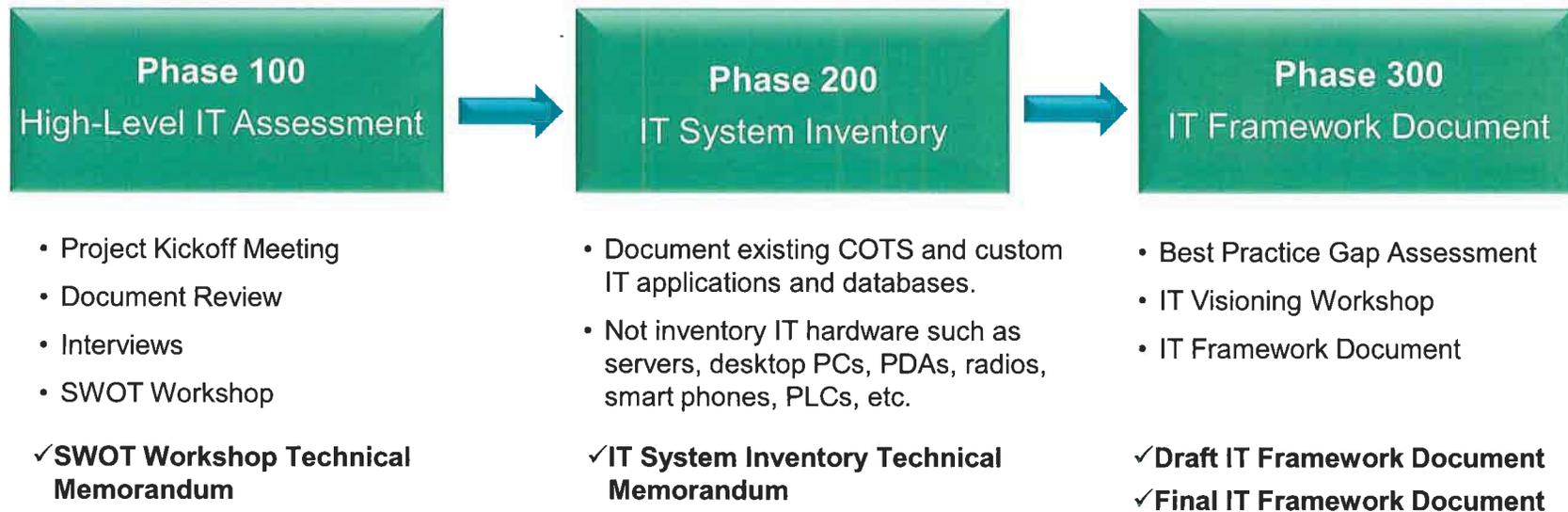


### Tasks:

- ✓ Compare SD1's information technology practices against industry leaders.
- ✓ Inventory of existing IT systems and applications,
- ✓ High-level assessment of existing IT practices,
- ✓ Documented vision and guidelines (framework) for future technology improvements and investments.

## Approach

Westin's approach and project deliverables are constructed specifically to help guide SD1's future information technology investments and associated business process enhancements.



**Phase 100 High-Level IT Assessment:** Evaluates and documents SD1's baseline condition regarding its use of information technology including a facilitated, interactive SWOT Workshop.

**Phase 200 IT System Inventory:** Provides an inventory of the technology applications currently in place at SD1.

**Phase 300 IT Framework Document:** Establishes a vision for future information technology investments and a roadmap for new technology applications for the next 3 to 5 years.

**Phase 100**  
Hi-Level IT Assessment

### Phase 100 – High-Level IT Assessment:

Westin began the project by conducting a high-level assessment of SD1’s business and work practices regarding information technology and information management. During this task, Westin facilitated a Strengths, Weaknesses, Opportunities and Threats (SWOT) Workshop with key employees. This interactive format allowed the employees to openly discuss how they are currently using technology at SD1. The summarized results of the SWOT Workshop are provided below.

### Strengths

- Get the requisite support from executive management to use technology.
- Good infrastructure for IT with good quality equipment (Cisco, servers).
- Adequate training budget.
- Good IT support - 2 FTES dedicated to help desk and end user support.
- End user gets a lot of input for application software.
- Most information is current (assets, maintenance, and condition).
- Purchase requisition software makes it easier to purchase with paperless, electronic approvals.
- Two-way integration of ESRI GIS and Lucity CMMS.
- Effective mobile field use of Lucity.
- Good mapping system.
- Employee performance management system (Halogen) is a significant upgrade.
- Strength in the Dashboard with lots of potential.
- Laserfiche is getting out to the users.
- Good reporting capabilities.





## Sanitation District No. 1 Information Technology Framework

### **Weaknesses:**

- General lack of an IT governance level – silos.
- No formal business cases for IT procurement.
- Lack of effective change management.
- Limited enforcement of training so employees are not utilizing technology consistently.
- Lack of oversight of decision making – no central clearing house for knowledge of how things fit together.
- Limited governance of IT. Need to ensure that users are asked. Requires a more in-depth analysis.
- Unclear ownership of the IT applications. There are conflicts at the plants and limited standardized processes.
- Didn't do the upfront business process design so the end users frequently drove the purchase.
- Trying to adjust business processes to software capabilities, but causing additional spreadsheets.
- Lot of duplication between departments – they need data – no single version of the data, rounded numbers.
- IT originally built to be reactive – not planning and visioning.
- Lack of sufficient IT resources to be proactive.
- Budget process first goes into MS Excel – two budget databases.
- Assessment loans are in Excel.
- Inconsistency of data tracking and data quality checks for asset attributes and costs.
- No overall data map. Shared drives are unstructured for legal hold.
- Lack of employee training for work practice compliance.
- Need a new Customer Information System.
- Lack of integration of CIS to AM to Accounting process.
- Business systems and SCADA systems are merged.
- Records retention compliance – keep documents forever.
- Financial reports are difficult with SQL queries.
- Having to work around Lucity's limitations results in creating outside spreadsheets.
- Lack of reports from Lucity – understand the backend data source – now doing cross training.
- Only a few power users of Lucity – not using its full potential.
- Asset lifecycle cost management requires better communication between Engineering and Operations.
- Capital Project Management – No standardized internal tool. Currently using Excel. Going to use Arcadis.
- GIS – Trying to stick with enterprise database, but many export to shape files.
- GIS is not fully integrated with hydraulic modeling software. Use 3<sup>rd</sup> party for modeling – rely on consultant.
- Dead zones in the field – ArcMap and Arc Reader – both in the field – challenges with connectivity.
- No AVL, so there is no way to see where we are working.
- Paycor is limiting. Have to put into Excel and then to GP for allocation of time to capital projects.
- Still too much paper and no e-signatures.
- LIMS system works with huge amount of potential. Apparent lack of customer support and training. Networking is no longer available.
- Still using paper logbooks in the lab and then exporting to Excel. Integrate key instruments directly into LIMS.
- Customers can't pay their bill after hours.
- Call system – not currently looking at metrics.



## Sanitation District No. 1 Information Technology Framework

### ***Opportunities:***

- Establish IT governance for purchasing new systems and compliance for data collection and agreed-upon business processes.
- Procure and install a new Customer Information / Utility Billing System.
- Provide adequate training on applications.
- Establish and effectively leverage application experts (Power Users).
- Ensure the integration of information between departments using one single source of data.
- Evaluate key workflows and business processes. Identify what processes affect others to minimize problems.
- Maximize the general access to and sharing of data.
- Work to solve the dependency on Excel spreadsheets and associated issues.
- Balance IT staffing vs. current efficiency and workload.
- Continually look for workflow inefficiencies and solve.
- Evaluate procuring a new LIMS solution.
- Align the budgeting processes and eliminate inconsistencies for planning and cost tracking (Access vs. FRX).
- Implement business process for GIS updates as proposed.
- Buy and install Automated Vehicle Location (AVL) on fleet vehicles.
- Evaluate telemetry upgrades and implement additional mobility.
- Execute the resulting IT Plan.

## Sanitation District No. 1 Information Technology Framework

**Phase 200**  
IT System Inventory

### Phase 200 – IT System Inventory

The second project phase mainly included the documentation of existing information technology applications currently in use at SD1. Westin purposefully did not inventory or document IT hardware such as servers, desktop PCs, PDAs, radios, smart phones, or PLCs as part of this project.

Business Purpose	Application	Company/Vendor	Version	Last Update	Owner
Maintenance Management	Lucity	Lucity	Version 7.50		Deputy Director of Operations
Work Planning/Scheduling	Smart Sheet	Google	Version Cloud		Deputy Director of Operations
Sewer Condition Assessment	Scream	CH2M Hill			Deputy Director of Operations
Geospatial Data Management	ArcGIS	ESRI	Version 10.0 SP 4		IT Manager
Fixed Asset Tracking	Access	Microsoft	Version 2013		IT Manager
Financial Management	MS Dynamics – GP 2010	Microsoft	11.00.2164 (SP3) TP 20	Mar-13	Director of Finance
Financial Management	Frax Financial	Microsoft	6.7.12008	Oct-12	Director of Finance
Job Costing	Wennsoft Signature		11.00b03g097	Mar-13	Director of Finance
Procurement	ReQlogic	Microsoft			Director of Finance
Timekeeping	Paycor	Paycor		Auto Updates	HR Manager
Customer Management	CIS	IBM Rippe & Kingston	Proprietary	Continual	Director of Customer Care
Operations Management - Plant	HMI Software - GE Fanuc Proficy iFIX	General Electric	Versions 3.5 and 5.5		Director of Operations
Operations Management - Plant	PLC Programming Software - Concept	Schneider	Version 2.6 XL		Director of Operations
Operations Management - Collections System	HMI Software - Lookout	National Instruments			Director of Operations
Document Management	LaserFiche	Paper-Lite	9.0.2	May-13	Records Manager
Performance Reviews	Halogen eAppraisal	Halogen	11.2	Auto Updates	HR Manager
Training and Certifications	Halogen eLearning Manager	Halogen	11.2	Auto Updates	HR Manager
Laboratory Management	LabWorks	PerkinElmer	Version 6.2	2011	Laboratory Manager
Project Management	MS Project	Microsoft			Engineering
Fuel Purchases	SuperFleet	SuperFleet			Fleet Manager
Fleet Management	Lucity	Lucity			Fleet Manager
Reporting	SQL Server Reports	Microsoft			Various
Reporting	Crystal Reports	SAP	11.0.0.1282		Various

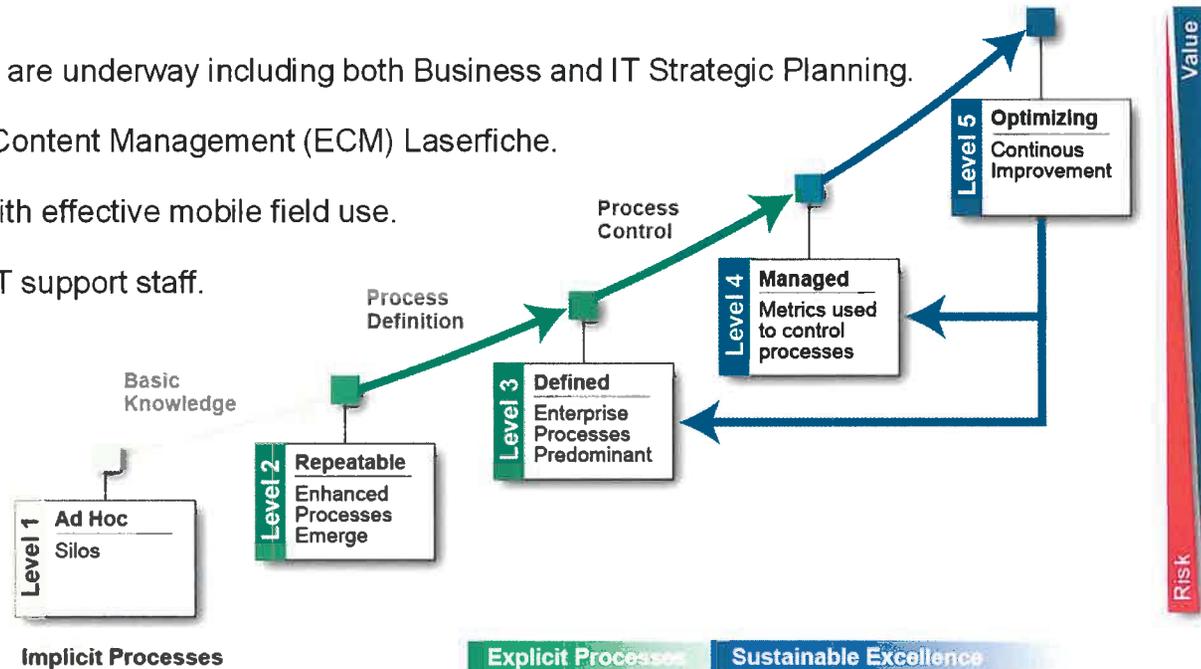
**Phase 300**  
IT Framework Document

## Phase 300 – IT Framework Document

Phase 300 included a best practices gap assessment and visioning session. The best practices gap assessment compared SD1's current IT Program against industry best practices to identify current success and key opportunities for improvement. Any quick wins were also noted. Westin also conducted an interactive visioning session to present the assessment findings, discuss the proper information flow (information map) and a sample business process analysis, and gain a common vision of where SD1 desires to be for optimum future IT expenditures.

### Notable Successes

- SD1 has grown quickly over a short period of time and has successfully adapted to growth.
- Capable and knowledgeable employees in various divisions have extensive knowledge of the existing information systems.
- Strategic Planning initiatives are underway including both Business and IT Strategic Planning.
- Excellent use of Enterprise Content Management (ECM) Laserfiche.
- GIS and Lucity integration with effective mobile field use.
- Dedicated and high quality IT support staff.





**Sanitation District No. 1  
Information Technology Framework**

# **Assessment Findings**

Least Desirable State

SD1

Most Desirable State

### ***Current State:***

- 3 Account Service employees perform billing functions and upload the data from Florence, Boone County and Northern Kentucky Water District for sewer/storm water bills.
- 12 Customer Service employees handle about 500 - 600 calls/day related mostly to payment inquiries for sewer and storm water services.
- Utility Billing is a proprietary system based on the RPG language maintained by IBM on an AS 400 system, based on “Green Screen” technology that is supported by Rippe & Kingston.
- The AS 400 payments need to be batched and processed after hours and then uploaded to the accounting system, thus creating significant delays.
- Meter data from the water districts is not highly accurate and requires significant manual intervention.
- Use a web-based system for credit card processing of 30,000 active CheckFree accounts.
- Payments are processed through a Lockbox with Huntington Bank.
- Walk in customers, electronic payments from the bank, and credit card and check payments taken by phone are processed through First Data using virtual terminals.
- A new phone system was installed 2 years ago and provides customer service statistics. The current reports receive limited management review.

Least Desirable State

SD1

Most Desirable State

### ***Recommendations:***

- Replace the existing CIS/Utility Billing System to provide additional functionality and account/billing information to customers, minimize redundant manual business processes and improve the efficiency of the Account Service Representatives.
- Establish customer self service abilities such as IVR for customers to make payments, or establish a website for customers to pay via credit cards over the Internet.
- Consider billing residential customers monthly and commercial customers on the same frequency that the Districts bill.
- Evaluate methods to improve the quality of data received from the local water utility. For example, the 2nd meter of a multi-meter account does not transfer. In addition, customer move-in / move-out data is not always accurate or up to date requiring manual interaction.
- Establish standards for First Call Resolution (FCR) and monitor call center performance.
- Eliminate duplication of data between the current Utility Billing System and GP.
- Improve the delinquency/collection business process between SD1 and the local water districts. Evaluate the cut off of storm water-only delinquent customers in Northern Kentucky Water District.



## Lucity - CMMS System

Least Desirable State

SD1

Most Desirable State

### ***Current State:***

- SD1 has several Lucity modules: Sewer, Storm, Equipment, Facility, Fleet, Inventory Stores, Buildings and Grounds, and Mobile and Work Orders.
- Counter tickets and associating counter purchases to work orders are managed within Lucity. Work orders capture labor, services and materials costs.
- Inventory is managed by the CMMS for maintenance materials as well as other commodities used by SD1 such as office and custodial supplies.
- Lucity is currently synchronized to GIS by IT staff.
- Work flow within Lucity varies from department to department; no standardization or coordination of changes and business processes.
- Preventative maintenance (PM) efforts are managed within the program for plant and remote site process equipment, underground infrastructure (in GIS), facilities and fleet.
- Planner views backlog outside of Lucity, arranges a schedule and crew assignments, then manually assigns work to crews using external Google Smart Sheet scheduling application.
- Current permitting for service laterals uses an orphan database.
- Assets are populated in Lucity but there is not a routine and automated process to enter the PM schedule in Lucity.
- User base has matured over the years and access to the system is outdated.

Least Desirable State

SD1

Most Desirable State

## ***Recommendations:***

- The CMMS ownership vs. maintenance and support roles should be defined and agreed upon within the organization.
- Access to the CMMS should be reviewed and updated to the current user capabilities; need to edit/modify/add information is presently limited through the system security and authorizations.
- Evaluate whether Lucity or another application can integrate permitting service laterals with Lucity/GIS.
- Review user security, access permissions and the ability to add/edit/retire equipment, PMs and reports.
- Review and address annually additional user training to field and management staff regarding the changes and improvements to Lucity.
- Review the integration of bar codes for inventory management.
- Link material withdrawals from the warehouse to a work order to eliminate manual processes.

Least Desirable State

SD1

Most Desirable State

### ***Current State:***

- GP has been in place for the last 10 years and was recently upgraded to TP 2010 version.
- Most of the departmental budget information is kept in spreadsheets and uploaded in GP.
- An Access database is used for fixed assets that is uploaded to GP.
- Began a new process to improve the fixed assets tracking about six months ago.
- The financial information is tracked in both Lucity and GP requiring double data entry.
- There is a different level of accuracy in respect to fixed assets based on their age within the GP system.
- Wennsoft is a job costing module that is not being used to its potential to provide project cost information to the GP system.
- Wennsoft has contract management capabilities that Finance would like to use to manage grants and contracts.
- GP provides some standard reports, but FRX, SQL Report Writer and Crystal reports are used to generate reports.
- No GP integration with Utility Billing System - the payment information from Utility Billing system is entered into a Excel spreadsheet and uploaded to GP at the end of the month.
- Utility payments are scanned and processed through the banks.

Least Desirable State

SD1

Most Desirable State

### ***Recommendations:***

- Integrate GP with the new Utility Billing System.
- Continue to improve the fixed assets tracking including asset inventory, condition assessment and fixed asset reporting.
- Evaluate third party applications to allow departments to enter budget information directly into GP.
- Utilize Wennsoft (job costing module) to its full potential in order to provide project cost information to the GP System.
- Utilize Wennsoft's contract management capabilities to manage grants and contracts.

Least Desirable State

SD1

Most Desirable State

### ***Current State:***

- SD1 uses the Paycor products and services for recording employees' time, generating payroll checks and for post processing.
- SD1's service area includes 35 incorporated cities. For employees whose work takes them throughout SD1's service area, the allocation among the cities is currently made annually.
- Employees record their arrival and departure time by swiping badges (available at all SD1 locations) or logging into an SD1 computer.
- The bi-weekly payroll cycle includes clearing up exceptions and issues (which are divided into critical and non-critical) which typically takes one day.
- Paycor performs the check processing, including making direct deposits and delivering paper checks and check stubs.
- When employees perform work on capital projects, the account code and time is coded and entered into an Excel spreadsheet.
- The Excel spreadsheet generates totals by account code for manual entries into SD1's GP financial system
- The reports that are provided on line are generally meeting the user's needs. Manual entries are made to SD1's GP system.

Least Desirable State

SD1

Most Desirable State

### ***Recommendations:***

- Integration of Lucity work orders with the payroll system could support labor distribution (including work on capital projects) and allocation of local taxes between the cities. This may be a complex effort.
- Human Resources management requests a secure e-mail site for use with confidential personnel matters.
- Human Resources management also requests the capability to fax and scan from desktop workstations, rather than the current practice of using dedicated fax machines.

### ***Current State:***

- SD1 utilizes the SQL-based version of the Geographical Information System (GIS) from ESRI.
- Current modules utilized by SD1 include ArcInfo, ArcMap, ArcPad and ArcReader.
- Data entry responsibility is shared by in-house staff and contracted services when required.
- IT Department is solely responsible for maintaining mapping layers and data entry for Maintenance, Operations and Engineering.
- Red line corrections noted from the field crews are submitted to the IT-GIS technicians for edits into the appropriate layer and data corrections.
- IT GIS staff validates new additions and red line edits in the field using a Trimble GEOH-6000 for sewer changes.
- ArcGIS is linked to SCREAM to display sewer pipe condition (attributes).
- The re-score of inspection data does not currently get updated into GIS as an attribute to the asset (pipe or manhole).
- CSRs are able to view customer address and account information.

Least Desirable State

SD1

Most Desirable State

### ***Recommendations***

- Suggest relocating GIS updating to Engineering.
- Solve the current gap in GIS data migration into ESRI.
- Solve the reported 4-year lag of data updates to GIS from field additions and new systems (contributed asses/new developments).
- Begin tracking ditches, channels and culverts.
- Enter the re-score of inspection data as a transaction in the CMMS (or other database), so that all inspections of an asset (pipe or manhole) can be accessed and viewed through GIS.

Least Desirable State

SD1

Most Desirable State

## ***Current State:***

- Capital expenditures will decrease from an annual budget of \$120M to \$40-50M as SD1 shifts from capital intensive program into an asset management based program.
- CIP is handled within Engineering in a database developed by Northern Kentucky University.
- Budget and project financial information requested from Accounting/Finance is entered into the CIP database to generate financial reports for the CIP projects.
- There is not a CIP project budgeting program that populates the MS Dynamics GP System automatically.
- There is a semi-standard process for storing CIP project data to ensure all project information is stored in one place electronically.
- CIP files are captured in folders for each project. Some files are captured on the Laserfiche server as well.
- Wennsoft is used to capture CIP financial information for reporting.
- New assets are not captured in GIS/Lucity during project construction phase, creating problems for the field crew doing work with incomplete data. When the project is finished, the GIS group receives the as-built drawings and the assets are entered into GIS.

Least Desirable State

SD1

Most Desirable State

## ***Recommendations:***

- Consider the selection and implementation of a modern COTS CIP Management Solution.
- Develop standardized templates for managing projects (such as change orders, etc.) for internal use and possibility for external use.
- Develop standard processes for storing and managing CIP project data and files (e.g., evaluate Laserfiche).
- Link CIP project schedules with CIP project budgets for more efficient budgeting.
- Expand the utilization of Wennsoft features to manage and forecast CIP projects.
- Develop integration or connectivity between various systems such as Collection System work orders with the Planning Group to improve current asset management processes.

### ***Current State:***

- Purchasing implemented the ReQlogic System in October 2012.
- Includes an automated workflow for purchasing.
- All employees can create a purchase requisition online.
- Purchase requisitions get routed to the originator's immediate supervisor with authority to approve the requisition.
- Upon approval, the requisition is automatically routed to Purchasing to create a purchase order.
- When the goods or services are delivered, the invoice (paper) is approved and routed to AP to input into GP and generate a check.

### ***Recommendations:***

- Improve the paper invoicing process by scanning the invoices.

Least Desirable State

SD1

Most Desirable State

### ***Current State:***

- SD1 has used the LabWorks LIMS application since 2004 and is on Version 6.2. Perkin Elmer continues to support this product and should serve the utility for many years.
- 2-3 instruments are interfaced directly with LabWorks.
- For the remainder, results are written in a bench book, calculations are performed by hand and the results are entered into LabWorks.
- SD1 is waiting for the arrival of version 6.4 which will then be placed into service.
- SD1 is not utilizing the Sample Scheduler function to automate sample creation and sample tracking.
- Kentucky has adopted the Federal NetDMR standard for regulatory submitting, however SD1 and Perkin Elmer have not coordinated to get SD1's NetDMR package functioning.
- SD1's Information Technology staff requires Citrix to simplify service and upgrades; PerkinElmer reports that LabWorks is certified for use with Citrix.
- The Laboratory is running into limits with its 5 seat licenses, but an evaluation of possible solutions has not been performed.

## ***Recommendations***

- Upgrade to LabWorks version 6.4 - the most current stable version.
- Activate the LabWorks Sample Processor module to automate sample log in, sample tracking and chain of custody creation.
- Require all non-lab users to view data over the LabWorks Explorer function, instead of logging into LabWorks directly.
- Consider an auto time-out for idle LabWorks users logged into the system. This may help with the current seat license limitations.
- Interface as many instruments as possible to LabWorks.
- If issues with the bar code printer, scheduler, NetDMR, & instrument interfaces cannot be resolved, consider the future replacement of LabWorks with another stable COTS LIMS solution.
- Integrate with SCADA to eliminate manual entry of flow data.

Least Desirable

SD1

Most Desirable

### **Current State**

#### **HMI:**

- GE Fanuc Proficy iFix is a robust HMI software package that is used by numerous water and wastewater utilities across North America.
- GE continues to support this product and it should serve the utility for many years.

#### **OITs:**

- The OITs are industrial PLCs that operate as remote HMI workstations and allow an operator to view the same information that is viewable from the control room.

#### **PLCs:**

- Quantum PLCs are a robust PLC that are still supported.

#### **Service and Support:**

- Using one company to support the system helps to ensure that the programming is consistent across all equipment.

#### **Network:**

- SDI has leveraged its WAN for communications to major lift stations.
- The fiber optic network is resistant to electromotive interference (EMI) and is generally more reliable than copper.



## ***Recommendations:***

### **HMI:**

- Software has been updated 5 times since release 3.5 and is currently on version 5.5. This older iFix version and the operating system are no longer supported. Upgrade to the latest version of the software and operating system.
- There is no standard color to indicate running, stopped, open, and closed across the plants, and no associated text to indicated status. Develop HMI standards that would be consistent across SD1.
- Consider using Microsoft Active Directory (AD) to assign and enforce security policies on all SCADA computers. Each operator and supervisor should have their own login credentials and events should be recorded in the historian.
- Virus protection software should be running on all SCADA computer. Virus definitions should be updated and log files should be monitored for an event.

### **Historian:**

- Store SCADA data on a SCADA historian for analysis and reporting. This allows for long-term storage of levels, flows, events and alarm history and aids in sharing SCADA data with enterprise applications including LIMS and CMMS.



## ***Recommendations:***

### **OITs:**

- Loss of communications back to the HMI servers may prevent an operator from operating a piece of equipment directly associated with an OIT.
- Where necessary, the OIT should switch over to stand alone mode and communicate directly with the local PLC.
- Hard drives on industrial PCs can be unreliable. Therefore, SD1 should consider having spare hard drives fully configured or spare OITs fully configured.

### **PLCs:**

- The Concept PLC programming software is obsolete and only supported on Windows NT and XP operating systems. Schneider Electric has migrated SD1's PLC programming software from "Concept" to "Unity" which supports a larger family of PLCs products.
- Consider migrating to Unity. A migration will require recompiling the PLC code using a conversion utility to Unity.
- The existing PLC processor will also require a new Unity executable to be downloaded.



## ***Recommendations:***

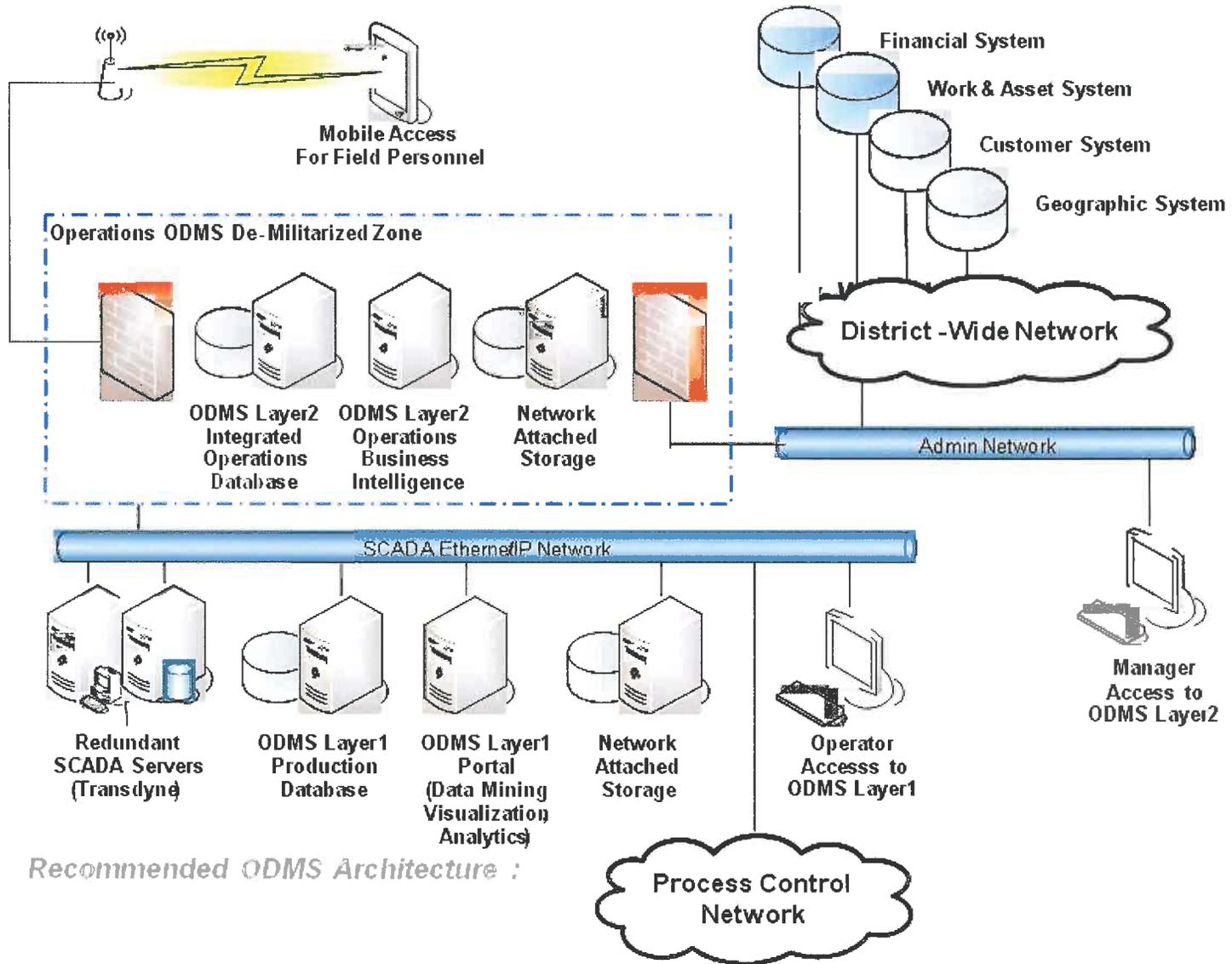
### **Network:**

- Separate the SCADA network from the Enterprise network.
- Create a DMZ using two firewalls between the Enterprise and SCADA networks.
- A SCADA terminal server or web server should be installed in the DMZ for remote access.
- Only dedicated laptops with the correct authentication should be allowed to access the terminal server or web server using encryption.
- Critical sites should have two different communications paths back to the HMI.
- Consider implementing 802.1x authentication protocol to prevent unauthorized port access (plugging device into unused switch or wall network port).
- The SCADA network and log files should be monitored for unauthorized use, detection of an intruder and quarantined viruses.
- Consider pushing Ethernet out to the remote sites that would allow for video monitoring (CCTV), Telephone (VoIP), Access Control, remote RTU configuration, and diagnostics.
- Consider upgrading the radio network for Ethernet communications.

### **Service and Support:**

- Consider hiring a technician to develop SCADA standards, maintain documentation and backup programs and to support the system.

# Operational Data Access



Recommended ODMS Architecture :

Least Desirable State

SD1

Most Desirable State

## ***Current State:***

- Knowledgeable 2-person staff dedicated to records management.
- Executive management support for records management.
- Have established a master retention schedule “in big buckets.”
- Utilizing Laserfiche to execute records management (RM) policies.
- Using workflow to automate RM business processes including retention schedules, version control and records destruction.
- Training SD1 staff in RM policies and processes.
- Currently implementing policies and procedures on vital records and disaster recovery.

Least Desirable State

SD1

Most Desirable State

## ***Recommendations***

- Continue applying RM standards and policies throughout the enterprise.
- Continue bringing paper and electronic records into Laserfiche and other RM tools.
- Complete implementation of policies and procedures on vital records and disaster recovery.
- Continue implementing procedures to assure compliance with legal holds.
- Continue updating master retention schedule to address changing state and regulatory requirements.
- Develop retention control for share drives.
- Address RM for cloud computing.



Least Desirable State

SD1

Most Desirable State

## ***Current State:***

- IT group is consist of eight (8) employees: 1 IT manager, 5 GIS specialists and 2 technology staff.
- IT provides help desk support, application support, mobility support, server support and infrastructure support.
- IT supports about 50 mobile users, mainly using Lucity software in the field.
- IT Manager provides dual role of network support and overall IT management.
- IT vision and strategy is not documented.

Least Desirable State

SD1

Most Desirable State

### ***Recommendations***

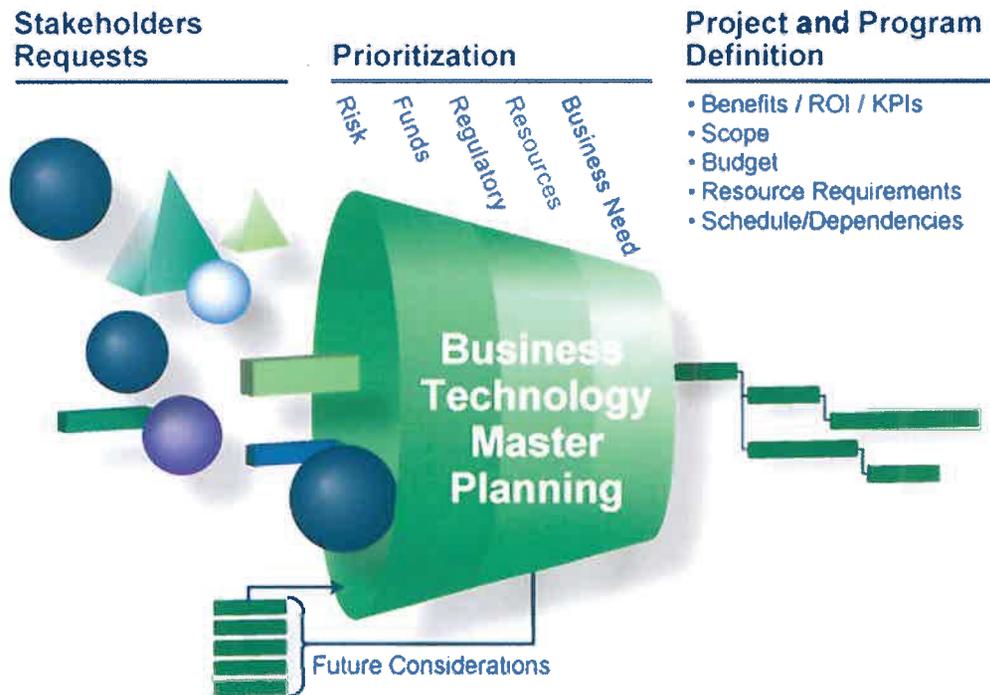
- Create and fill a Business/Information Technology Leader Position to implement the recommendations contained within this report in alignment with the technology solutions necessary to support SD1's stated business objectives.
- Establish a collaborative approach to technology management including IT governance, data ownership, process improvement and data integration and management.
- Establish Program Management Standards for all IT Projects.
- Establish an enterprise-wide data ownership and data integration strategy.

### ***Recommendations***

- Develop an overarching SCADA Master Plan to prioritize, coordinate and guide automation efforts.
- Develop a Business Continuity and Disaster Recovery Plan.
- Improve data storage, especially for large volume of sewer videos.
- Microsoft FRx is currently in a phased discontinuation state. No new releases of Microsoft FRx are planned. Microsoft's official FRx replacement is Management Reporter.
- Integrate the scheduling task into Lucity as opposed to side streaming work orders from Lucity into Google Smart Sheet and manually assigning work orders to personnel and start dates outside of Lucity.
- Citrix provides mobile link to Lucity, GIS, SCREAM, Arc Reader and a few others. Need improved diagnostic service from IT staff to resolve connectivity issues and increase data speed to remote sites.
- Implement an integrated Human Resources Information System (HRIS) which supports the full employment life cycle from position control and applicant tracking through termination and/or retirement administration (i.e., instead of just using Halogen for Performance Reviews).

## Implementation Plan

Westin performed an initial prioritization of the most significant opportunities for improvement. The main factors used for this initial prioritization were risks and Westin’s understanding of SD1’s business needs. However, the initial prioritization did not address the associated project costs, available SD1 resources or current and/or pending regulatory requirements. Additional effort is recommended to refine the recommended implementation schedule. A scope of work is required to further detail each of the listed initiatives, including estimated resource requirement (costs and personnel) and any foreseeable interdependencies with other on-going or future SD1 initiatives.



An Information Technology and Management Governance Committee should be formed to review and evaluate all future significant IT investments to ensure that they will achieve the overall business purpose of SD1, including:

- Alignment with current and future business and regulatory needs;
- Prioritization of IT expenditures based on business risk, cost avoidance, work practice efficiency, and other pertinent factors;
- Conformance to standardized technology platforms;
- Integration with other related technology applications; and
- Ease of use.



# Sanitation District No. 1 Information Technology Framework

## Preliminary Program Framework

	Projects	Year 1				Year 2				Year 3				Year 4				Year 5				
		Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	
New Projects	SCADA System Upgrade	Plan, Define, Design																				
	Replace CIS and Utility Billing			Plan, Define, Design	Support, Enhance																	
	Lucity CMMS Enhancements						Plan, Define, Design	Support, Enhance	Support, Enhance													
	GIS Data Migration/Updates	Multi-Phase Project																				
	CIP Program Enhancements										Plan, Define, Design	Plan, Define, Design	Plan, Define, Design	Plan, Define, Design								
	Upgrade/Replace LabWorks		Plan, Define, Design	Plan, Define, Design	Plan, Define, Design											Plan, Define, Design						
	Records Management	Multi-Phase Project																				
	Business Continuity/Disaster Recovery					Plan, Define, Design	Plan, Define, Design	Plan, Define, Design	Plan, Define, Design										Plan, Define, Design	Plan, Define, Design	Plan, Define, Design	Plan, Define, Design
Existing Projects	IT Governance		Plan, Define, Design	Plan, Define, Design	Multi-Phase Project																	
	Business/IT Leader	Plan, Define, Design	Plan, Define, Design																			
	Enterprise Data Management			Plan, Define, Design	Plan, Define, Design	Plan, Define, Design	Plan, Define, Design															
	Program Management		Plan, Define, Design	Multi-Phase Project																		
Tech. Projects	Business Intelligence			Plan, Define, Design	Plan, Define, Design										Plan, Define, Design							
	Integration														Plan, Define, Design							

Legend

Plan, Define, Design
  Construct, Deploy
  Support, Enhance
  Multi-Phase Project

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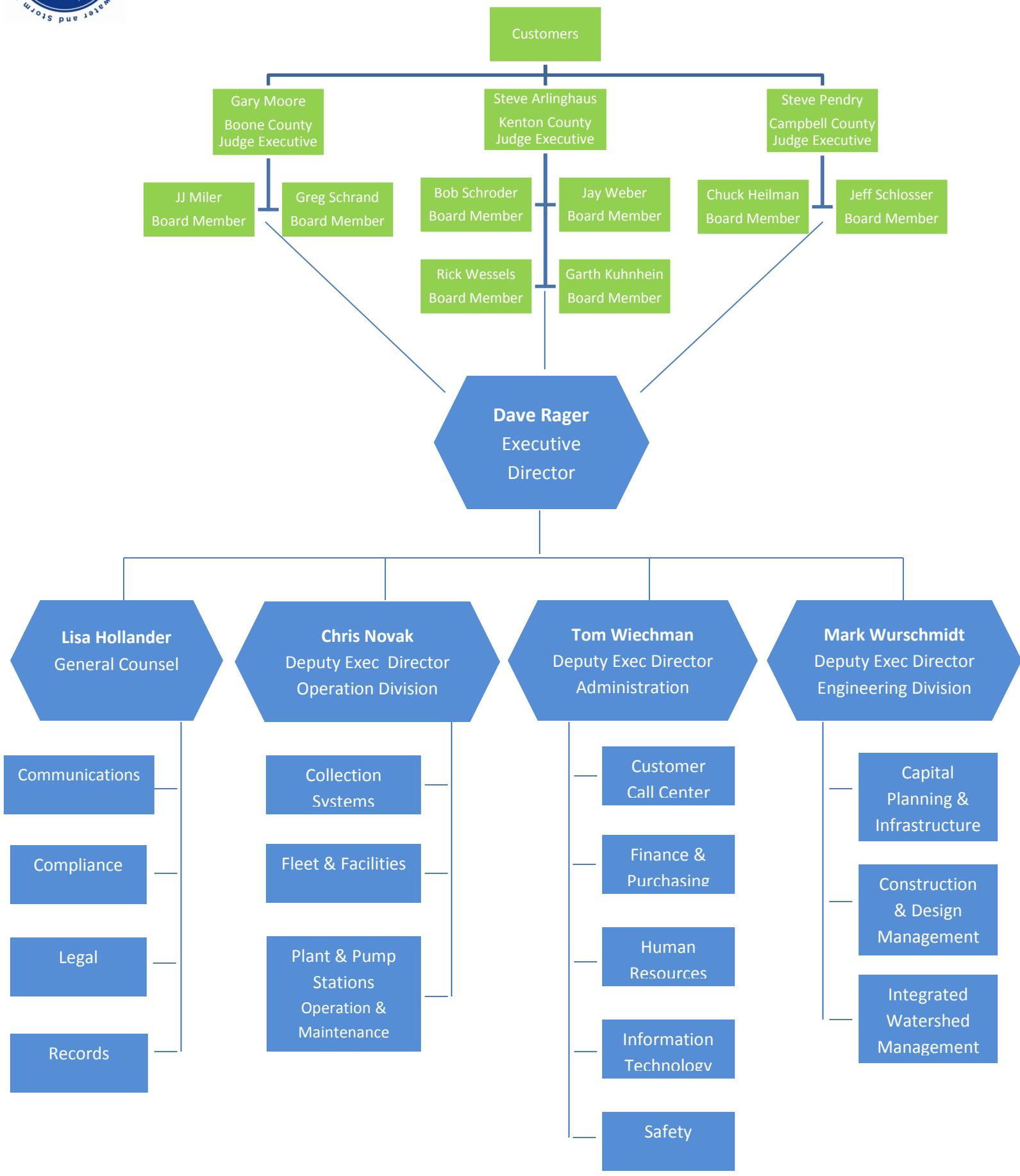
## **APPENDIX H:**

### ***FY 2013 Organizational Charts and Division Responsibilities***

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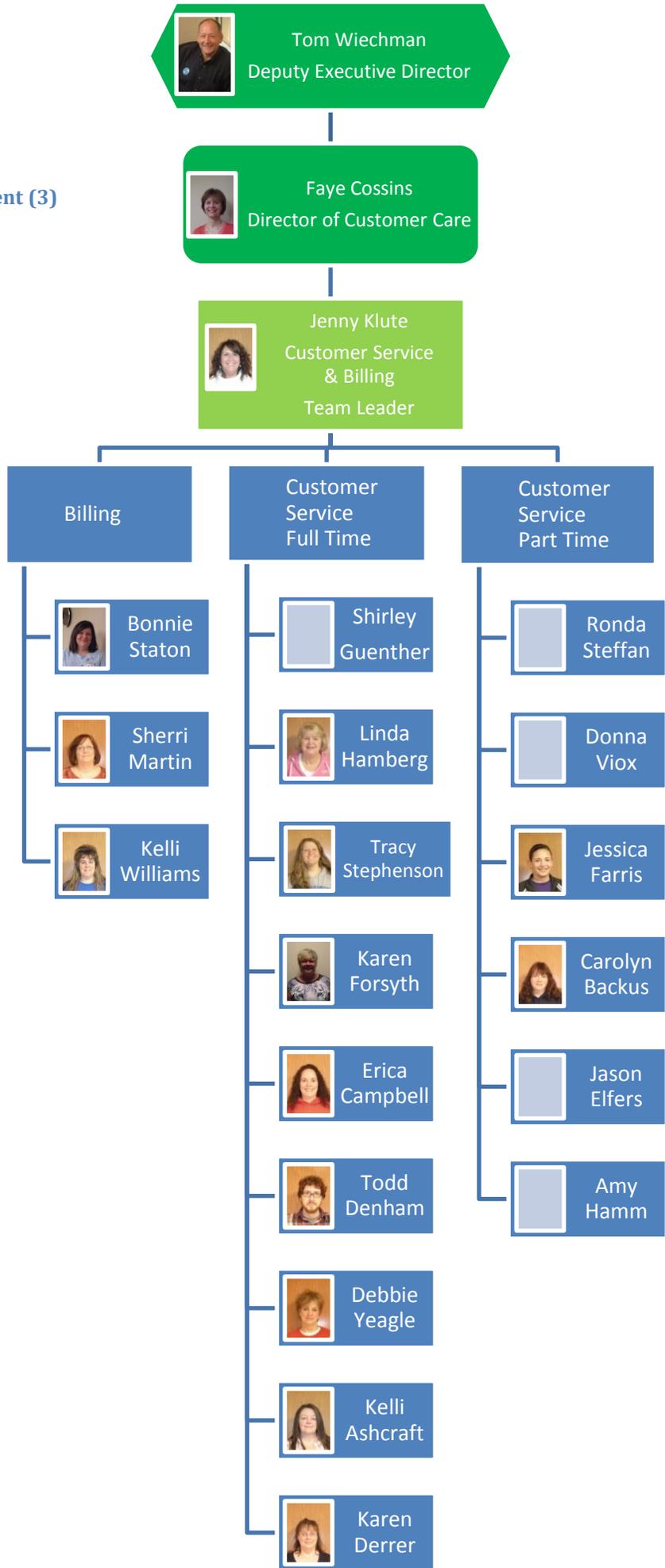
Overall Structure & Direct Report to the Executive Director





Administration Division

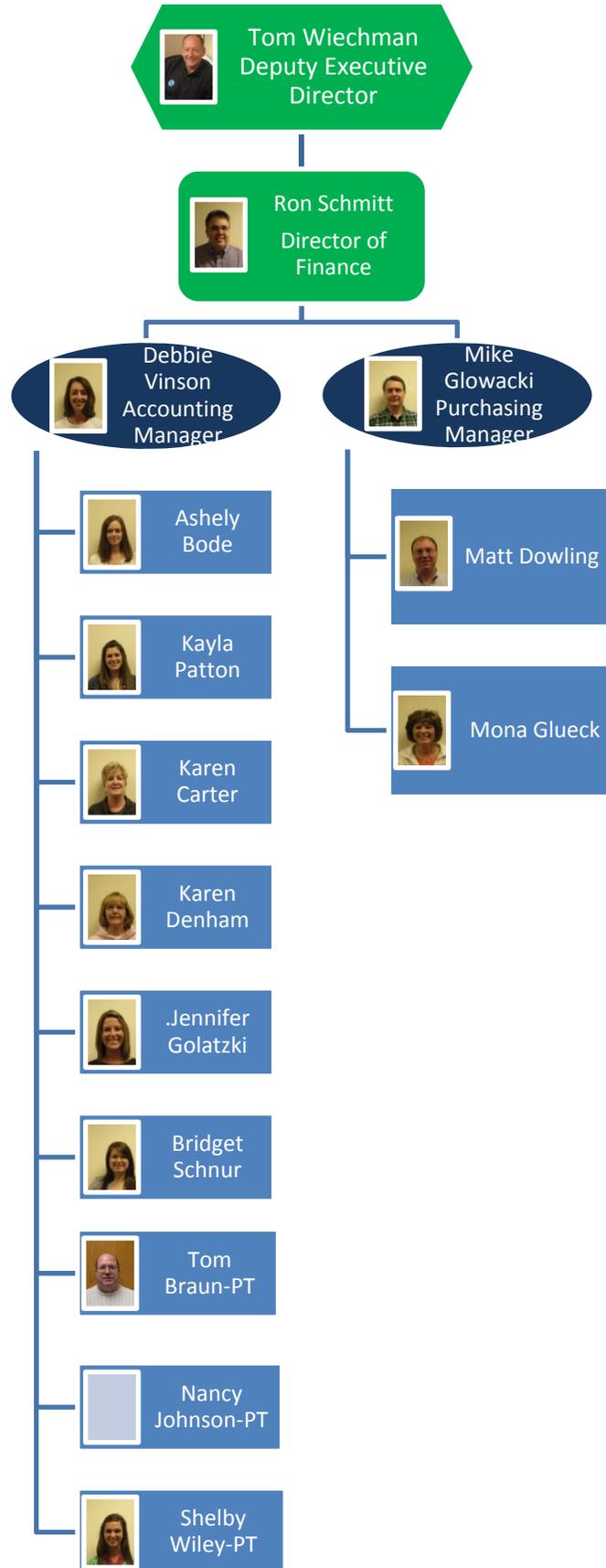
Customer Service Department (3)





Administration Division

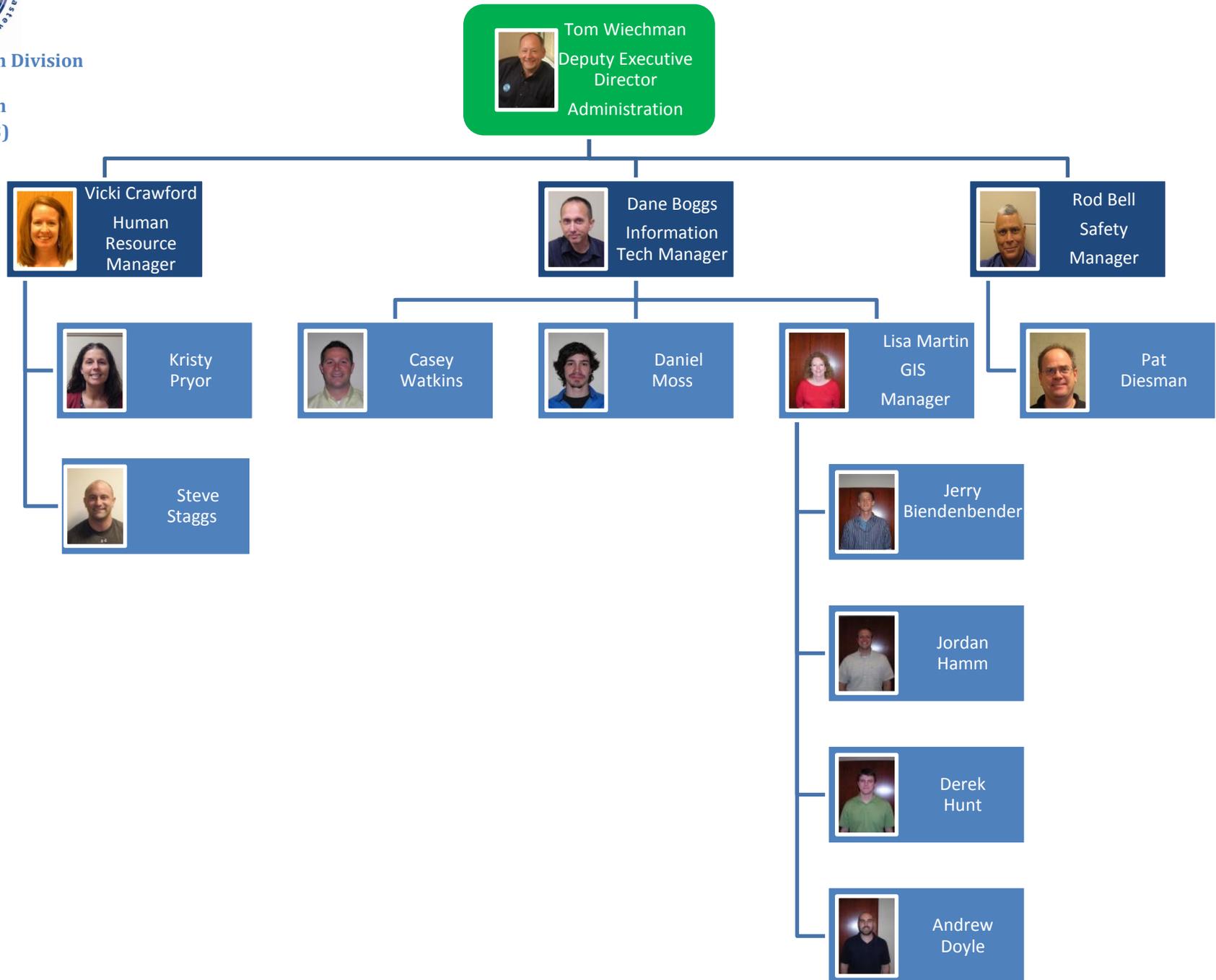
Finance & Purchasing  
Department (3)





Administration Division

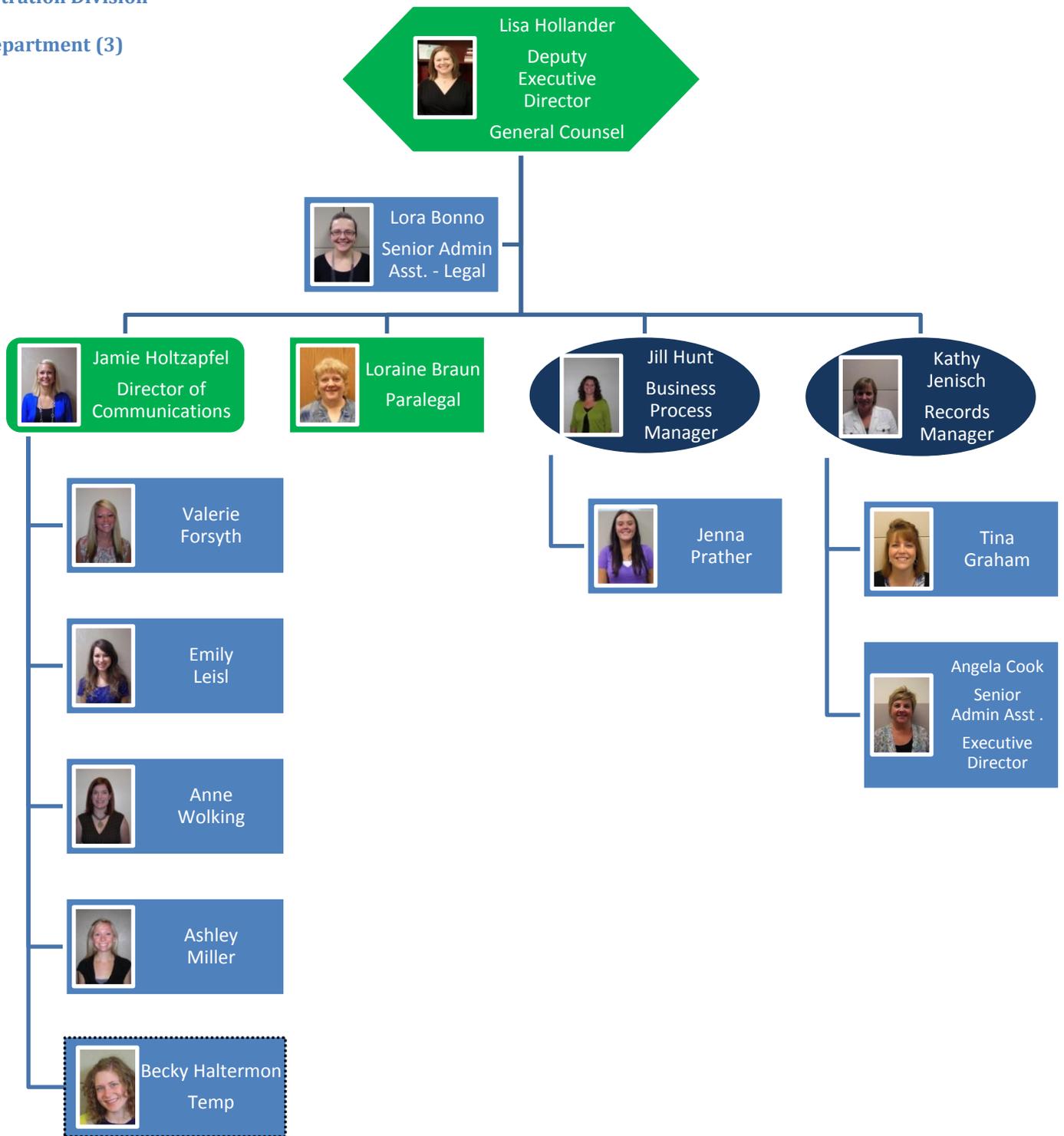
Administration Department (3)





Administration Division

Legal Department (3)





**Engineering Division**

**Design & Construction  
Management Department (5)**

Mark Wurschmidt  
Deputy Executive  
Director  
Engineering

Ralph Johnstone  
Director of  
Design & Construction  
Management

Rob Schroeder  
Senior  
Engineer

Daniel Doss

Bob Wilson

Doug Malone

Mark Griffith

Mike O'Bryan

Donna Biddle

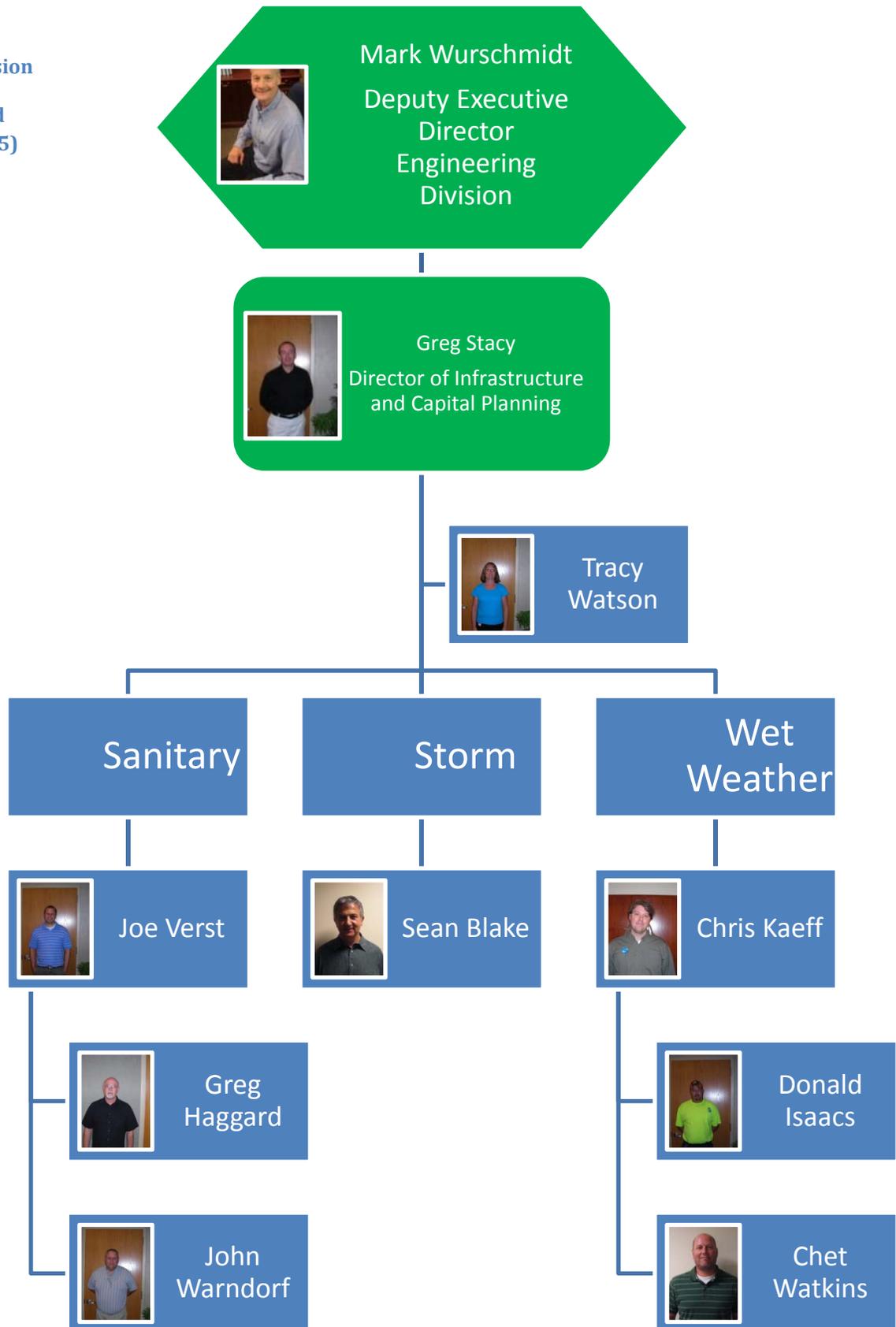
Mike Vice

Susan  
Osterhage



Engineering Division

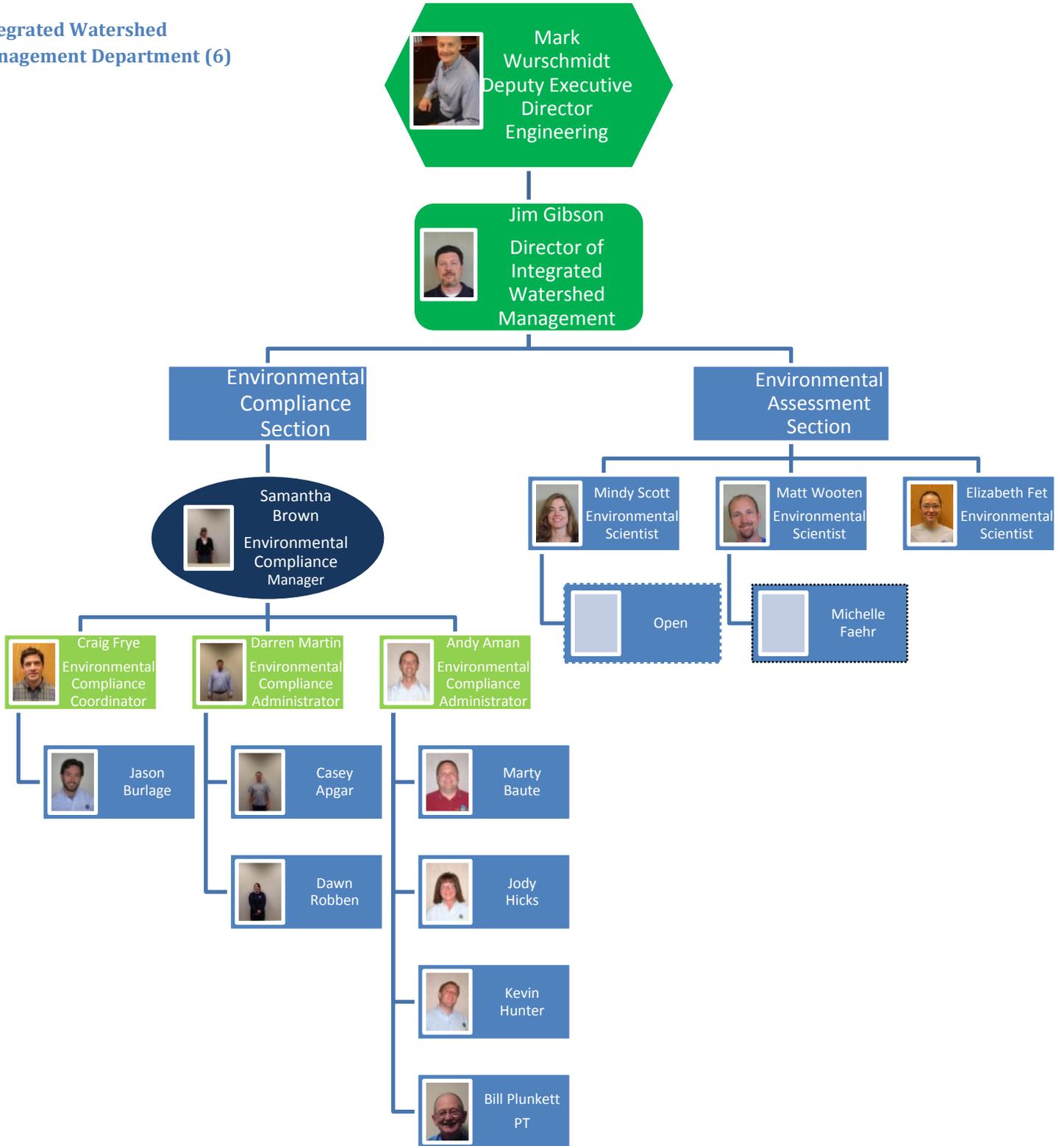
Infrastructure and  
Capital Planning (5)





**Engineering Division**

**Integrated Watershed Management Department (6)**





**Chris Novak**  
Deputy Executive  
Director of Operations

**Rich McGillis**  
Director of  
Collection Systems

**Donnie Couch**  
Asset  
Maintenance  
Manager

**Kayla Evans**

**Craig Massie**  
Corrective  
Maintenance  
Coordinator

**Josh Campbell**

**Gerry Helm**

**Greg Braunwart**  
Preventative  
Maintenance  
Coordinator

**Cap Kiser**  
Corrective  
Maintenance  
Team Leader

**Brian Moore**

**Ray Simpson**

**Al Carson**

**Jeremy Spada**  
Preventative  
Maintenance  
Team Leader

**Darrell Meader**  
Preventative  
Maintenance  
Team Leader

**Bill Mullins**  
Preventative  
Maintenance  
Team Leader

**Donnie Robers**  
Preventative  
Maintenance  
Team Leader

**Joe Endicott**

**Chris Cornett**

**Kerry Huff**

**Robert Knight**

**Mike Hurst**

**Mark Groger**

**Andy Cotton**

**Bill Branch**

**Jason Schultz**

**Greg Hedlund**

**Chris Peters**

**Randy Moore**

**Mike Friedhoff**

**John Runge**

**Pete Garvey**

**John Stephenson**

**Richard Turner**

**Andy Tomlinson**

**Todd Houston**

**Shelby Fields**

**Richard Baker**

**Elmo Young**

**James Middleton**

**Jimmy Stephenson**

**Robert Shanker**

**Robbie Stumpf**

**John Halpin**

**Alex Stamper**

**Dalton Edmonds**

**Chris Wesselman**

**Rick Burns**

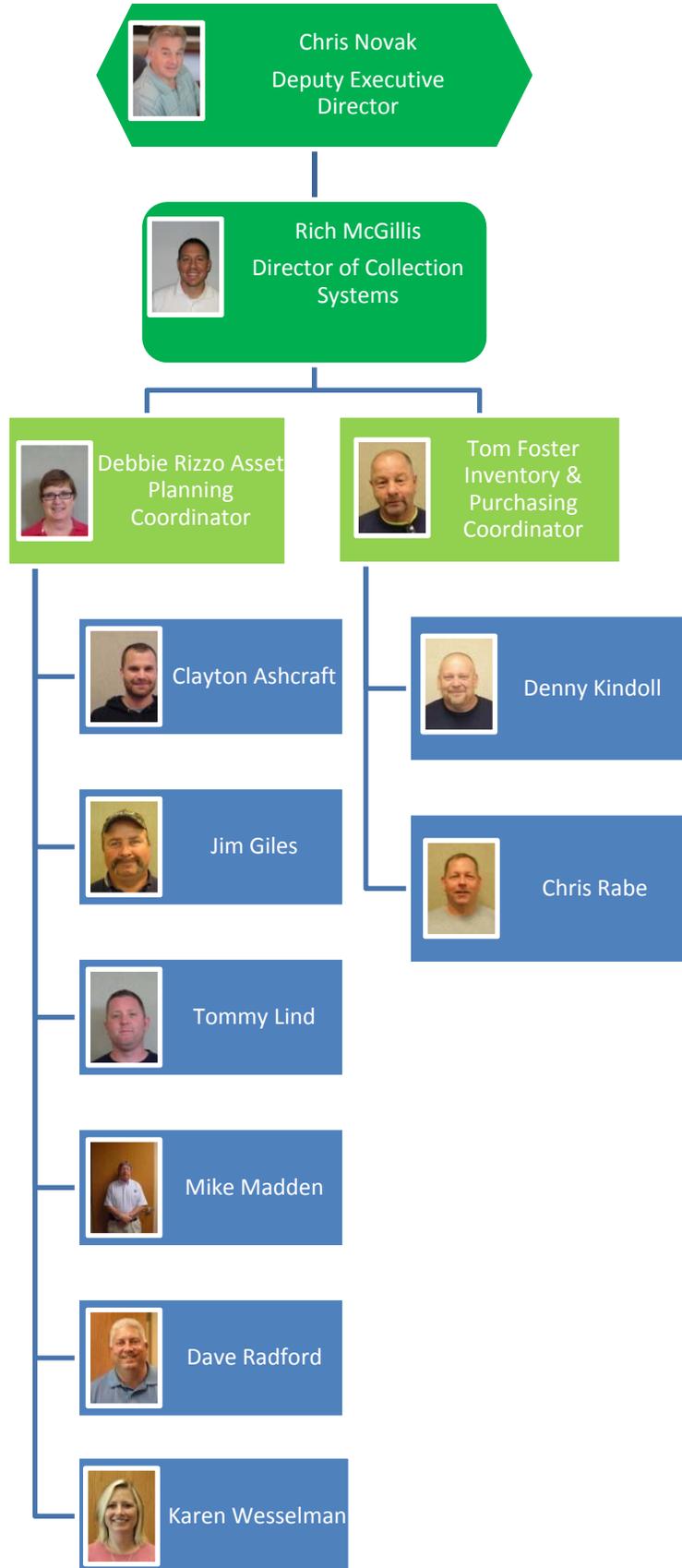
Operations Division

Collection Systems-  
Asset Maintenance Department (2)



Operations Division

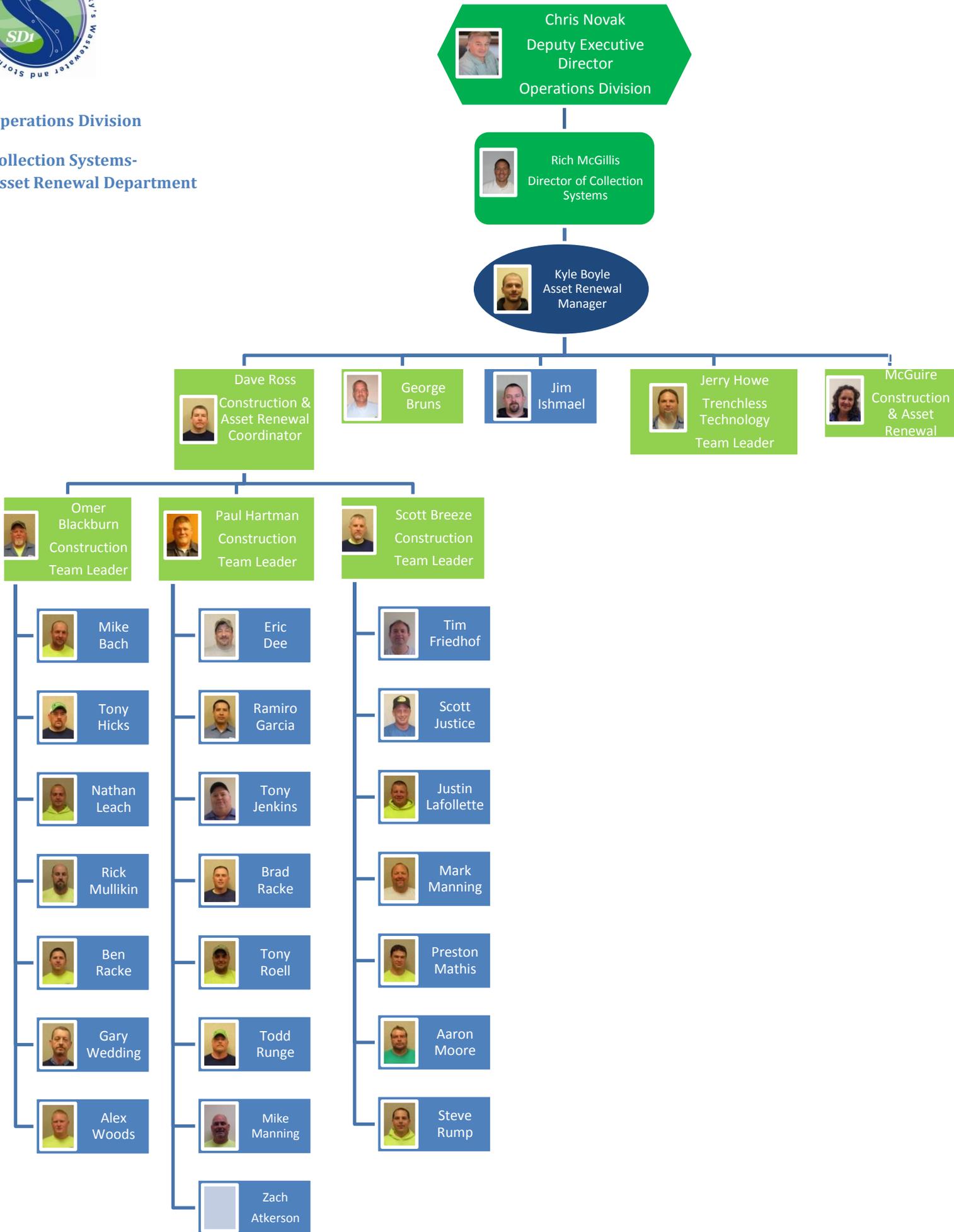
Asset Planning & Inventory  
Department (2)





**Operations Division**

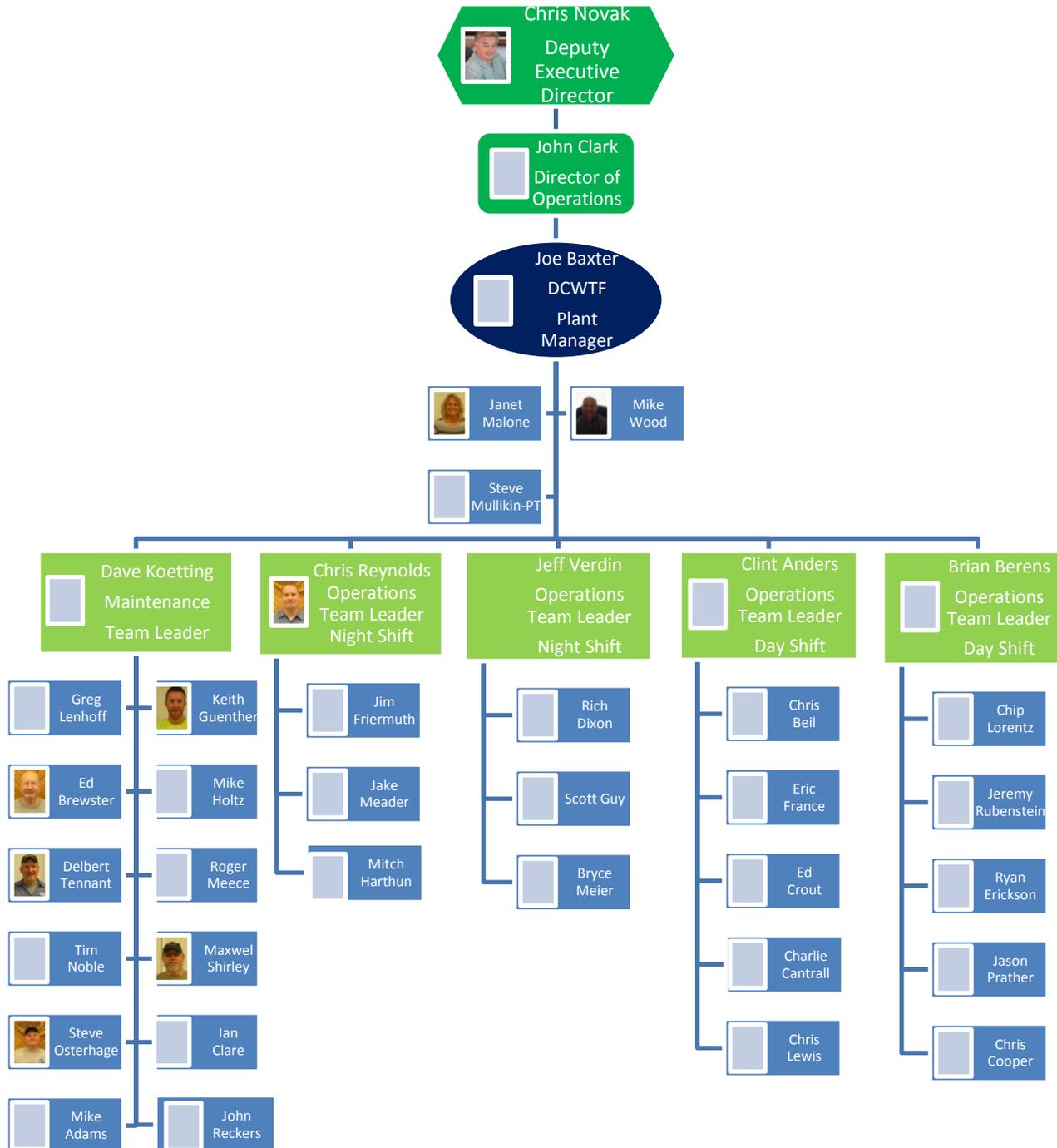
**Collection Systems-  
Asset Renewal Department**





## Operations Division

### Dry Creek Wastewater Treatment Facility (1)





Operations Division

Eastern Regional & Small Plants Department (8)



Chris Novak  
Deputy  
Executive  
Director



John Clark  
Director of  
Operations



Mark Pryor  
Regional  
Plant  
Manger



Jason Case  
Eastern  
Regional  
Team Leader



Hasten Wright  
Small Plants  
Team Leader



Operations



Maintenance



Tim  
Bracke



Gary  
Ashcraft



Rick  
McDannold



Pat  
Keene



Mitch  
Mieman



Tom  
Holtkamp-PT



Jason  
Schmits



Mike  
Eversole



Mark  
Watton



**Operations Division**

**Fleet & Facilities  
Department (4)**

Chris Novak  
Deputy Executive  
Director  
Operations Division

Lisa Hensley  
Admin Asst  
Operations

Steve Hamberg  
Fleet Manager

Jay Ashcraft

George Robinson

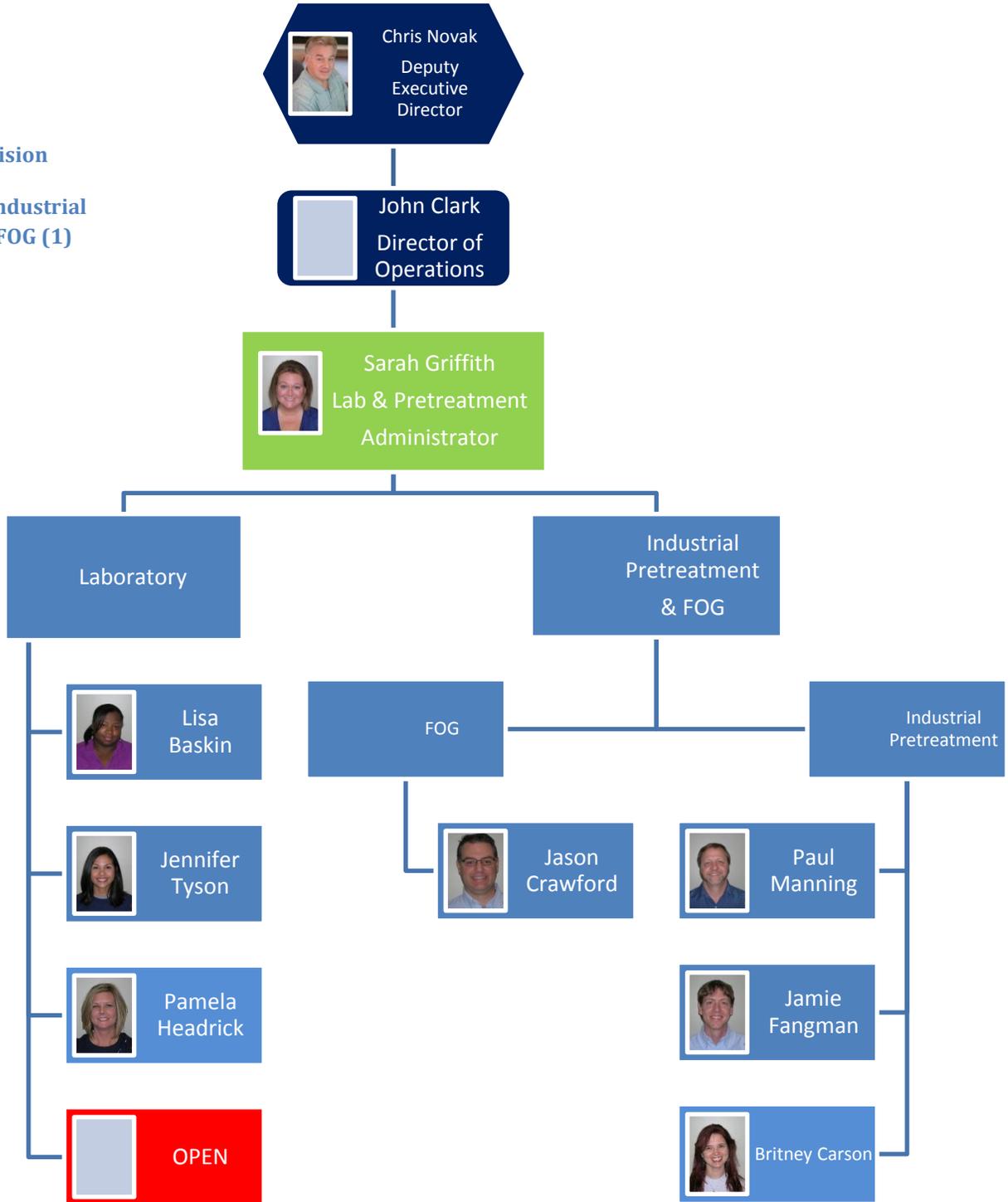
Jonathan Fletcher

Tom Dorning  
Facilities Temp



**Operations Division**

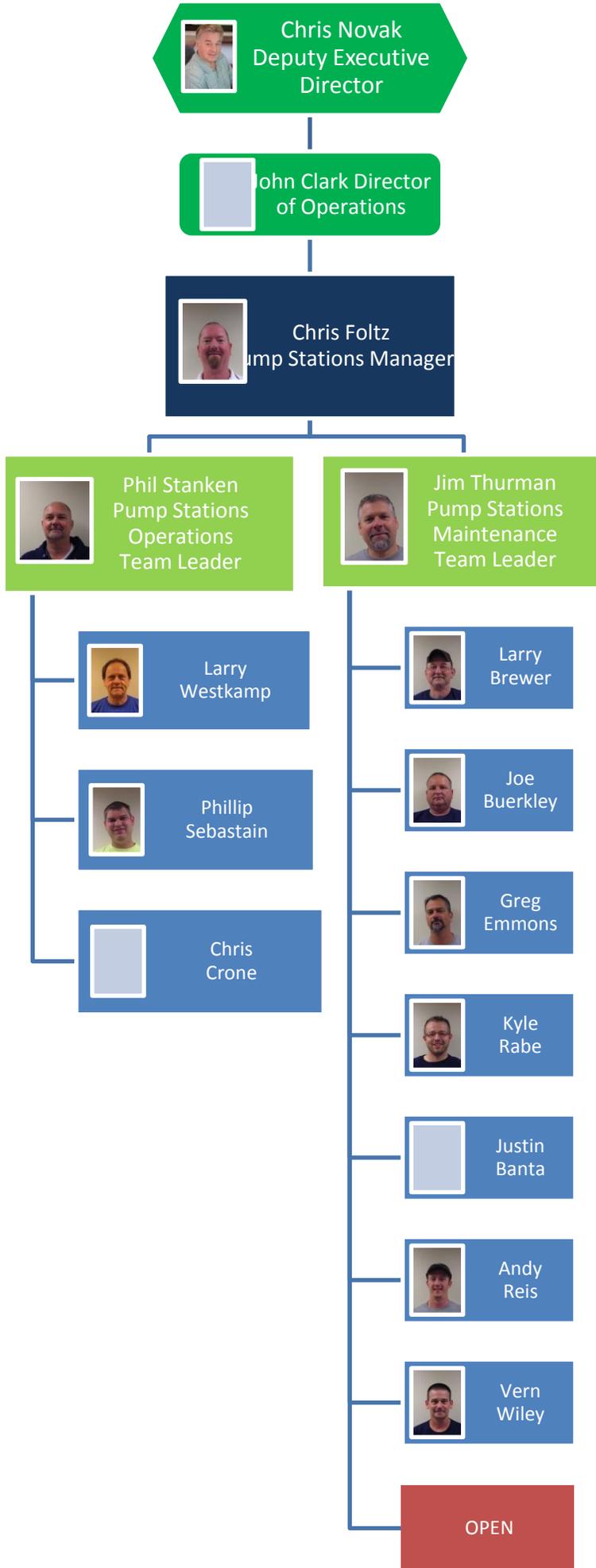
**Laboratory & Industrial Pretreatment/FOG (1)**





Operations Division

Pump Stations  
Department (7)





**Operations Division**

**Western Regional Water  
Reclamation Facility (9)**

Chris Novak  
Deputy Executive  
Director

John Clark  
Director of  
Operations

Mark Pryor  
WRWRF  
Plant Manager

Maintenance

Scott Lucas

Larry Stange

Chris Robinson  
Operations  
Team Leader

Day Shift

Chad Malone

Greg Tomlin

Night Shift

Tony Bingham

Robert Bentley

Mike Buhite  
Operations  
Team Leader

Day Shift

Tom Hale

Mike Kleier

Night Shift

Justin King

Rich Middleton

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# SD1 Engineering Division

## Integrated Watershed Management Department

### Key Activities:

- Creates the scientific foundation for integrated watershed management plans and capital projects
- Continuous Holistic assessment of service area watersheds
- Water quality monitoring and modeling
- Management of Storm Water program rules and regulations
- SW Phase II permit compliance
- Creation of Consent Decree Watershed Concept Plans based upon integrated plans
- Perform SW plan reviews and Permitting
- Sediment and erosion control inspections
- BMP installation and post-construction inspection
- Monitor and facilitate SD1 participate in the creation of sanitary and storm water regulations at the state and federal levels.

## Infrastructure Capital Planning Department

### Key Activities:

- Analyze operational data from Collections System , Treatment, and Facilities Departments
- Maintain collection system modeling
- Develop and maintain storm water system modeling
- Develop and maintain collection and conveyance master plans.
- Identify needed/desired capital projects in conjunction with all SD1 Departments
- Creation and annually updating SD1's 10 year capital project plan and budget
- Prepare quarterly reports on status of capital projects
- Perform capacity assurance /reservation capacity reviews
- Perform plan reviews and permitting
- Maintain SD1 compliance with Consent Decree management and reporting
- Management of sanitary program rules and regulations
- Maintain flow monitoring program

## Design and Construction Management Department

### Key Activities:

- Maintain design standards based on current technologies/practices
- Based upon 10 year capital project plan develop individual and overall capital project schedules
- Prepare preliminary project alternative designs and budgets for projects over \$50,000.
- Reevaluate project benefits verses project costs for go/no go decision.
- Develop detailed design plans and construction bid specifications
- Obtain operating unit sign off on project plan and design
- Conduct construction bids
- Perform construction management and inspection
- Prepare information for quarterly capital project status reports
- Complete construction documentation, financial reporting, and project closeout
- Turn completed capital asset over to appropriate operating department.

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# SD1 Operations Division

## Treatment Plant and Pump Station Operations Department

### Key Activities:

- Operate SD1 treatment plants and pump station facilities so that SD1 is in compliance with federal, state, and local laws and regulations
- Prepare designs and manage construction of capital projects with budgets under \$50,000.
- Complete all NPDES reporting requirements on behalf of SD1.
- Develop and maintain plant and pump facility asset master plans.
- Maintain all SD1 lab facilities and services
- Perform field compliance monitoring (FOG, Industrial surcharge, etc.)

## Sanitary and Storm Water Collection Systems Department

### Key Activities:

- Maintain and operate SD1's sanitary collection system and storm water conveyance systems in compliance with federal, state, and local laws and regulations.
- Prepare designs and manage construction of capital projects with budgets under \$50,000.
- Be responsible for an asset management program that can be used to develop collection and conveyance master plans and capital project plan.
- Develop rapid response plans that maximize customer satisfaction and minimize customer property impact.
- Provide field data collection capabilities sufficient to support collection and conveyance system master planning.

## Facilities and Fleet Management Department

### Key Activities:

- Maintain quality operations facilities on Eaton Drive sufficient to support the needs and requirements of all other SD1 departments.
- Maintain quality fleet sufficient to support the needs and requirements of all the other SD1 departments.
- Manage SD1's fuel management, fuel supply contracts, and fleet maintenance systems.
- Prepare designs and manage construction of capital projects with budgets under \$50,000. Develop and maintain facility and fleet master plans.
- Develop and manage fleet purchase/replacement budget for district

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**APPENDIX I:**  
***FY 2013 Safety Training Catalog***

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# SD1



## Fiscal Year 2013 Safety Training Schedule and Calendar of Events

## Introduction

In order to ensure the overall health and safety of each SD1 employee and to satisfy the requirements of SD1, the training described and assigned in this document has been chosen based on job hazard analyses performed as required by OSHA Standards Parts 1910 (General Industry) and 1926 (Construction Industry) as adapted and promulgated by Kentucky Revised Statute Chapter 338

This document is intended to be used as a planning tool as well as a source of information for individual employees to ensure that each are aware of the safety training expectations held by SD1 concerning various positions, job descriptions, and certification requirements.

This calendar includes, but is not limited to:

- Courses offered
- Course elements
- Class Dates
- Class duration and size limits
- Descriptions of job categories that have required safety training
- SD1 Instructors and Subject Matter Experts

### SD1 Instructors/Subject Matter Experts

Chris Beil	Office Safety
Hazard Communication	Contract Employer Responsibilities
Rod Bell	Fire Safety Emergency Action Planning
Electrical Safety	Swift Water Awareness
Hazard Communication	Scaffolding and Ladders / Powered Platforms
Permit Required Confined Space Entry Rescue	Excavation / Trenching Safety
Traffic	Shelby Fields
Forklift	Permit Required Confined Space Entry Rescue
Office Safety	First Aid / CPR
Contract Employer Responsibilities	Chris Foltz
Fire Safety Emergency Action Planning	Electrical Safety
Swift Water Awareness	John Halpin
Scaffolding and Ladders / Powered Platforms	First Aid
Hazardous Waste Operations and Emergency Response:	Traffic
Operations Level	Donald Isaacs
Excavation / Trenching Safety	Permit Required Confined Space Entry Rescue
Brian Berens	Dennis Kindoll
First Aid	Traffic
Hazard Communication	Forklift
Swift Water Awareness	Excavation / Trenching Safety
Permit Required Confined Space Entry Rescue	Dugan Knight
Scott Breeze	Forklift
Excavation / Trenching Safety	(open)
George Brunns	Hazard Communication
Permit Required Confined Space Entry Rescue	Brian Moore
Fire Safety Emergency Action Planning	Fire Safety Emergency Action Planning
Josh Campbell	Steve Osterhage
Fire Safety Emergency Action Planning	Electrical Safety
Donnie Couch	Donnie Roberts
First Aid	Permit Required Confined Space Entry Rescue
Permit Required Confined Space Entry Rescue	Vern Wiley
Fire Safety Emergency Action Planning	Hazard Communication
Jason Crawford	Swift Water Awareness
Hazard Communication	Permit Required Confined Space Entry Rescue
Pat Diesman	Scaffolding and Ladders / Powered Platforms
First Aid	
Electrical Safety	
Hazard Communication	
Permit Required Confined Space Entry Rescue	
Traffic	
Forklift	

## Notes

- Supervisors will be required to independently complete online NIMS Training Courses 100 and 700;
- The following training/tests are administered at the St. Elizabeth Business Health Center and by other contracted medical services companies and are scheduled on an as-needed and/or when-required basis. These events are for designated employees with occupational exposure:
  - Pulmonary Function Test, Respirator Fit Testing/Training, and Audiometric Testing/Training;
  - Department of Transportation Random Drug and Alcohol Screening;
  - Department of Transportation Physical Certification;
  - Department of Transportation Reasonable Suspicion Drug and Alcohol Screening;
  - Other Medical Screening as required.
- The training schedule for the Sanitation District No.1 Emergency Response Team (SD1ERT) is subject to the schedule(s) of the Northern Kentucky Technical Rescue Team and the Northern Kentucky Hazardous Materials Response Team. Because 2013 training schedules for these organizations have not yet been released, the SD1ERT schedule will be announced on a later date.
- The following classes (and any other additional classes) are not listed. However, as much advance notice as possible will be given:
  - WINNs Grant Training – Gateway Community College
  - OSHA 10 hour Construction and General Industry Safety Standards for Designated Subject Matter Experts

## Calendar Color Legend

Red Text = SD1 General

Blue Text = SD1 General Make-Up

Green Text = ERT and other Specialized Training for Designated Employees based upon Job Hazard Analysis

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## *Safety Department Mission Statement*

*The Sanitation District Safety Department believes in an employee based, proactive safety program.*

*Our belief is that our safety initiative should be based on the following principles:  
Responsibility, Accountability, Involvement, and Employee Ownership at all levels.*

*Our goal is to provide the Sanitation District with technical support and services that are related to compliance at all levels: Safety, Health, and our Environmental Responsibilities.*

*We are responsible and accountable for the well being of our employees, our communities, and the equipment to which we work with. We promote a work environment that is safe and free from all known and recognized hazards.*

*We based our program on a management philosophy that our employees are our most valuable assets.*

*Our goal is to provide our employees the necessary leadership for compliance training, education, equipment, and administrative support with service.*

**All incidents and accidents are preventable**

# July 2012 (FY 2013)

## Heat Safety:

July 9<sup>th</sup> – July 13<sup>th</sup>

## Your Back - Lifting Mechanics

July 9<sup>th</sup> – July 13<sup>th</sup>

Make-up (both classes): July 25<sup>th</sup>

- **Heat Safety - Elements**
  - Hydration and the Human body
  - Prevention
  - Inside v/s Outside
  - Signs and Symptoms
  - Heat Index
  - Heat Injury
    - Sunburn
  - Heat Illness
    - Heat Cramps
    - Heat Exhaustion
    - Heat Stroke (or Sunstroke)
  - Heat hazards at SD1
  
- **Back Wellness - Elements**
  - Anatomy of the back
  - Mechanics of lifting
  - Plan ahead
  - Site Safety
  - Good and Bad technique
  - Deciding when NOT to lift
  - Multiple Lifters – Lifting as a team
  
- **Duration: 2.0 + 2.0 hours**
  
- **Employees required to attend:**
  - **Dry Creek WWTP – Department 1**
    - Operations
    - Maintenance
    - Small Plants
    - Industrial Monitoring
  - **Collection System – Department 2 (ALL GROUPS)**
  - **Administration – Department 3**
    - Facilities and Safety
  - **Engineering – Department 5**
    - Inspectors
    - Water Resources (designated employees)
  - **Field Technical Services – Department 7 (ALL GROUPS)**
  - **Eastern Regional WRF – Department 8 (ALL GROUPS)**
  - **Western Regional WRF – Department 9 (ALL GROUPS)**
  
- **Maximum Class Size: 30**

# July

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
1	2	3	4 (Independence Day)	5	6	7
8	9 Your back: Lifting Mechanics  Heat Safety	10 Your back: Lifting Mechanics  Heat Safety Large Animal Rescue NKTRT	11 Your back: Lifting Mechanics  Heat Safety	12 Your back: Lifting Mechanics  Heat Safety	13 Your back: Lifting Mechanics  Heat Safety	14 Large Animal Rescue NKTRT
15	16	17 Safety Committee Meeting	18	19	20 PH, Peroxides, & Oxidizers NKHM3	21 PH, Peroxides, & Oxidizers NKHM3
22	23	24	25 Your back: Lifting Mechanics  Heat Safety, MAKE UP	26	27	28
29	30	31				

# August 2012 (FY 2013)

## Methamphetamine (Meth) Labs: “One-Pot Meth Cookers”

August 6<sup>th</sup> – August 10<sup>th</sup>  
Make-up: August 29<sup>th</sup>

## Swift Water Awareness:

August 31<sup>st</sup>  
(No Make-up)

- **Meth Labs - Elements**
  - They are NOT laboratories
  - Understanding the Hazards
  - Recognizing suspicious packages and items
  - What to do with suspected materials/items
  - Where the hazard lies
  - Reporting
  - Immediate steps to take in case of exposure
  
- **Duration:** 2.0 hours
  
- **Required:** As needed
  
- **Employees to attend:**
  - **Dry Creek WWTP – Department 1**
    - **Operations**
    - **Maintenance**
    - **Small Plants**
    - **Industrial Monitoring**
  - **Collection System – Department 2 (ALL GROUPS)**
  - **Administration – Department 3**
    - **Facilities**
    - **Safety**
  - **Engineering – Department 5**
    - **Inspectors**
    - **Water Resources (designated employees)**
    - **Flow Monitoring**
  - **Field Technical Services – Department 7 (ALL GROUPS)**
  - **Eastern Regional WRF – Department 8 (ALL GROUPS)**
  - **Western Regional WRF – Department 9 (ALL GROUPS)**

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- **Swift Water - Elements**
  - Understanding the Hazards
  - Accident Prevention: Signs & Tags
  - Locations Found
  - Working Around
  - Rescue
  - Throw Ropes
  - Life Rings
  - Personal Flotation Devices
  - Personal Protective Equipment
  
- **Duration:** 4.0 hours
  
- **Required:** annually
  
- **Employees required to attend:**
  - **Administration – Department 3**
    - Facilities
  - **Engineering – Department 5**
    - Flow Monitoring
    - Water Resources (designated employees)
  - **SD1 Emergency Response Team**
  
- **Maximum Class Size:** 25

# August

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
			1	2	3	4
5	6 Methamphetamine (Meth) Drug Labs ONE-POT Meth Cookers	7 Methamphetamine (Meth) Drug Labs ONE-POT Meth Cookers	8 Methamphetamine (Meth) Drug Labs ONE-POT Meth Cookers	9 Methamphetamine (Meth) Drug Labs ONE-POT Meth Cookers	10 Methamphetamine (Meth) Drug Labs ONE-POT Meth Cookers	11
12	13	14	15	16	17	18
19	20	21 Safety Committee Meeting	22	23	24 RAMEN & FT-IR NKHM3	25 RAMEN & FT-IR NKHM3
26	27 32 Hour Trench Tech.NKTRT	28	29 Methamphetamine (Meth) Drug Labs ONE-POT Meth Cookers MAKE UP	30 32 Hour Trench Tech. NKTRT	31 Swift Water Awareness <i>Date to be verified</i>	

# September 2012 (FY 2013)

## Department of Transportation - Commercial Motor Vehicle (DOT - CMV) Safety:

September 10<sup>th</sup> – September 12<sup>th</sup>

Make-up: September 26<sup>th</sup>

### Department of Transportation Commercial Drivers License

- **Elements**
  - Driver Safety
  - Walk Around / Daily and Pre-Trip Inspections
  - Random Inspections
  - Reasonable Suspicion
  - Securing Loads
  - Personal Protective Equipment
  - Minor Repairs
  - Vehicle Housekeeping
  - Accident Prevention: Signs & Tags
  - Removal From Service - Lockout /Tag Out
  - Coaching The Experience Driver
  - Department of Transportation Commercial Drivers License Pre-trip inspection
  - Record Keeping - Commercial Motor Vehicles
- **Duration 4.0 hrs.**
  - 4.0 hr - Department of Transportation and Non-Department of Transportation Vehicles and Equipment
- **Required:** semi-annually
- **Employees required to attend:**
  - **ALL SD1 Commercial Motor Vehicle OPERATORS and LOADERS and IMMEDIATE SUPERVISORS of those employees**
  - **Dry Creek WWTP**
    - Operations (Designated Operators)
    - Maintenance (Designated Operators)
  - **Collection System**
    - Customer Service (Designated Operators)
    - Construction (Designated Operators)
  - **Field Technical Services – Department 7** (Designated Operators)
  - **Eastern Regional WRF – Department 8** (Designated Operators)
  - **Western Regional WRF – Department 9** (Designated Operators)
- **Maximum Class Size: 20**

# September

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3 (Labor Day)	4	5	6	7 FULL TEAM DRILL NKTRT	8
9	10 DOT - CMV Safety	11 DOT - CMV Safety	12 DOT - CMV Safety	13	14	15
16	17	18 Safety Committee Meeting	19	20	21 Chlorine & Sodium Hydroxide NKHM3	22 Chlorine & Sodium Hydroxide NKHM3
23	24	25	26 DOT - CMV Safety Make-Up	27	28	29
30						

# October 2012 (FY 2013)

## Fire Safety and Emergency Action Plan:

October 8<sup>th</sup> through October 12<sup>th</sup>

Make-up October 24<sup>th</sup> and October 26<sup>th</sup>

- **Elements**
  - Portable Fire Extinguishers
  - Personal Protective Equipment
  - Accident Prevention: Signs & Tags
  - Emergency action plan – Egress - Exit
  - Employee alarm systems
  - Fire detection systems
  - Emergency action and notification plan
  - National Incident Management System
  - Emergency communication
  - Fire prevention
  - Flammable and combustible storage
  
- **Duration:** 2 hours
  
- **Required:** annually
  
- **All SD1 employees required to attend**
  
- **Maximum Class Size: 40**

# October

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
	1	2	3	4	5	6
7	8 Fire Safety and Emergency Action Plan (EAP)	9 Fire Safety and Emergency Action Plan (EAP) Emergency Building Shoring NKTRT Large Animal Rescue NKTRT	10 Fire Safety and Emergency Action Plan (EAP)	11 Fire Safety and Emergency Action Plan (EAP)	12 Fire Safety and Emergency Action Plan (EAP)	13 Emergency Building Shoring NKTRT
14	15	16 Safety Committee Meeting	17	18	19	20
21	22	23	24 Fire Safety and Emergency Action Plan (EAP)	25	26 Fire Safety and Emergency Action Plan (EAP) Biological Sampling & Testing NKHM3	27 Biological Sampling & Testing NKHM3
28	29	30	31			

# November 2012 (FY 2013)

## Excavation Safety:

November 5<sup>th</sup> through November 7<sup>th</sup>

Make-up: November 14<sup>th</sup>

- **Elements**
  - Trench and Shoring
  - Personal Protective Equipment
  - Accident Prevention: Signs & Tags
  - Call before you dig
  - Underground lines – Color Coding
  - Overhead lines
  - Rescue Notification Awareness
  - Public Safety
  - Housekeeping
  - Slips / Trips / Falls
  - Ladder Safety
  - Contract Employer Responsibilities
  - Atmospheric monitoring
  - Traffic Control / Excavation Permit
  - Record Keeping
  - Hot Work Permit – Flammable / Spark Producing
  - Atmospheric Sampling – Confined Space
  - Cold Weather Training
- **Duration:** 6 hours
- **Required:** annually
- **Employees required to attend:**
  - **Collection System – Department 2**
    - Construction
  - **Engineering – Department 5**
    - Inspectors
    - Project Managers
  - **SD #1 Emergency Response Team (ERT)**
- **Maximum Class Size:** 20

# November

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
				1	2	3
4	5 Excavation Safety	6 Excavation Safety	7 Excavation Safety	8	9	10 Confined Space NKTRT
11	12	13 Safety Committee Meeting	14 Excavation Safety (make-up)	15	16 8 - Step Sampling Exercise, Review and Assessment NKHM3	17 8 - Step Sampling Exercise, Review and Assessment NKHM3
18	19	20	21	22 (Thanksgiving)	23 (Day After Thanksgiving)	24
25	26	27	28	29	30	

# December 2012 (FY 2013)

## Hazardous Waste Operations:

December 11<sup>th</sup> and December 13<sup>th</sup>

Make-up: December 19<sup>th</sup>

- **Elements**
  - Chemical Protective Clothing & Levels of Protection
  - Chemical Profiling (MSDS)
  - Air Monitoring (AMI) Overview
  - Spill Control and Containment (SPCC)
  - Emergency Response Guide (current edition)
  - NIOSH
  - CAMEO
- **Duration:** 4 hours
- **Required:** annually
- **Employees required to attend:**
  - **Dry Creek WWTP – Department 1**
    - Maintenance
    - Operations
    - Industrial Monitoring
    - Certified Pesticide Applicators
  - **Administration – Department 3**
    - Certified Pesticide Applicators
  - **Engineering – Department 5**
    - Water Resources (designated employees)
  - **Field Technical Services**
    - Certified Pesticide Applicators
  - **Optional:** SD1 Emergency Response Team Members
- **Maximum Class Size:** 20

# December

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3	4	5	6	7	8
9	10	11 <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Hazardous Waste Operations</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Hazwoper Refresher</div> <div style="border: 1px solid black; padding: 2px;">NKHM3</div>	12	13 <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Hazardous Waste Operations</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Hazwoper Refresher</div> <div style="border: 1px solid black; padding: 2px;">NKHM3</div>	14	15
16	17	18 <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Safety Committee Meeting</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Year End</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Mtg./Teambuilding</div> <div style="border: 1px solid black; padding: 2px;">NKTRT</div>	19 <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Hazardous Waste Operations (make-up)</div>	20	21	22
23	24 (Christmas Eve)	25 (Christmas Day)	26	27	28	29
30	31					

# January 2013

## First Aid/CPR/AED/Bloodborne Pathogens: Annual Refresher\*

January 14<sup>th</sup>\* through 18<sup>th</sup>

Make-up: January 29<sup>th</sup> through 31<sup>st</sup>

*\*Classes on January 14 and 15 are FULL 8hr DAYS*

## First Aid/CPR/AED/Bloodborne Pathogens

- **Elements**
  - Adult First Aid and CPR with AED
  - Bloodborne Pathogens
  - Personal Protective Equipment
  - Myclyn's Wound Sanitizer
- **Duration:** 4 hours\*
- **Required:** annually
- **Employees required to attend:**
  - Any employee whose job may be classified as one of the following:
    - Confined Space Entry Qualified
    - Electrician or Electrical Technician
    - Emergency Response Team Member
    - Emergency Action Plan (EAP) Designated First Responders (plant and office)

**Maximum class size:** 20

\* Classes on **January 14 and 15** are for employees who are not certified in First Aid/CPR or whose certifications are more than a year out of date. These classes are **FULL 8hr DAYS**

# January

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
		<b>1</b> (New Years Day - 2012)	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>6</b>	<b>7</b>	<b>8</b> Safety Committee Meeting	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>13</b>	<b>14</b> CPR/AED/BBP 6.0 hr. First Aid 2.0 hr.	<b>15</b> CPR/AED/BBP 6.0 hr. First Aid 2.0 hr.	<b>16</b> First Aid CPR/AED/BBP Refresher Only 4.0 hr.	<b>17</b> First Aid CPR/AED/BBP Refresher Only 4.0 hr.	<b>18</b> First Aid CPR/AED/BBP Refresher Only 4.0 hr.	<b>19</b>
<b>20</b>	<b>21</b> (MLK Jr. Day)	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<b>27</b>	<b>28</b>	<b>29</b> First Aid CPR/AED/BBP Make-UP Refresher Only 4.0 hr.	<b>30</b> First Aid CPR/AED/BBP Make-UP Refresher Only 4.0 hr.	<b>31</b> First Aid CPR/AED/BBP Make-UP Refresher Only 4.0 hr.		

# February 2013

## Traffic Control: Update – 1/2 Day February 11<sup>th</sup> through 15<sup>th</sup>

Make-up: February 26<sup>th</sup> and February 28<sup>th</sup>

### Traffic Control :

- **Elements**
  - Traffic control / Excavation Permit
  - Record Keeping
  - Flagging
  - Signaling
  - Hot Weather Training
  - Work Zone Setup
  - Signs
  - Accident Prevention: Signs & Tags
  - Changing Conditions
  - Short-term v/s Long-term
  - Speed Classification
  - Personal Protective Equipment (employees to bring equipment for audit)
- **Duration**
  - 4.0 hrs. for update class (odd numbered years)
- **Required:** Semi-annually
- **Employees required to attend:**

Any employee who is one of the following:

  - Flow Monitoring Technician
  - Emergency Response Team Member
- **Maximum Class Size: 20**
- **Employees required to attend:**
  - **Dry Creek WWTP – Department 1**
    - (designated employees)
  - **Collection System – Department 2 (ALL GROUPS)**
  - **Administration – Department 3**
    - Facilities (inmate supervisors)
    - Safety
  - **Engineering – Department 5**
    - Inspectors
    - Water Resources (designated employees)
    - Planning & Design (designated employees)
  - **Field Technical Services – Department 7 (ALL GROUPS)**

**ALSO: Emergency Response Team Members**

# February

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
					1	2
3	4	5	6	7	8	9
10	11 Traffic Control	12 Traffic Control	13 Traffic Control	14 Traffic Control	15 Traffic Control	16
17	18	19 Safety Committee Meeting	20	21	22	23
24	25	26 Traffic Control (Make-up)	27	28 Traffic Control (Make-up)		

# March 2013

**Lockout – Tagout:** March 11<sup>th</sup> through 15<sup>th</sup>

**Electrical Safety:** March 11, 13, 14

Make-up (Lockout - Tagout): March 26<sup>th</sup> and 28<sup>th</sup>

Make-up (Elec. Safety): March 26<sup>th</sup>

## **Lockout – Tagout**

- **Elements**
    - Lockout / Tagout Program
    - Housekeeping
    - Personal Protective Equipment
  - **Duration:** 1.0 hr.
  - **Required:** annually
  - **Employees required to attend:**
    - **All Employees maintaining qualification in Confined Space Entry**
    - **Dry Creek WWTP – Department 1**
      - Operations
      - Maintenance
      - Small Plants
    - **Collection System – Department 2**
    - **Administration – Department 3**
      - Safety
      - Facilities
    - **Engineering – Department 5**
      - Inspectors
      - Water Resources (designated employees)
    - **Field Technical Services – Department 7**
    - **Eastern Regional WRF – Department 8**
    - **Western Regional WRF – Department 9**
  - **Maximum Class Size: 30**
- 

## **Electrical Safety**

- **Elements**
  - Assured Grounding
  - Arc Flash NFPA 70E (overview)
  - Housekeeping
  - Personal Protective Equipment
  - Accident Prevention: Signs & Tags
  - Lockout / Tagout (overview)
- **Duration:** 3.0 hrs.
- **Required:** annually
- **Arc Flash Personal Protective Equipment: Attendees to bring arc flash PPE for Demonstration/audit purposes**
- **Employees required to attend:**

Any employee who is one of the following:

  - Electricians and Maintenance personnel. Also Operations personnel who completed electronics or electrical components training (WINNS grant training at Gateway Community College)
  - **Maximum Class Size: 30**

# March

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
					1	2
3	4	5	6	7	8	9
10	11 Lockout-Tagout Electrical Safety	12 Lockout-Tagout	13 Lockout-Tagout Electrical Safety	14 Lockout-Tagout Electrical Safety	15 Lockout-Tagout	16
17	18	19 Safety Committee Meeting	20	21	22	23
24	25	26 Lockout-Tagout (make-up) Electrical Safety (make-up)	27	28 Lockout-Tagout (make-up)	29	30
31						

# April 2013

**Hazard Communication (To be renamed “Globally Harmonized System”):** April 8<sup>th</sup> through April 12<sup>th</sup>

**Lab Safety:** April 8, 10, 11

Make-up (Hazard Communication): April 23<sup>rd</sup> and 25<sup>th</sup>

Make-up (Lab Safety): April 23<sup>rd</sup>

## **Hazard Communication (HAZCOM) or Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**

- **Elements**
  - Summary of Globally Harmonized System
  - Damming and Dykes
  - Safe Handling of Hazardous Chemicals
  - Accident prevention/housekeeping
  - Material Safety Data Sheets / Locations
  - Temporary Use Containers
  - Personal Protective Equipment
  - Accident Prevention: Signs & Tags
  - Housekeeping
  - Storage of Flammable and Combustible Liquids
  - Spill Prevention Control & Countermeasures & Storm Water Pollution Prevention Plan Kit Locations
  - Understanding National Fire Protection Association Hazard Recognition Labels
- **Duration:** 2.0 hrs.
- **Required:** annually
- **Employees required to attend:**
  - **Dry Creek WWTP – Department 1**
  - **Collection System – Department 2**
  - **Administration – Department 3**
    - Safety and Facilities
  - **Engineering – Department 5**
    - Flow Monitoring
    - Water Resources (designated employees)
    - Other members of Engineering selected by department manager
  - **Field Technical Services – Department 7**
  - **Eastern Regional WRF – Department 8**
  - **Western Regional WRF – Department 9**
- **Maximum Class Size:** 30

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## **Lab Safety**

- **Elements**
  - Safe Handling of Hazardous Chemicals
  - Accident prevention
  - Material Safety Data Sheets / Locations
  - Temporary Use Containers
  - Personal Protective Equipment
  - Accident Prevention: Signs & Tags
  - Housekeeping
  - Storage of Flammable and Combustible Liquids
  - Understanding National Fire Protection Association Hazard Recognition Labels
- **Duration:** 1.0 hr.
- **Required:** annually
- **Employees required to attend:**
  - **Dry Creek WWTP – Department 1 Lab / Industrial Monitoring**
  - **Engineering – Department 5** Water Resources (designated employees)
- **Maximum Class Size:** 20

# April

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
	1	2	3	4	5	6
7	8 Hazard Communication Lab Safety	9 Hazard Communication	10 Hazard Communication Lab Safety	11 Hazard Communication Lab Safety	12 Hazard Communication	13
14	15	16 Safety Committee Meeting	17	18	19	20
21	22	23 Hazard Communication (make-up) Lab Safety (make-up)	24	25 Hazard Communication (make-up)	26	27
28	29	30				

# May 2013

## Confined Space Entry and Rescue:

May 13<sup>th</sup> through May 17<sup>th</sup>

Make-up: May 29<sup>th</sup> and May 30<sup>th</sup>

- **Elements**
  - Confined space – permit required Program
  - Fall protection / fall prevention
  - Personal Protective Equipment
  - Accident Prevention: Signs & Tags
  - Lock-out / Tag-out
  - Hazard Communication
  - Communication
  - Ventilation
  - Open Surface Tanks
  - Personal Protection
  - Entry/Dispatch
  - Confined Space Entry Permit Form
  - Emergency Rescue Permit Form
  - Hot Work Permit Form
  - Compressed Gasses
  - Housekeeping
  - Traffic Control / Flagger
  - iTX atmospheric monitoring
  - Entry Equipment - Simulator
  - Rescue/SKED
  - Self Contained Breathing Apparatus /Supplied Air Respirator
  
- **Duration:** 8.0 hrs.
  
- **Required:** annually
  
- **Employees required to attend:**
  - **Dry Creek WWTP – Department 1**
    - Operations
    - Maintenance
    - Lab / Industrial Monitoring
  - **Collection System – Department 2**
  - **Administration – Department 3- Safety**
  - **Engineering**
    - Flow Monitoring
    - Inspectors
    - Water Resources (designated employees)
  - **Field Technical Services – Department 7**
  - **Eastern Regional WRF – Department 8**
  - **Western Regional WRF – Department 9**
  
- **Maximum Class Size:** 30

# May

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
			1	2	3	4
5	6	7	8	9	10	11
12	13 Confined Space Entry and Rescue	14 Confined Space Entry and Rescue	15 Confined Space Entry and Rescue	16 Confined Space Entry and Rescue	17 Confined Space Entry and Rescue	18
19	20	21 Safety Committee Meeting	22	23	24	25
26	27 (Memorial Day)	28	29 Confined Space Entry and Rescue (make-up)	30 Confined Space Entry and Rescue (make-up)	31	

# June 2013

## Office – General Safety Knowledge

### Workplace Violence: “Active Shooter”

June 10<sup>th</sup> through 14<sup>th</sup>  
Make-up: June 26<sup>th</sup>

- **Elements**
  - Accident Prevention: Signs & Tags
  - Surge Protectors/Power Strips
  - Personal Heaters
  - Ergonomics
  - Extension Cords
  - Storage
  - Housekeeping
  - Egress
  - Emergency Exits
  - Emergency Action Planning
  - Accident Prevention: Signs & Tags
  - Hazardous Conditions
  - Storage
  - Cords and Plugs
  
- **Duration:** 3.0 hrs.
  
- **Required:** semi-annually
  
- **All Employees required to attend**
  
- **Maximum Class Size: 40**

# June

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
						1
2	3	4	5	6	7	8
9	10 General Safety Knowledge / Office Workplace Violence: "Active Shooter"	11 General Safety Knowledge / Office Workplace Violence: "Active Shooter"	12 General Safety Knowledge / Office Workplace Violence: "Active Shooter"	13 General Safety Knowledge / Office Workplace Violence: "Active Shooter"	14 General Safety Knowledge / Office Workplace Violence: "Active Shooter"	15
16	17	18 Safety Committee Meeting	19	20	21	22
23	24	25	26 General Safety Knowledge / Office Workplace Violence: "Active Shooter" Make-Up	27	28	29
30						

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**APPENDIX J:**

***Grease Control Program and FOG Management Policy***

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## Grease Control Program: Phased Implementation Tasks

Category	Task	Status/Activity
<b>Grease Control Phase 1 Tasks / Completed January 2008 - January 2009</b>		
Conduct Self Assessment	SD1 will acquire a list of FSEs within the service area that are permitted by the Kentucky Health Department. This will aid in determining the magnitude of FSEs that have the potential to discharge FOG to the SSS. This information will also help establish mailing addresses and points of contact for the FSEs.	<b>Complete</b>
	Field crew personnel currently determine when collection system problems are caused by FOG during a trouble call. This process will be evaluated to determine if the causes of trouble calls are being classified accurately.	<b>Complete</b>
	Field crew personnel enter trouble call evaluations into GBA. The process of entering information into GBA will be evaluated to ensure data is accurate, accessible and manageable.	<b>Complete</b>
	SD1 currently uses a geographical information mapping system called Arc Viewer. One of the primary functions of Arc Viewer is to show the locations of sanitary sewer lines in the service area. This system will be evaluated to find possible mapping capabilities for areas with FOG problems within the collection system.	<b>Complete</b>
Review Rules and Regulation / Enforcement Response Plan	A review of the SD1's Rules and Regulations and ERP is being conducted. This review will identify any deficiencies in the legal authority to control the discharge of grease into the SSS. It will also identify deficiencies in the enforcement program. If found, the deficiencies will indicate revisions to be made in Phase 2 of this program.	<b>Complete</b>
Design Criteria	SD1 will review the effectiveness of other publicly owned treatment works (POTWs) Rules and Regulations and ERPs (i.e. Cincinnati MSD, Louisville MSD, and Knoxville Utilities Board). This will provide insight into what is working for utilities in the surrounding area.	<b>Complete</b>
	SD1 will seek the development of design criteria for grease reduction device standards by the Kentucky Division of Plumbing, Kentucky Health Department and Kentucky Environmental and Public Protection Cabinet.	<b>Complete</b>

## Grease Control Program: Phased Implementation Tasks

Category	Task	Status/Activity
<b>Grease Control Phase 1 Tasks (Continued) / Completed January 2008 - January 2009</b>		
FSE Education	Over the last year, SD1 has created and distributed BMP posters to be displayed in permitted FSEs and will continue to distribute such posters. The FSEs are required to display these posters in areas where there is potential for FOG to be discharged to the SSS.	<b>Complete</b>
	SD1 will create and send out BMP brochures to all FSEs. The brochure will focus on the harmful effects of FOG in sewer lines and proper grease handling techniques used to minimize the release of FOG into the collection system. These brochures can also be distributed during site visits.	<b>Complete</b>
	SD1 will begin researching a compliance assistance workshop for FSEs. An evaluation of other FOG workshops will be conducted to determine content and effectiveness. This workshop will provide FSEs with a comprehensive overview of the Grease Control Program. The workshop will be initiated when all specifics of the program have been established.	<b>Complete</b>
FSE Education	SD1 has met with members of the Kentucky Restaurant Association (KRA) and the Northern Kentucky Restaurant Association (NKRA) to open channels of communication with key stakeholders. SD1 will continue to work to educate these key stakeholders. Their participation and cooperation is valuable. We will encourage the KRA and NKRA to include grease control program information in their newsletters.	<b>Complete</b>
Public Education	Over the last year, SD1 has created and distributed door hangers to inform customers when there has been a blockage or obstruction due to FOG in their area. These informational pieces focus on the harmful effects of FOG in sewer lines and proper grease handling techniques used to minimize the release of FOG into the collection system. SD1 will continue to distribute door hangers and letters to customers in areas impacted by FOG related overflows.	<b>Complete</b>
	SD1 will create and send out additional bill inserts to all customers within the service area. The bill stuffers will spotlight the harmful effects of FOG in sewer lines and proper grease handling techniques used to minimize the release of FOG into the collection system.	<b>Complete</b>
	SD1 will research the "Trap the Grease Program." This program involves supplying residences with a container for grease rather than pouring it down the drain.	<b>Complete</b>

## Grease Control Program: Phased Implementation Tasks

Category	Task	Status/Activity
<b>Grease Control Phase 2 Tasks / Completed January 2009 - January 2010</b>		
Conduct Self Assessment	GBA will be modified and field crew personnel will be trained to ensure data is entered accurately and that the data is accessible and manageable.	<b>Complete</b>
	SD1 will create a list of collection system areas experiencing problems with FOG in the sanitary sewers. This list will be created using the information established in GBA in Phase 1.	<b>Complete</b>
	SD1 will create a list of FSEs that may be contributing to FOG problem areas. This list will be created using information provided from the Kentucky Health Department in Phase 1.	<b>Complete</b>
Revise Rules and Regulation / Enforcement Response Plan	If necessary, SD1 will begin drafting revisions to the District's Rules and Regulations and ERP to ensure proper legal authority and enforcement.	<b>Complete</b>
Design Criteria	SD1 will continue to coordinate with the Kentucky Division of Plumbing, Kentucky Health Department and Kentucky Environmental and Public Protection Cabinet on the development of design criteria for grease reduction device standards.	<b>Complete</b>
FSE Education	SD1 will continue developing the compliance assistance workshop for FSEs and will maintain the distribution of the BMP posters to permitted FSEs.	<b>Complete</b>
	SD1 will distribute letters and other informational pieces to residential customers in areas impacted by FOG related overflows. These pieces will be evaluated and updated as needed on a regular basis.	<b>Complete</b>
Develop Inspection Protocol	SD1 will begin developing an inspection protocol for plumbing plans, installation and final inspection. This will ensure the proper installation of appropriate grease control devices.	<b>Complete</b>
	Inspection frequency and inspection report forms will be developed to determine if the FSE is in compliance with the Grease Control Program.	<b>Complete</b>
Modify Food Service Discharge Permit	SD1 will revise the Food Service Discharge Permit to ensure the permit coincides with changes made to the Rules and Regulations and Emergency Response Plan. The permit will address grease control device management, operation and maintenance standards, onsite record keeping requirements, cleaning frequency, cleaning standards, additives and ultimate disposal.	<b>Complete</b>
	SD1 will evaluate and revise, if necessary, the Restraunt/Food Service Grease Questionnaire to ensure the proper information is supplied about grease handling procedures.	<b>Complete</b>

## Grease Control Program: Phased Implementation Tasks

Category	Task	Status/Activity
<b>Grease Control Phase 3 Tasks / To be completed January 2010 - January 2011</b>		
Revise Domestic Holding Tank Waste Hauler Manifest	SD1 will evaluate and revise, if necessary, the Domestic Holding Tank Waste Hauler Manifest to better monitor the method and disposal of grease.	<b>Complete</b>
Evaluate Staffing and Equipment Requirements	SD1 will evaluate staffing levels and employ additional personnel, if necessary, to ensure requirements of the FOG program are being met.	<b>Complete</b>
FSE Education	SD1 will continue developing the compliance assistance workshop for FSEs.	<b>Complete</b>
	SD1 will maintain the distribution of the BMP poster to permitted FSEs.	<b>On-going</b> - distributed during FSE inspections. Brochures and pamphlets are also distributed during monthly FSE compliance assistance workshops.
Approval for Rules and Regulations / Enforcement Response Plan	SD1 will read publicly the modifications to the Rules and Regulations on two separate occasions at SD1's board meetings. A public comment period will begin with the first reading. SD1 will then submit revisions to SD1's Board of Directors for approval, then to the Cabinet for approval.	<b>Complete</b>
Public Education	SD1 will expand the grease control section of its website. The expansion will contain additional information for the public, FSEs and sludge haulers. Documents and forms will be made available for viewing and printing.	<b>Complete</b>
	SD1 will distribute letters and other informational pieces to residential customers in areas impacted by FOG related overflows. These pieces will be evaluated and updated as needed on a regular basis.	<b>On-going</b> - distributed to residents in areas that experience overflows or in areas where inspection data reveal a grease problem.

## Grease Control Program: Phased Implementation Tasks

Category	Task	Status/Activity
<b>Grease Control Phase 4 Tasks / To be completed January 2011 - January 2012</b>		
Public Readings of Rules and Regulations/Enforcement Response Plan	SD1 will publicly read the modifications on two separate occasions at SD1 board meetings. The revisions will be published when Phase 4 is complete.	<b>Complete</b>
Evaluate Staffing and Equipment Needs	The Industrial Monitoring Department will be responsible for all the activities associated with the Grease Control Program, and will be provided with necessary equipment. If the workload becomes too great for the current staff, SD1 will employ and additional Industrial Monitoring Specialist to ensure requirements of the program are being met.	<b>Complete</b>
Performance Indicators	GBA will be used to determine the number of trouble calls due to grease, number of lines being PM's and the number of SSOs due to FOG.	<b>Complete</b>
	Linko FOG will be used to track permits, inspections, violations and correspondence on all permitted FSEs.	<b>Complete</b>
Permitting	All previously permitted FSEs will undergo a re-evaluation using the modifications to the Grease Control Program conducted in the previous phases.	<b>Complete</b>
	Any FSEs in new grease problem areas will be evaluated using the modifications in the previous phases.	<b>On-going</b> - any FSEs in new grease problem areas are evaluated using the modifications in the previous phase.
	All new FSEs will be evaluated using the modifications from the previous phases.	<b>On-going</b> - any new FSEs in will be evaluated using the modifications in the previous phase.
FSE/Public Education	SD1 will require all permitted FSEs to attend a compliance assistance workshop and will maintain the distribution of the BMP posters to permitted FSEs.	<b>On-going</b> - compliance workshop meetings are held on a monthly basis. FOG brochures and pamphlets are also distributed during monthly FSE compliance assistance workshops. BMP posters are provided during inspections.
	SD1 will distribute letters and other informational pieces to residential customers in areas impacted by FOG related overflows. These pieces will be evaluated and updated as needed on a regular basis.	<b>On-going</b> - letters will continue to go out to any residence that experiences a backup due to FOG or where an overflow has occurred due to a blockage of FOG.

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## **Fats, Oils & Grease (FOG) Management Policy**

### **Purpose:**

The purpose of this policy is to protect Sanitation District No. 1 (SD1) collection systems, pumping stations and treatment works from the discharge of excess fats, oil and grease (FOG) by ensuring that Food Service Establishments (FSE) are in compliance with the requirements of the SD1 Rules and Regulations, as well as commitments made by SD1 in the Capacity, Management, Operations and Maintenance (CMOM) Self-Assessment conducted under SD1 Consent Decree signed by SD1, the Environmental Protection Agency (EPA) Region 4 and the Kentucky Department of Environmental Protection (KDEP), in April 2007.

The accumulation of FOG in the collection system causes blockages which may lead to Sanitary Sewer Overflows (SSO). SSOs can lead to the degradation of water quality in the receiving waterbody, adversely impact SD1 operations and cause violations of the Clean Water Act (CWA) and/or the provisions contained in the Consent Decree. FOG blockages may also cause sewer back-ups into homes and businesses thereby causing property damage and the disruption of business activities.

### **Authority:**

The intent of this policy is to authorize SD1 staff to establish clear design standards and/or procedures and/or guidelines to regulate FSE operations, as well as the disposition of FOG wastes pumped from FSE Grease Control Equipment (GCE) during routine maintenance. The authority for this policy is contained in SD1 Rules and Regulations. Enforcement actions taken under this policy will be in accordance with SD1 Enforcement Response Plan (ERP).

### **Pretreatment of Wastewater**

FSEs shall install and maintain appropriately sized GCE in accordance with the provisions of this policy and its related design standards, guidelines and/or procedures. GCE shall be installed, operated, properly maintained and repaired at the sole expense of the FSE owner/operator.

### **Schedule for Compliance with the FOG Management Policy:**

As users discharging to the SD1 sewer system, FSEs shall comply with all requirements of the SD1 Rules and Regulations.

FSEs discharging to the SD1 collection system are subject to the FOG Management Policy and related design standards and/or procedures and/or guidelines, as well as the SD1 ERP.

New construction of FSEs shall be in full compliance with the policy before commencing operations. New construction of FSEs shall have separate sanitary (restroom) and kitchen process lines. The kitchen process lines, including mop sinks, dishwashers and kitchen floor drains, shall be plumbed to appropriately sized GCE.

FSEs undergoing significant remodeling shall be in full compliance with the policy before recommencing operations after the remodeling work is completed.

FSEs in existence prior to the effective date of this policy may be allowed to continue current operations without significant modifications until such time as:

1. Significant remodeling is performed at the FSE facility, and/or
2. The facility's existing GCE is deemed to be of substandard size and/or design, and/or
3. The FSE is shown to be the cause of a FOG blockage in the SD1 collection system.
4. Any other reason deemed by SD1 as appropriate for significant modifications.

Existing FSEs found to be in noncompliance with this policy will be subject to the provisions of the ERP and shall be required to take immediate action pursuant to this policy and/or related procedures and/or guidelines.

SD1 or their designees will make the determination of whether a FSE has caused or contributed to a blockage in the collection system, as well as what actions will be required of the FSE to return to compliance.

**FSEs Responsibilities:**

1. GCE design and construction plans shall be submitted, reviewed and approved by SD1 Plan Review Department.
2. GCE shall meet the minimum requirements for GCE contained in SD1 Design Criteria
3. Waste and/or wastewater removed from FSE GCE shall be disposed of at a properly permitted facility that is authorized to accept such waste/wastewater in accordance with applicable federal, state and local laws and regulations. Waste/wastewater removed from GCE shall not be discharged to a private or public sewer unless permitted to accept said waste/wastewater.
4. FSEs shall not discharge FOG in amounts that contribute to a blockage in the collection system.
5. FSEs shall provide facilities and institute procedures in accordance with the SD1 FOG Management Policy and/or procedures and/or guidelines as are reasonably necessary to prevent or minimize the potential for accidental discharge of FOG into the sewage collection system. This includes implementation of "Best Management Practices (BMP)" protocols.
6. All FOG Permitted FSEs in SD1 jurisdiction shall have a SD1 Certified Grease Waste Hauler complete a GCE certification annually.
7. "Additives" shall be prohibited for use as grease management and control except as described in SD1 Fats, Oils & Grease Management Guidelines.
8. FSE facilities that permanently close for business shall completely pump out and clean all GIs on the premises and shall fill the GI with water. Pumping/cleaning of the GI prevents odors and deterioration of the GI from the weak acid FOG wastewater. Filling the out of service GI with water provides weight for the GI not to shift position, and provides a barrier from exposure to further deterioration.

### **SD1 Responsibilities:**

1. SD1 staff will develop and maintain definitions, design criteria and/or procedures and/or guidelines that are consistent with this policy.
2. SD1 may issue FOG permits to FSEs to control FOG discharges to the SD1 sewer system, prevent obstruction and interference to SD1 collection system, pump stations and/or treatment plants, as well as prevent sanitary sewer overflows. SD1 may establish FSE FOG permit classifications, or issue general FOG permits to FSEs.
3. SD1 may require that the FSE install monitoring equipment and/or additional GCE deemed necessary for compliance with this policy, and/or related design standards, procedures and/or guidelines and/or the SD1 Rules and Regulations.
4. SD1 and/or their authorized representatives may conduct inspections of FSEs for GCE installation and maintenance, review of best management practices, and to gather information regarding FOG discharge impacts.
5. SD1 and/or their authorized representative, has the right to enter the FSE's premises to determine impacts to the SD1 sewer system.
6. SD1 and/or their authorized representative may conduct monitoring of the effluent from FSE GCE for the purpose of determining compliance with this policy and/or related procedures and/or guidelines and/or SD1 Rules and Regulations and/or to assess a surcharge to the FSE.
7. SD1 may charge inspection, monitoring, assessment, impact and permit fees to FSEs to obtain reimbursement for FOG program costs.
8. SD1 will administer a Certified Hauler program that includes training for those entities that pump, transport and dispose of FOG- waste/wastewater from FSEs.

### **FSE GCE Haulers Responsibilities:**

1. Haulers wishing to transport GCE waste to an approved SD1 facility must complete the Certified Hauler Program. These haulers shall:
  - Participate in certification classes conducted by SD1 in order to become a listed "Approved Hauler" by SD1.
  - At SD1's request, submit specific information regarding FSEs in a format specified by SD1.

# Sanitation District No. 1

## Fats, Oils & Grease (FOG) Management Guidelines

### **DEFINITIONS**

1. **Additives**: Include but are not limited to products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.
2. **Certified Waste Hauler**: Individuals or entities that have successfully completed the SD1 certification classes.
3. **Significant Remodeling**: Modifications made to an existing FSE sufficient to require issuance of a building permit or the temporary closure of the FSE for building renovation or as deemed needed by SD1.
4. **Fats, Oils, & Grease (FOG)**: Organic polar compounds derived from animal and/or plant sources. FOG may be referred to as “grease” or “greases” in this section.
5. **Food Service Establishment (FSE)**: Any establishment, business, facility or user engaged in preparing, serving or making food available for consumption. Single family residences are not a FSE. Under the discretion of SD1, FSEs will be classified as follows:

**Class 1**: Day Care Facilities, Deli, Ice Cream shops, Coffee Shops, Beverage Bars – engaged in the sale of cold-cut and microwaved sandwiches/subs with no frying or grilling on site, defined by North American Industry Classification System (NAICS) 722213. SD1 reserves the right to add or subtract categories of the NAICS from this class at its discretion.

**Class 2**: Limited-Service Restaurants - (i.e. Fast Food Facilities) as defined by NAICS 722211, Caterers as defined by NAICS 722320, Supermarkets and other Grocery (except Convenience) Stores that engage in the on-site preparation of food as defined by NAICS 445110 , both Convenience Stores and Gasoline Stations with Convenience Stores that engage in the on-site preparation of food as defined by NAICS 445120 and 447110, respectively, and Discount Department Stores that engage in the on-site preparation of food as defined by NAICS 452112. SD1 reserves the right to add or subtract categories of the NAICS from this class at its discretion.

**Class 3**: Full Service Restaurants - as defined by NAICS 722110. SD1 reserves the right to add or subtract categories of the NAICS from this class at its discretion.

**Class 4**: Buffet and Cafeteria Facilities - as defined by NAICS 72212. SD1 reserves the right to add or subtract categories of the NAICS from this class at its discretion.

**Class 5**: Institutions (i.e. Schools, Hospitals, Prisons, etc) - as defined by NAICS 722310. SD1 reserves the right to add or subtract categories of the NAICS from this class at its discretion.

6. **Exemption**: A release from the requirement to install GCE Exemptions are approved by SD1 based on responses to questions on the SD1 Request for Exemption form.

7. Alternative Design: A release from the requirement to install GCE meeting the Design Criteria of the FOG Management Policy with the substitution of GCE of an alternate design. Alternative Designs will be approved by SD1 based on responses to questions on the SD1 Request for Alternative Design Form.
8. Garbage Disposal: A kitchen appliance designed to grind food particles to a small enough size to dispose to a sink drain.
9. Grease (Brown): Fats, oils and grease that is discharged to the grease control equipment, or is from kitchen or food prep wastewater.
10. Grease (Yellow): Fats, oils and grease that has not been in contact or contaminated from other sources (water, wastewater, solid waste, etc) and can be recycled.
11. Grease Control Equipment (GCE): Devices for separating and retaining FSE wastewater FOG prior to entering the SD1 sewer system. The GCE is constructed to separate and trap or hold fats, oils and grease substances from entering the SD1 sewer system. GCE should only receive kitchen wastewater. Devices include grease interceptors, grease traps, or other devices approved by SD1.
12. Grease Interceptor (GI): GCE identified as a large multi-compartment tank, usually 1,000 gallon to 2,000 gallon capacity with proper inlet and outlet T's, and other necessary components, that provides FOG control for a FSE. No sanitary wastewater (black water) line should be connected to the grease interceptor. Grease interceptors will be located outside the FSE.
13. Grease Trap (GT): GCE identified as an "under the sink" trap, a small container with baffles, or a floor trap. For a FSE approved to install a grease trap, the minimum size requirement is the equivalent of a 25-gallon per minute/50 pound capacity trap. Grease traps shall have flow control restrictor and a vent pipe. No sanitary wastewater (black water) line shall be allowed to be connected to a "under the sink" or floor grease trap. A separate grease trap is required for each commercial dishwasher. The size of the trap is determined by the GPM discharge rate of the dishwasher as specified by the manufacturer. Select proper interceptor of equivalent or next higher rate from Table 8.3.2 of the Plumbing and Drainage Institute publication titled **Standard PDI-G 101 Testing and Rating Procedure for Grease Interceptors – Revised March 2010**.
14. Grease Recycle Container: A container used for the storage of yellow grease.
15. Multi-Unit Facility: A single building or facility with multiple separate but adjoining units, each with separate plumbing and possibly other utilities.
16. NAICS: North American Industry Classification System. The website is found at: (<http://www.census.gov/epcd/www/naics.html>)
17. Series (Grease Interceptors Installed in Series): Grease interceptor tanks are installed one after another in a row and are connected by plumbing pipe.
18. Single Service Kitchen: A FSE that does not prepare food onsite (heat and serve only) and which uses only disposable serviceware (utensils and dishes).

19. Tee or T (Influent & Effluent): A T-shaped pipe extending from the ground surface below grade into the grease interceptor to a depth allowing recovery (discharge) of the water layer located under the layer of FOG. Influent & effluent T's are recommended to be made of PVC – schedule 40 or equivalent material. Influent T's should extend 2/3 of the grease interceptor water depth, and effluent T's should extend to within 12" to 15" of the bottom of the interceptor tank to prevent short-circuiting.
20. User: Any person that contributes, causes, or permits the contribution or introduction of wastewater or pollutants into the SD1 sanitary or combined sewer system and / or stormwater into the Municipal Separate Storm Sewer System (MS4), whether intentional or unintentional, and whether direct or indirect.
21. Water (Black): Wastewater containing human waste, from sanitary fixtures such as toilets and urinals.
22. Water (Gray): Wastewater other than black water as defined in this section.
23. Sanitary Sewer Overflow (SSO): A condition whereby untreated sewage is released into the environment prior to reaching treatment facilities thereby escaping wastewater treatment.

## **REQUIREMENTS**

1. GCE shall be designed and constructed in accordance with the provisions of the FOG Management Policy, these guidelines and/or SD1's Design Manual.
  - A. Final GCE sizing determination will be made by FSE's engineer, architect or contractor based on criteria such as, but not limited to, flow rate, discharge rate, fixture ratings and wastewater retention time.
  - B. **Minimum** acceptable size of GCE for each FSE Classification will be as follows:
    - i. Class 1: Deli, Ice Cream shops, Beverage Bars, Coffee Shops, - 25 gallons per minute / 50 pound.
    - ii. Class 2: Limited-Service Restaurants / Caterers / Supermarkets, other Grocery Stores and Discount Department Stores with on-site food preparation – 1,000 gallon GI
    - iii. Class 3: Full Service Restaurants - 1,000 gallon GI
    - iv. Class 4: Buffet and Cafeteria Facilities - 1,500 gallon GI
    - v. Class 5: Institutions (Schools, Hospitals, Prisons, etc) - 2,000 gallon GI or two 1000 gallon GI installed in series.
  - C. SD1 will review GCE sizing information received from the FSE's engineer, architect or contractor. SD1 will make a decision to approve, or require additional GCE volume, based on the type of FSE, the number of fixture units, and additional calculations. Grease interceptor capacity should not exceed 2,000 gallons for each interceptor tank. In the event that the grease interceptor calculated capacity needs to exceed 2,000 gallons, the FSE shall install an additional interceptor of the appropriate size. If additional interceptors are required, they shall be installed in series.
  - D. Grease interceptors that are installed in series shall be installed in such a manner to ensure positive flow between the tanks at all times. Therefore, tanks shall be

installed so that the inlet invert of each successive tank shall be a minimum of 2 inches below the outlet invert of the preceding tank.

- E. Grease interceptors that are installed in series shall include adaptors, gaskets or flexible transition couplings of minimum of schedule 40 PVC pipe.
2. Property service connections shall be sized based on fixture units with a minimum size of a 6-inch connection to GCE
  3. New FSEs (class 2 – 5), as well as existing facilities (class 2 – 5) that are undergoing significant remodeling shall install and maintain at a minimum, an approved 1,000 gallon grease interceptor located outside the FSE building.
  4. New FSEs (class 1), as well as existing facilities (class 1) that are undergoing significant remodeling shall install and maintain, at a minimum, a GT whose size is rated at 25 gallons per minute / 50 pounds capacity.
  5. New construction of FSEs shall have separate sanitary (restroom) and kitchen process lines. The kitchen process lines shall be plumbed to appropriately sized GCE. Kitchen process lines and sanitary lines may combine prior to entering the public sewer; however the lines cannot be combined until after the GCE. Sanitary wastewater, or black water, cannot be connected to GCE.
  6. When an existing building and/or building's plumbing is being renovated and the facility is a FSE, internal plumbing shall be reconstructed to separate sanitary (restroom) flow from kitchen process flow. Sanitary flow and kitchen process discharges shall be approved separately by SD1 and shall discharge from the building separately. The kitchen process line(s) shall be plumbed to appropriately sized GCE. Kitchen process lines and sanitary lines may combine prior to entering the public sewer; however the lines cannot be combined until after the GCE.
  7. New multi-unit facility, or new "strip mall" facility, owners shall contact SD1 prior to conducting private plumbing work at the multi-unit facility site. Multi-unit facility owners, or their designated contractor, shall have plans for separate private wastewater lines for kitchen and sanitary wastewater for each "individual" unit. In addition, the plans shall identify "stub-out" locations to accommodate a minimum 1,000 gallon grease interceptor for each unit of the multi-unit facility. New multi-unit facility, or new "strip mall" facility owners shall consider suitable physical property space and sewer gradient that will be conducive to the installation of an exterior, in-ground GI when determining the building location.
  8. SD1 Plan Review Group will review plans for any FSE in classes 1 through 5 as part of the building permit acquisition process.
    - A. FSE owners or their designee shall submit 2 sets of FSE facility plans to:  
**SD1**  
**Plan Review Group**  
**1045 Eaton Dr**  
**Ft. Wright KY, 41017**  
for review and approval by SD1.

- B. Facility plans shall include the following sheets: a floor plan detailing kitchen prep equipment and showing how greasy waste lines discharge to GCE, plumbing (P1 & P2) sheets, and a GCE specification sheets.
  - C. Plumbing sheets shall include identification of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc...); the number and size of dishwashers, sinks, floor drains, and other plumbing fixtures; greasy waste bearing plumbing lines, the location of GCE, and specifications for GCE. The discharge from the following fixtures shall be plumbed to GCE: all sinks (3-compartment, vegetable prep, mop, etc), dishwashers, floor drains in food preparation and storage areas, garbage disposals, and other fixtures through which grease may be discharged such as woks and soup ladles.
  - D. SD1 Plan Review Group personnel will review the plumbing plans and GCE sizing; and approve, or make changes as necessary to aid in the protection of a FOG discharge from the FSE.
  - E. If the plans are approved by SD1, an Approval Letter will be issued to the FSE.
  - F. Personnel from SD1 Inspection Group will inspect the GCE. Call 859-578-7460 forty-eight (48) hours prior to installation to schedule the inspection. SD1 will not approve GCE that has not been inspected and approved by SD1.
  - G. If the installed GCE is approved by SD1, an Acceptance Letter will be issued to the FSE.
9. Single service kitchens with no onsite food preparation (heat and serve only), and which use only disposable service ware (utensils) may not be required to install GCE. The FSE owner or designee must complete and submit a Request for Exemption form in order to be considered for an exemption. However, if kitchen practices change in an exempted FSE, or if the exempted FSE is found to directly cause or contribute to a grease blockage or SSO in SD1's collection system, the exemption will become null and void. Call the Industrial Monitoring Department at 859-331-6674 or visit [www.SD1.org/fog](http://www.SD1.org/fog) to obtain a Request for Exemption form.
10. Substandard GCE - In the event an existing FSE's GCE is deemed by SD1 to be either undersized or substandard in design, the FSE owner(s) will be notified in writing by SD1 of the deficiencies and required improvements, and given a compliance deadline not to exceed six (6) months to comply.

#### 11. Prohibitions

- A. FSEs shall not contribute or cause to be contributed into the SD1 collection system the following:
  - i. Hot water running continuously through GCE;
  - ii. Discharge of concentrated alkaline or acidic solutions into GCE;
  - iii. Discharge of concentrated detergents into GCE.

#### 12. SD1 Certified Waste Hauler Program

- A. All GCE waste haulers wishing to transport GCE waste to an SD1 approved facility shall:
  - i. Attend annual hauler certification training sessions presented by SD1.

- ii. Agree to conduct GCE certifications in the manner presented by SD1 in training sessions by SD1 personnel.
- iii. Agree to provide information on GCE certifications to SD1 in a timely manner.
- iv. Agree to completely evacuate FOG from GCE when servicing such GCE at FSEs; unless prior written approval is granted by SD1. If the volume of the GCE is greater than the tanker capacity, the hauler agrees to provide additional tankers so that the GCE is fully evacuated within a 24-hour period.
- v. Agree to provide information relative to FOG removed at FSEs in format required by SD1.
- vi. Dispose of FOG waste at an SD1 approved facility that is authorized to receive such waste in accordance with applicable federal, state and local laws and regulations.
- vii. Perform GCE maintenance in accordance with these guidelines.

B. SD1 will:

- i. Provide certification training to the haulers wishing to participate in the program.
- ii. Provide a listing of all certified haulers to FSEs
- iii. Require minimum GCE maintenance frequencies of FSEs

C. Annual Requirement for Grease Interceptor or Grease Trap Certification (GCE)

- i. FSEs under SD1 jurisdiction must have their grease interceptor or grease trap inspected and certified annually. Certification of the interceptor or trap must be conducted by a SD1 Certified Grease Waste Hauler to verify that all necessary components of the grease interceptor or grease trap are properly installed and in proper working condition. If a grease interceptor or grease trap “passes” the certification requirement, then no further action is required. If a grease interceptor or grease trap “fails” the certification requirement, then the SD1 Industrial Monitoring Department will issue the FSE a Notice of Violation. (NOV).
- ii. Failure of GCE Certification:  
The FSE owner or authorized representative is responsible for submitting an NOV Response no later than the due date indicated in the original NOV. The NOV Response must address all matters detailed in the original NOV. Failure to submit the NOV Response by the indicated due date and/or failure to address all requirements stated in the original NOV may result in additional enforcement actions, up to and including, Administrative Fines and/or the termination of the FOG Wastewater Discharge Permit. NOV Responses must be submitted to:

SD1  
Industrial Monitoring Department  
2999 Amsterdam Rd  
Villa Hills KY, 41017

- iii. FSEs who service their own GCE shall maintain a Maintenance Log of the pumping/cleaning maintenance activities performed for all GCE on the premises. GCE Maintenance Log records shall include, at a minimum, the date of cleaning/maintenance, person conducting the cleaning/maintenance and specific volume of grease wastewater removed from the GCE.

- iv. GCE Maintenance Logs shall be available at the FSE premises so they can be provided to SD1 personnel or their representative. The FSE shall maintain GCE maintenance records onsite for two (2) years.
- v. Each GCE shall be fully evacuated (complete pumpout of GI contents) unless the volume is greater than the tank capacity of the pumper vehicle in which case the hauler shall arrange for additional transportation capacity so that the GCE is fully evacuated within a 24 hour period.
- vi. The return of gray water back into the GCE from which the waste was removed is prohibited, unless the Certified Waste Hauler has received prior written permission from SD1.
- vii. Waste removed from GCE shall be disposed of at an SD1 approved facility that is authorized to receive such waste in accordance with applicable federal, state and local laws and regulations. Pumped waste shall not be discharged to a private or public sewer unless as permitted above.

13. FSEs shall observe Best Management Practices (BMPs) for controlling the discharge of FOG from their facility.

#### 14. Grease Interceptor (GI) Cleaning/Maintenance Requirements

- A. Grease interceptors must be pumped-in-full when the total accumulations of surface FOG (including floating solids) and settled solids reaches twenty-five percent (25%) of the grease interceptor's overall liquid depth. This criterion is referred to as the "25 Percent Rule". At no time shall the cleaning frequency of the grease interceptor exceed 90 days unless approved by SD1. Some existing FSEs in Class 2 through 5 will need to consider a 30 day pumping frequency or a 60 day pumping frequency to meet the 25 Percent Rule requirement. SD1 requires that an SD1 Certified Grease Waste Hauler perform all GCE servicing for all FOG Permitted FSE's, unless GCE servicing is performed by an FSE employee.
- B. Partial pump of interceptor contents or on-site pump & treatment of GI contents will not be allowed without prior written SD1 approval to reintroduction of fats, oils and grease to the interceptor and pursuant to the Code Federal Regulation 40 CFR403.5(b)(8), which states "Specific prohibitions. In addition, the following pollutants shall not be introduced into a POTW: Any trucked or hauled pollutants, except at discharge points designated by the POTW".
- C. Special pumping frequency approval may be granted and/or required by SD1, on a case by case basis, for unusual circumstances.
- D. All FOG Permitted FSEs in the SD1 jurisdiction must have a SD1 Certified Grease Waste Hauler complete a grease interceptor certification annually. The grease interceptor certification must be signed by the FSE owner or authorized representative. If a GI passes the certification, no further action is required on the part of the FSE. If a GI fails a certification, the SD1 Industrial Monitoring Department will issue the FSE an NOV detailing follow-up actions and requirements.
  - i. Grease interceptor effluent-T shall be inspected during all routine cleaning and maintenance and the condition noted by the grease waste hauler's company or individual conducting the maintenance. Effluent-T's that are

loose, defective, or not attached must be repaired or replaced as soon as possible.

- E. SD1 shall monitor the method and location of grease removed from accepted GCE.

All grease removed from permitted FSE's must be disposed of in accordance with all federal, state and local regulations, as well as, the SD1 Waste Hauler Permit. SD1's Industrial Monitoring Department will review disposal locations on a case by case basis.

#### 15. Grease Trap (GT) Cleaning/Maintenance Requirements

- A. GTs shall be completely cleaned of fats, oils, and grease (FOG) and food solids at a minimum of every two (2) weeks, unless more or less cleaning frequency is authorized/required by SD1. If the FOG and food solids content of the grease trap is greater than 25% of the water depth capacity of the grease trap, then the grease trap shall be cleaned every week, or as frequently as needed to prevent 25% of capacity being occupied with FOG and food solids.

FSEs in the SD1 jurisdiction shall have a SD1 certified grease waste hauler complete a grease trap certification annually. The grease trap certification shall be signed by the FSE owner or authorized representative. If a GT passes the certification, no further action is required on the part of the FSE. If a GT fails a certification, the SD1 Industrial Monitoring Department will issue the FSE an NOV detailing follow-up actions and requirements.

- i. During all routine cleanings of the grease trap, the flow restrictor shall be checked to ensure it is attached and operational.
- B. Grease Trap waste shall be sealed or placed in a container to prevent leachate from leaking, and then disposed of properly.
- C. Grease Trap waste shall not be mixed with yellow grease in the grease recycle container.

#### 16. "Additives" are prohibited for use as grease management and control.

- A. If SD1 identifies an FSE that is using "additives" and is contributing FOG to the SD1 sewer system, or has caused any interference to the sewer system, the FSE shall immediately stop use of the "additive".
- B. At no time shall additives be used just prior to under the sink or floor grease traps.
- C. The use of additives is prohibited with the following exceptions:
  - i. If the product used can be proven to contain 100% bacteria, with no other additives. Approval of the use of the product must come from SD1, and the FSE must submit a full disclosure Material Safety Data Sheet and certified sample results from the manufacturer of the product.
- D. The use of approved additives shall in no way be considered as a substitution to the maintenance procedures required per this policy.

## 17. Right of Entry – Inspection and Monitoring

- A. SD1 shall have the right to enter the premises of FSEs to determine whether the FSE is complying with the requirements of this policy and/or SD1 Rules and Regulations. FSEs shall allow SD1 personnel, upon presentation of proper credentials, full access to all parts of the premises for the purpose of inspection, monitoring, and/or records examination. Unreasonable delays in allowing SD1 personnel access to the FSE premises shall be a violation of this policy and the SD1 Rules and Regulations.
- B. SD1 may require that the FSE install monitoring or additional pretreatment equipment deemed necessary for compliance with this policy and/or SD1 Rules and Regulations.

## 18. Enforcement Action

- A. Enforcement action or a Notice of Violation may be issued to an FSE for instances that include, but not limited to, failure to clean or pump grease control equipment, failure to maintain grease control equipment including inspection and installation of properly functioning effluent-T and baffles, failure to install grease control equipment, failure to control FOG discharge from the FSE, contributing to a sewer line blockage or obstruction, contributing to a Sanitary Sewer Release, failure to submit a Notice of Violation Response and use of additives in such quantities so that FOG is pushed downstream of the FSE. Enforcement actions will be based on the SD1 Enforcement Response Plan.

## **SD1 Design Specifications for Grease Control Equipment** **Grease Interceptor (GI) Design and Installation for FSE established after January 1, 2012:**

### Piping Design

1. Inlet, outlet and baffle piping shall have 2-way cleanout T's installed.
2. Inlet piping shall enter the receiving chamber 2 1/2" above the invert of the outlet piping.
3. On the inlet pipe, inside the receiving chamber, a sanitary T of the same size pipe in the vertical position with the top unplugged shall be provided as a turndown. To provide air circulation and to prevent "air lock", a pipe installed in the top T shall extend to a minimum of 6" clearance from the interceptor ceiling, but not less than the inlet pipe diameter. A pipe installed in the bottom of the T shall extend to a point of 2/3 the depth of the tank. . See illustration on page 9.
4. The outlet piping shall be no smaller than the inlet piping, but in no case smaller than 4" inner diameter (ID).
5. The outlet piping shall extend to 12" above the floor of the GI and shall be made of a non-collapsible material. The top of the outlet T pipe should be no less than 4" above the static water line. T's must be anchored securely at the bottom.

6. The outlet piping shall contain a T installed vertically with a pipe installed in the top of the T to extend to a minimum of 6" clearance from the interceptor ceiling, but not less than the pipe diameter, with the top open. See illustration on page 17.

### **Design Baffles**

1. The inlet compartment shall be 2/3 of the total liquid capacity with the outlet compartment at 1/3 liquid capacity of the GI.
2. The GI shall have a non-flexing (i.e. concrete, steel, etc.) baffle the full width of the interceptor, sealed to the walls and the floor, and extended from the floor to within 6" of the ceiling. The baffle shall have a sanitary T located on the receiving side of the baffle wall which shall extend through the baffle into the outlet compartment. The baffle wall piping shall be installed vertically with a pipe installed in the top of the T to extend to the height of the baffle wall. The baffle wall piping shall extend from the bottom of the T to 12" above the floor of the GI. The baffle wall piping shall be at least equal in diameter size to the inlet piping, but in no case less than 6" ID. The baffle wall shall be sealed to the T and the baffle wall piping secured to the baffle wall. All baffle wall piping shall be made of a non-collapsible material. See illustration on page 17.

### **Access Openings (Manholes)**

1. Access to GIs shall be provided by a minimum of one manhole per GI division (baffle chamber) and of 24" minimum dimensions terminating 1" above finished grade with cast iron frame and cover. If manhole access exists in a paved area, a slope of greater than or equal to 0.2 may be used to achieve the 1" terminating manhole access requirement. An 8" thick concrete pad extending a minimum of 12" beyond the outside dimension of the manhole frame shall be provided. One manhole shall be located above the inlet T hatch and the other manhole shall be located above the outlet T hatch, so as to provide a clear view of both the inlet and outlet T for inspection. 1000 gallon GI's that possess a manhole access opening over only the inlet and outlet must possess a 6" cleanout access located over the baffle wall. A minimum 24" of clear opening above each manhole access. GI's 1500 gallons and larger must possess a minimum of 3 manholes; one above the influent, one above the effluent and one above the baffle.
2. Access openings (manholes) shall be maintained to facilitate maintenance, cleaning, pumping, and inspections.
3. Access openings (manholes) shall be mechanically sealed and gas tight to contain odors and bacteria and to exclude vermin and ground water, in a manner that permits regular reuses.
4. Manhole covers shall be secure, watertight, sturdy and able to withstand vehicle traffic.

### **Leak Testing**

GIs shall comply with one of the following:

- 1. Water test** - Seal the interceptor, fill with water raised to a level that will submerge all inlet and outlet points of the manhole, and let stand for a minimum of 4 hour. There shall be no visible leakage. Prefabricated concrete gravity grease Interceptors shall not be rejected for damp spots due to condensation on the exterior surface.

**Note:** It is highly recommended that the water remain in the GI prior to initiation of usage. The GI will function better if it contains water upon initiation of usage.

**2. Air test** - Air test procedure shall follow STI F 921 and PEI RP 100 Section 3.

**Note:** The regulated air supply test pressure used for this test is not to be less than 3 psig (21 kPa) nor more than 5 psig (35 kPa). Use only calibrated diaphragm type air pressure gauges with a zero to 10 psig dial span. Set pressure relief valve in test air supply line at 4.5 psig.

Temporarily plug, cap or seal of all tank openings to hold pressure. Install air supply piping to appropriate tank penetration with air supply piping, over pressure relief device, air isolation valve and pressure gauge. Close air isolation valve to tank and turn on air supply. Slowly open air isolation valve to pressure primary tank. Pressure gauge should read minimum 3 psig to 5 psig maximum. Record the pressure reading. Close air isolation valve and disconnect air supply line to tank.

**Note:** A steady drop in pressure indicates there may be a leak in the primary tank.

Hold primary air test for 1 hour minimum. No leaks shall be allowed.

If the tank(s) fails to meet the testing described above, it shall be repeated with new samples. Test reports shall show total number of tanks tested, number passing, number failing, and reason for failure.

### **Location**

1. GIs shall be located so as to be readily accessible for cleaning, maintenance, and inspections. GIs shall be located close to the fixture(s) discharging the greasy wastestream(s).
2. GIs shall not be installed in “drive-thru” lanes or a parking area. GIs shall never be paved over.
3. GIs shall be installed at a minimum distance of 10’ from sinks and dishwashers to allow adequate cooling of wastewater. The influent to GIs shall not exceed 140 degrees Fahrenheit (140° F).

### **Size**

1. Without prior written approval, GI minimum size shall be 1,000 gallon capacity, and maximum size will be 2,000 gallon capacity. If additional capacity is required, the FSE shall install multiple GIs in series. SD1 retains the right to take all factors into consideration for determination of final GI sizing. Upon consideration of special conditions SD1 may approve the use of GIs smaller than 1,000 gallons with a corresponding increase in pumping frequency. SD1 will review special conditions on a case by case basis.
2. GIs installed in series shall be installed in such a manner to ensure positive flow between the GIs at all times. Therefore GIs shall be installed so that the inlet invert of each successive GI shall be a minimum of 2 inches below the outlet invert of the preceding GI.

3. GIs installed in series shall have adaptors or gaskets or flexible transition couplings used as piping connections between the GIs installed in series. The adaptors or gaskets or flexible transition couplings shall be constructed of a minimum of schedule 40 PVC.

### **Construction Material**

1. GIs shall be constructed of sound durable materials, not subject to excessive corrosion or decay, and shall be water and gas tight. Each GI shall be structurally designed to withstand any anticipated load to be placed on the GI (i.e. vehicular traffic in parking or driving areas). Concrete is the standard material approved by SD1, however, SD1 will consider other materials, such as fiberglass or plastic grease interceptors, if a professional engineer (PE) provides calculations and evidence that the device will meet SD1 requirements and not be a danger to the public, or environment.

**Note: Concrete materials and other grease interceptor materials shall meet the American National Standards Institute, Inc. (ANSI) and International Association of Plumbing and Mechanical Officials (IAPMO) standards.**

**ANSI and IAPMO Concrete Materials Requirements as per IAPMO/ANSI Z1001-2007 document are:**

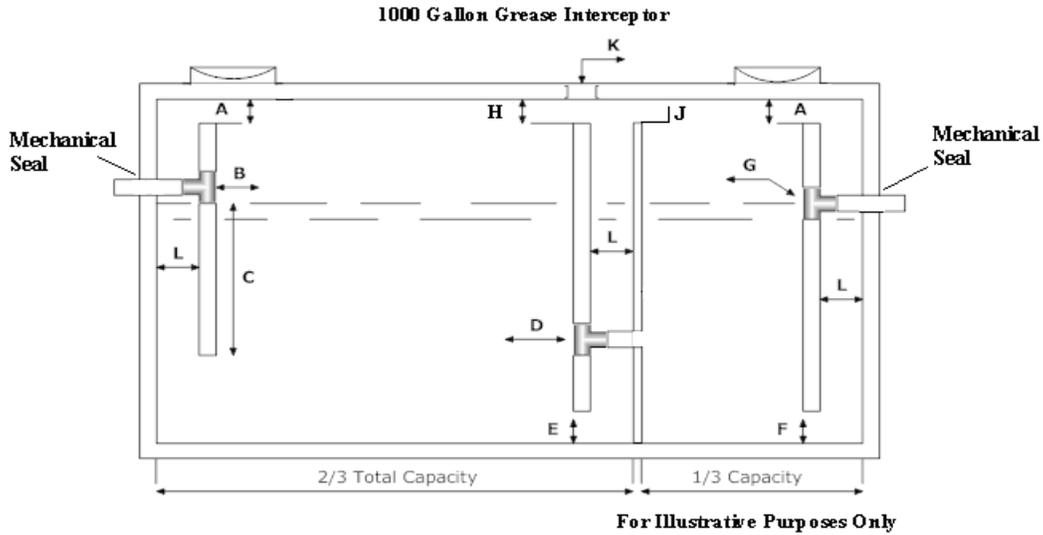
- **Concrete:** Material requirements shall comply with the “Materials and Manufacture” section of ASTM C 1613 and shall have a minimum compressive strength of 4000 psi (28 MPa) at 28 days of age and shall have a maximum water to cementitious ratio (w/c) of 0.45.
- **Sealants:** Flexible sealants employed in the manufacture or installation of GIs shall comply with ASTM C 990. Rigid (mortar) sealing or grout sealant of GI sections shall not be permitted.
- **Lifting:** Lifting devices, embedded or otherwise attached to the GI, shall comply with the requirements of ASTM C 890.
- **Synthetic fiber-reinforced concrete GIs:** Polypropylene or polyolefin fibers are only permitted as a secondary reinforcing material, at the manufacturer’s option, in precast concrete GIs. For the purposes of this standard, secondary reinforcing material is only used to resist temperature and shrinkage effects. Only fibers of Type III conforming to the requirements of ASTM C 1116 shall be accepted.
- **Steel fiber-reinforced concrete GIs:** Steel fibers are only permitted as a secondary reinforcing material, at the manufacturer’s option, in prefabricated GIs. For the purpose of this standard, secondary reinforcing material is only used to resist temperature and shrinkage effects. Steel fibers shall meet the requirements of ASTM A 820.
- **Fiberglass-reinforced polyester:** Fiberglass reinforced polyester prefabricated gravity GIs shall comply with the requirements for fiberglass – reinforced polyester septic tanks in paragraph 4.2 of IAPMO/ANSI Z1000.
- **Gaskets:** Gaskets shall be of a resilient material, resistant to attack by acids or alkalis that may be present in soils or sewage. The manufacturer shall specify the appropriate ASTM standards that the gasket material meets and the acids or alkalis that the material is resistant to.

- **Polyethylene:** Polyethylene prefabricated gravity GIs shall comply with the requirements for polyethylene septic tanks in paragraph 4.3 of IAPMO/ANSI Z1000.
- **Coated steel:** Interior steel GI walls shall be coated with material complying with the requirements of UL 58 and UL 1746 and manufactured per the requirements of the Steel Tank Institute (STI).

### **Marking and Identification**

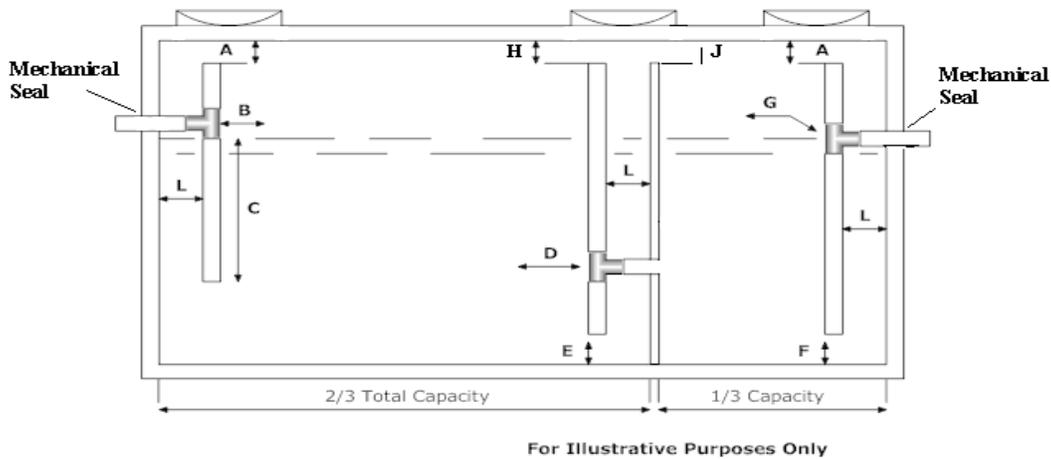
1. Prefabricated gravity GIs shall be permanently and legibly marked with the following:
  - Manufacturer's name or trademark, or both
  - Model number
  - Capacity
  - Month and year of manufacture
  - Load limits and maximum recommended depth of earth cover in feet; and Inlet and outlet.
2. The marking shall appear on a plate that has been permanently attached, molded, cast, or wet set onto the GI, located either on the left hand side of the inlet or on top of the GI near the inlet. Permanent markings shall be adequately protected from corrosion so as to remain permanent and readable over the life of the GI.
3. Each GI shall be accompanied by manufacturer's installation instructions.

## SD1 Design Specifications for 1000 Gallon Grease Interceptor



- A) Minimum 6", but not less than pipe diameter
- B) Inlet pipe invert to be 2 1/2" above liquid surface
- C) Inlet pipe to terminate 2/3 depth of water level
- D) Baffle T
- E) 12" from floor to end of baffle pipe
- F) 12" from floor to end of outlet pipe
- G) Outlet pipe no smaller than inlet pipe
- H) Top of baffle pipe terminates no lower than baffle height
- I) Inlet chamber is 2/3 total capacity; outlet chamber 1/3 total capacity
- J) 6" minimum distance from ceiling
- K) Minimum 6" cleanout

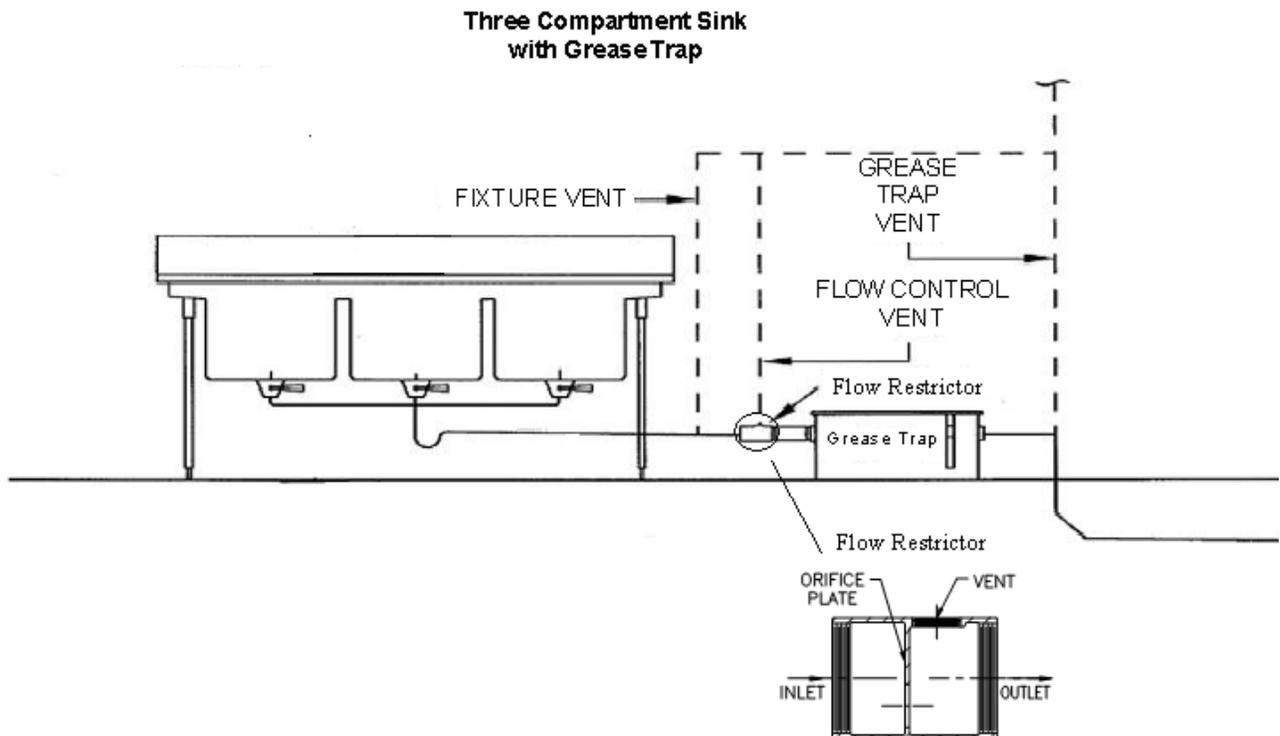
## SD1 Design Specifications for $\geq 1000$ Gallon Grease Interceptor $\geq 1500$ Gallon Grease Interceptor



- A) Minimum 6", but not less than pipe diameter
- B) Inlet pipe invert to be 2 1/2" above liquid surface
- C) Inlet pipe to terminate 2/3 depth of water level
- D) Baffle T
- E) 12" from floor to end of baffle pipe
- F) 12" from floor to end of outlet pipe
- G) Outlet pipe no smaller than inlet pipe
- H) Top of baffle pipe terminates no lower than baffle height
- I) Inlet chamber is 2/3 total capacity; outlet chamber 1/3 total capacity
- J) 6" minimum distance from ceiling

### Grease Trap (GT) Design and Installation:

1. GTs shall have the Kentucky State Plumbing Code certification. The **minimum** acceptable size is rated at 25 gallons per minute / 50 pounds capacity. All GTs shall be installed as per manufacturer's specifications, which include the flow restrictor and venting prior to the discharge entering the GT.
2. GTs shall have flow control restrictor and be vented.
3. A separate grease trap is required for each commercial dishwasher. The size of the trap is determined by the GPM discharge rate of the dishwasher as specified by the manufacturer. Select proper interceptor of equivalent or next higher rate from Table 8.3.2 of the Plumbing and Drainage Institute publication titled **Standard PDI-G 101 Testing and Rating Procedure for Grease Interceptors – Revised March 2010.**
4. Any floor GT must be an approved "floor" trap that is able to be installed below the floor level. Many standard "under-the-sink" units are not made of proper materials that allow an in-floor installation. Unapproved floor trap units will rust and leak within a few months of operation.



**APPENDIX K:**

***FY 2013 Violations Report for Food Service Discharge Permits***

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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

Filter Criteria:  
 All Permits  
 Non Comp Date IS Greater than 7/1/2012 AND  
 Non Comp Date IS Less than 6/30/2013  
 NC Date: Jan 1 1970 - Dec 11 2023

Permit: **FOG-000047**      **Papa John's**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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During a recent annual inspection on 11-7-12 the employees on site could not produce the Food Service Discharge Permit (Permit) required grease trap (GT) cleaning logs/manifests from June 2012 to present. Therefore, it is unknown if the GT cleanings have exceeded the permit required frequency of 30 days.

The Permit requires current GT cleaning log/manifests of all cleanings over the previous 2 years must be kept on site and in the permit required folder. Based on the information received, from the employee, the GT is being serviced internally by employees.

W	20-Nov-12	Written Notice of Violation (NOV)	\$0.00
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Permit: **FOG-000503**      **Dunkers**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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Proper size GT/GI was not installed prior to opening.

CS	01-Aug-12	Compliance Schedule	\$0.00
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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

Filter Criteria:  
 All Permits  
 Non Comp Date IS Greater than 7/1/2012 AND  
 Non Comp Date IS Less than 6/30/2013  
 NC Date: Jan 1 1970 - Dec 11 2023

Permit: **FOG-000540**      **Nick & Tony's Double Deckers**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Proper size GT/GI was not installed prior to opening	NC-E	10/01/12	02/07/13				
				CS	01-Oct-12	Compliance Schedule	\$0.00
The Compliance Schedule due date of January 1, 2013 was missed.	NC-E	01/02/13	02/07/13				
<p>The Compliance Schedule issued to Nick &amp; Tony's Double Deckers on October 1, 2012 required the installation of a properly sized grease trap and submit the proper paperwork, early enough in advance, so it could be approved before the grease trap was installed.</p> <p>During a recent visit, on January 8, 2013, it was found that the January 1, 2013 due date for installing the properly sized grease trap was not met, nor was the proper paperwork or plumbing plans submitted.</p> <p>To date nothing has been done to satisfy the Compliance Schedule requirements.</p>							
				W	10-Jan-13	Written Notice of Violation (NOV)	\$0.00

Permit: **FOG-000571**      **Whack Burger**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

Filter Criteria:  
 All Permits  
 Non Comp Date IS Greater than 7/1/2012 AND  
 Non Comp Date IS Less than 6/30/2013  
 NC Date: Jan 1 1970 - Dec 11 2023

Permit: **FOG-000571**      **Whack Burger**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Proper size GT/GI was not installed prior to opening	NC-E	10/10/12	06/01/13				
				CS	10-Oct-12	Compliance Schedule	\$0.00
The Compliance Schedule due date of February 1, 2013 was missed.	NC-E	02/02/13	06/01/13				
<p>The Compliance Schedule issued to Whack Burger on October 10, 2012 required the installation of a properly sized grease trap and to submit the proper paperwork, early enough in advance, so it could be approved before the grease trap was installed.</p> <p>During a recent visit, on February 7, 2013, it was found that the February 1, 2013 due date for installing the properly sized grease trap was not met, nor was the proper paperwork or plumbing plans submitted.</p> <p>To date nothing has been done to satisfy the Compliance Schedule requirements.</p>							
				W	12-Feb-13	Written Notice of Violation (NOV)	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

Filter Criteria:  
 All Permits  
 Non Comp Date IS Greater than 7/1/2012 AND  
 Non Comp Date IS Less than 6/30/2013  
 NC Date: Jan 1 1970 - Dec 11 2023

Permit: **FOG-000571**      **Whack Burger**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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In a meeting on March 27, 2013 a new Compliance Schedule due date of May 1, 2013 was agreed upon for having the proper sized grease control equipment installed. An email was sent to all parties stating the new, agreed upon, Compliance Schedule due date (see attached email).

During a visit, on May 2, 2013, it was found that the May 1, 2013 Compliance Schedule due date for installing the properly sized grease control equipment was not met.

To date nothing has been done to satisfy the Compliance Schedule requirements.

WF	03-May-13	Written Notice of Violation (NOV) and fine.	\$100.00
CS	10-Oct-12	Compliance Schedule	\$0.00

Permit: **FOG-000622**      **The Elusive Cow Café**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
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Proper size GT/GI was not installed prior to opening

CS	01-Dec-12	Compliance Schedule	\$0.00
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Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

Filter Criteria:  
 All Permits  
 Non Comp Date IS Greater than 7/1/2012 AND  
 Non Comp Date IS Less than 6/30/2013  
 NC Date: Jan 1 1970 - Dec 11 2023

Permit: **FOG-000758**      **Mr. Herb's**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Installation of the proper GCE was not completed before opening. A compliance schedule for installing the proper GCE will be issued.	NC-E	04/01/13	09/25/13				
				CS	01-Apr-13	Compliance Schedule	\$0.00

Permit: **FOG-000865**      **US Diner**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Installation of the proper GCE was not completed before opening. A compliance schedule for installing the proper GCE will be issued.	NC-E	05/01/13	07/23/13				
				CS	01-May-13	Compliance Schedule	\$0.00

Permit: **FOG-000873**      **Rt. 17 IGA Express**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Installation of the proper GCE was not completed before opening. A compliance schedule for installing the proper GCE will be issued.	NC-E	05/01/13	08/01/13				
				CS	01-May-13	Compliance Schedule	\$0.00

Sanitation District # 1  
 Industrial Pretreatment Program  
 Violations Summary Report

**Filter Criteria:**  
 All Permits  
 Non Comp Date IS Greater than 7/1/2012 AND  
 Non Comp Date IS Less than 6/30/2013  
 NC Date: Jan 1 1970 - Dec 11 2023

Permit: **FOG-000879**      **Europa Bistro**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Installation of the proper GCE was not completed before opening. A compliance schedule for installing the proper GCE will be issued.	NC-E	05/01/13	09/25/13				
				CS	01-May-13	Compliance Schedule	\$0.00

Permit: **FOG-000881**      **Buona Vita Pizzeria**

Violation Description	Violation Type	Date of NC	Date in Compliance	Enforcement Type	Date of Enforcement	Enforcement	Penalty
Installation of the proper GCE was not completed before opening. A compliance schedule for installing the proper GCE will be issued.	NC-E	06/01/13	10/01/13				
				CS	01-Jun-13	Compliance Schedule	\$0.00

## **APPENDIX L:**

### ***Pump Station Backup Power Updates***

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## Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 1 Projects (4 total projects)</b>						
Alex Licking	East	Permanent Generator	n/a	2008	2008	Complete
American Sign	West	Permanent Generator	n/a	2008	2008	Complete
Riley Road	East	Permanent Generator	n/a	2009	2009	Complete
Sunset	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2010	2010	Complete
CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 2 Projects (21 total projects)</b>						
Kahns	East	PS Elimination	n/a	2007	2007	Complete
Meadow Hill	Central	PS Elimination Study	PS Elimination	Study - 2008 2012 - 2015	2008 2010	Complete
Riley Road No. 1	East	PS Elimination	n/a	2009	2009	Complete
Riley Road No. 2						
Riverwatch PS	North	PS Elimination Study	PS Elimination	Study - 2008 2012 - 2015	2008 2008	Complete Complete
South Park Industrial	North	PS Elimination Study	Backup Dry Prime Pump with a Diesel	Study - 2008 2012 - 2015	2008 2010	Complete Complete
Wedgewood Dr	Central	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Willow Bend No. 2	West	PS Elimination Study	PS Elimination	Study - 2008 2013	2008 2013	Complete Complete
Army Reserve	East	PS Elimination Study	Electrical hook up for portable generator	Study - 2008 2013	2008 n/a	Complete In Progress
Eagles Landing	West	PS Elimination Study	Electrical hook up for portable generator	Study - 2008 2013	2008 n/a	Complete In Progress
Evergreen	Central	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Lamphill	East	PS Elimination Study	Electrical hook up for portable generator	Study - 2008 2011	2008 2011	Complete Complete
Mill House Crossing	Central	PS Elimination Study	Backup Dry Prime Pump with a Diesel	Study - 2008 2012	2008 2012	Complete Complete
Ridgefield	North	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
War Admiral	West	PS Elimination Study	PS Elimination	Study - 2008 2012 - 2015	2008 2011	Complete Complete
Blackstone	West	PS Elimination Study	Evaluating Solutions	Study - 2008 2015	2008 n/a	Complete Evaluating Solutions
Dublin Green No. 1	West	PS Elimination Study	PS Elimination	Study - 2008 2015	2008 2012	Complete Complete
Fowler Creek	West	PS Elimination	These stations will be eliminated after the Western Regional collection system is operational.	2013	2011	Complete
Gammon Calmet	West	PS Elimination		2013	2012	Complete
Gunpowder	West	PS Elimination		2013	2012	Complete
Union	West	PS Elimination		2013	2012	Complete

## Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 3 Projects (24 total projects)</b>						
Airport Exchange Ind Park	North	Permanent Generator	n/a	2009	2009	Complete
Barrs Branch	East	Permanent Generator	Portable Generator	2009	2009	Complete
Cedar Point	East	Permanent Generator	n/a	2009	2009	Complete
Bullitsville	North	Permanent Generator	n/a	2008	2008	Complete
Catalpa	Central	Permanent Generator	n/a	2009	2009	Complete
Centerplex	East	Permanent Generator	n/a	2008	2008	Complete
Hempsteade	West	Permanent Generator	n/a	2009	2009	Complete
Highland Heights	East	Portable Generator	n/a	2009	2009	Complete
Dublin Green No. 2	West	Permanent Generator	n/a	2009	2009	Complete
Brookwood	East	Permanent Generator	n/a	2009	2009	Complete
Ky Aire	West	Permanent Generator	n/a	2008	2007	Complete
Levi	West	Permanent Generator	n/a	2008	2007	Complete
Maple Ave	Central	Permanent Generator	n/a	2009	2009	Complete
Sand Run	North	Permanent Generator	n/a	2008	2008	Complete
Saturn	West	Permanent Generator	n/a	2009	2009	Complete
Second Street	Central	Permanent Generator	n/a	2009	2009	Complete
Skyport	North	Permanent Generator	n/a	2008	2008	Complete
South Hampton	West	Permanent Generator	n/a	2008	2007	Complete
Thornwilde	North	Permanent Generator	n/a	2008	2008	Complete
Bunning Lane	East	PS Elimination Study	Evaluating Solutions	2015	n/a	Evaluating Solutions
Kees	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2011	2011	Complete
Overlook	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Riverview Farms	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Stillwater	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions

## Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 4 Projects (50 total projects)</b>						
Banklick	Central	Permanent Generator	n/a	2009-2014	2009	Complete
Cedar	Central	Permanent Generator	n/a	2009-2014	2009	Complete
Fowler Ridge	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Lassing Green	West	Permanent Generator	n/a	2009-2014	2009	Complete
Leathers Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Marshall Rd	Central	Permanent Generator	n/a	2009-2014	2010	Complete
Mineola Pike	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Newport Steel Mill	East	Permanent Generator	n/a	2009-2014	2009	Complete
Paul Rd	East	Permanent Generator	Portable Generator	2009-2014	2010	Complete
Rosewood Lane	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2010	Complete
Shadow Lake	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2009	Complete
Wolf Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2009	Complete
Air Park West	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Arbortech	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Arborwood	North	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Brandtly Ridge	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Brentwood	North	Permanent Generator	Electrical hook up for portable generator	2015	n/a	In Progress
Brushup Lane	West	Permanent Generator	PS Elimination	2012	2012	Complete
Carlisle Ave	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Cinnamon Ridge	West	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Cold Spring Crossing	East	Permanent Generator	Permanent Generator	2015	n/a	In Progress
Cold Spring Plaza	East	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Darma Ct	East	Permanent Generator	Electrical hook up for portable generator	2013	n/a	In Progress
Deer Creek No. 1	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Deer Creek No. 2	North	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Eighth Street	Central	Connect to Grid Power	Evaluating Solutions	2015	n/a	Evaluating Solutions
Gerrard Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Golf Course	Central	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Hampton Ridge	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Harrison Harbor	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete

## Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 4 Projects (continued)</b>						
Harvest Hill	Central	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
ICH	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
IDI	North	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Independence Station Rd	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2009-2014	2011	Complete
Jefferson Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Jericho Rd	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Jonathan	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Litton	North	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Ohio Ave	East	Permanent Generator	Portable Generator	2009-2014	2011	Complete
Orchard Estates	West	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Parkside No. 2	East	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Patton Street	Central	Dual Utility Power Feed	Evaluating Solutions	2015	n/a	Evaluating Solutions
Ria Vista	North	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Silver Grove	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
St Annes	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Sycamore	West	Permanent Generator	PS Elimination	2015	2012	Complete
Taylor Mill Rd	Central	Permanent Generator	Electrical hook up for portable generator	2011	2011	Complete
Wilder	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Wyndemere	North	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete
Youell Rd	West	Permanent Generator	Electrical hook up for portable generator	2012	2012	Complete

## Pump Station Backup Power Plan

CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 5 Projects (6 total projects)</b>						
Keavy	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2010-2015	2010	Complete
Meadow Lane	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2010-2015	2009	Complete
Cardinal Cove	North	Permanent Generator	Permanent Generator	2015	2013	Complete
Crestview	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
Ripple Creek	East	PS Elimination Study	PS Elimination	2010-2015	2010	Complete
Winters Lane No. 2	East	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions
CIP Title	Basin	Original Proposed Solution	Updated Proposed Solution	Scheduled Completion Date	Actual Completion Date	Status as of October 2013
<b>Category 6 Projects (5 total projects)</b>						
Enzweiler	East	Permanent Generator	n/a	2012-2015	2009	Complete
Mafred	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012-2015	2009	Complete
Ridgeway	Central	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012-2015	2009	Complete
Richwood	West	Permanent Generator	Backup Dry Prime Pump with a Diesel	2012	2012	Complete
Twin Lakes	Central	Permanent Generator	Evaluating Solutions	2015	n/a	Evaluating Solutions

Progress Summary	Number
2007 Complete Projects	4
2008 Complete Projects	8
2009 Complete Projects	24
2010 Complete Projects	11
2011 Complete Projects	16
2012 Complete Projects	18
2013 Complete Projects	2
<b>Total Complete</b>	<b>83</b>
2013 Active Projects	5
<b>Total Project Activity</b>	<b>88</b>