



Sewer Liability Resource Guide



MAINE MUNICIPAL ASSOCIATION
RISK MANAGEMENT SERVICES

Table of Contents

Section 1 - Introduction

Section 2 - Maintenance & Documentation

- *Sewer Liability Information*
- *Exhibit 2.1 - Sewer System Evaluation Form*
- *Exhibit 2.2 - Manhole Inspection Form #1*
- *Exhibit 2.3 - Manhole Inspection Form #2*
- *Exhibit 2.4 - Line Inspection Form*
- *Exhibit 2.5 - Pump Station Inspection Form*

Section 3 - Operational Assessment

- *Exhibit 3.1 - CMOM (Capacity, Management, Operations & Maintenance)*
- *Exhibit 3.2 - Asset Management Form*

Section 4 - Customer Relations

- *Exhibit 4.1 - Customer Relations: Sewer Back-up Procedures*
- *Exhibit 4.2 - Reference Guides*
- *Exhibit 4.3 - Incident Report Form*
- *Exhibit 4.4 - Understanding Sewer Backups – Customer Information*
- *Exhibit 4.5 - FOG (Fats, Oils, Grease)*
- *Exhibit 4.6 - What Not to Flush*
- *Exhibit 4.7 - Not a Trash Can*
- *Exhibit 4.8 - Newsletter Samples*

Section 5 - Resources

- *Maine Law Regarding Line Maintenance*
- *Environmental Protection Agency (EPA) Links & Resources*
- *State of Maine Department of Environmental Protection (DEP) Water Quality Manager Resources*
- *New England Interstate Water Pollution Control Commission*
- *Other Resources*



Sewer Liability Resources Guide

Introduction

What this Guide is:

The Sewer Liability Resource Guide is intended to provide resources to members that operate sewerage collection and/or wastewater processing systems. These resources are intended to help you maintain your system and prevent situations that could lead to sewerage backups and liability claims. The resources are intended as a guide. You are free to use all or some of the information contained in the guide, or use it to assist you in developing your own procedures.

Why this Guide is important:

Having sewerage back up into a private business or residence because of failure to properly maintain the system generates bad publicity that can severely damage relations with your customers, your community and with your Board. In addition, the Maine Tort Claims Act does not provide any immunity or dollar cap for claims made for damages caused to others by failure to maintain a sewer system. This means you can be sued, and your liability is unlimited.

What this Guide can help you achieve:

The resource guide can help you set up a structured asset monitoring, maintenance and documentation program, or help you supplement and improve your existing program. Also, a documented and structured maintenance guide can help you save money by helping you systematically address small problems before they develop into larger and more costly issues. This guide also contains helpful information on what to do in the event of a sewer backup, suggestions on customer relations and additional resources.

Who should utilize this Guide:

Employees or contractors most familiar with your system should utilize the forms and resources in the guide in the way that is the most effective for you.

Feedback:

We want to hear from you! Let us know if the information in this guide is helpful, or if any additions or changes should be made to it. Feel free to contact 1-800-590-5583 and ask to speak to a member of the Underwriting Staff, or email RMSUnderwriting@memun.org.

We would like to thank Brunswick Sewer District, Mechanic Falls Sanitary District, Veazie Sewer District and York Sewer District for their assistance with this Resource Guide.

Disclaimer: This packet is intended for general informational purposes only. It is not meant, nor should it be relied upon, as legal advice in any particular situation. Links to documents herein are provided as examples for informational purposes only. The information herein is not a substitute for consultation with legal counsel and legal review or other specific guidance on the subject.



Section 2 – Maintenance & Documentation

Section 2 – Maintenance & Documentation is designed to offer assistance with the maintenance and documentation of your sewer system. Identifying problem areas and cleaning more frequently along with keeping a written schedule or plan of these inspections and cleanings may prevent sewer backups and identify future problems. If a backup occurs, written documentation will help in determining if reasonable maintenance has been done.

Sewer Liability Information section provides critical information on understanding that a sewerage back up due to the failure to properly maintain and document a sewer system may create costly claims for your District. In addition, the Maine Tort Claims Act does not provide any immunity or dollar cap for damages caused to others by failure to maintain a sewer system. This means you can be sued, and your liability is unlimited.

Exhibit 2.1: Sewer System Evaluation Form is a tool to assist you in the documentation:

- Infrastructure identification
- Inspection procedures
- Cleaning methodology
- Identification of problem/critical lines
- Manhole Inspection procedures
- Lift-Station Inspections
- Sewer Use Ordinance
- Emergency Planning
- Employee training
- Contractor consideration
- Scheduled system maintenance

Sample Inspection Forms document inspections, maintenance and identification of problem areas.

- Exhibit 2.2 - Manhole Inspection Form #1
- Exhibit 2.3 - Manhole Inspection Form #2
- Exhibit 2.4 - Line Inspection Form
- Exhibit 2.5 - Pump Station Inspection Form





Sewer Statute

Title 30-A §3403, Proper maintenance of drains

After a public drain has been constructed and any person has paid for connecting with it, the municipality shall maintain and keep it in repair to afford sufficient and suitable flow for all drainage entitled to pass through it, but its course may be altered or other sufficient and suitable drains may be substituted in its place. If the municipality does not so maintain and keep it in repair, any person entitled to drainage through it may have an action against the municipality for damages sustained by the municipality's neglect.

Municipality Liability

- Generally, the municipality may be liable for deferred or inadequate maintenance. Backups due to other causes may not create liability.
- “A town is not liable for fault in the location, size, plan of construction, or general design of its sewers, but it may be liable for failure to keep them in repair.” – *Sherburne v. Inhabitants of Sanford* (1915) Me., 113 Me.66 92 A. 997.
- Combined sewer systems or systems that experience surcharging, absent a blockage, may not create liability for the municipality.

Maintenance

- “Maintenance” is not defined by statute. The type of maintenance done and its frequency depends in part on the operator’s knowledge of the line. Is there a prior history of blockages, are there restaurants or other sources of grease, is it a dead-end or low spot, what is the condition of the pipes? These and other factors will help to determine the “reasonableness” of the maintenance.
- What is proper maintenance? It can be annual inspection with a camera, periodic jetting or flushing, or visual inspections at the manhole cover. Identifying problem areas and cleaning more frequently along with keeping a written schedule or plan of these inspections and cleanings may prevent sewer backups and identify future problems. Written documentation is always crucial in defending a claim for damages.

What should you do after a backup?

- Never say “we will take care of it.”
- Do not admit or insinuate fault.
- Always respond to the residence and find out if the backup was caused by a problem in your line.
- Clearly explain that you are not allowed to work on their private lateral line. Suggest that the homeowners submit the loss to their own insurance provider (most likely a homeowner’s policy) and advise them that a loss notice will be submitted to your insurance carrier who will be in contact with them and conduct an investigation.
- Notify your liability coverage provider immediately.



Sewer System Evaluation Form

Size, Linear Feet, and Type of lines:

	Diameter	Linear Feet	Type
A.			
B.			
C.			
D.			
E.			

Any undersized lines and schedule for replacement/upgrade? Yes No

Any private system lines connected to the system? Yes No

Inspection/maintenance requirements for private system lines? Yes No

Documented plan/schedule for system line cleaning with records maintained? Yes No

Type of line cleaning performed.

Rodding
 Jetting
 Other

Problem or critical lines identified and inspected cleaned more frequently? Yes No

Problem or critical line locations:

A. _____

B. _____

C. _____

D. _____

Frequency of inspection of critical/problem lines:

Weekly
 Monthly
 Quarterly
 Biannual
 Annual

Has a video survey of the system been completed? Yes No

If yes, what percentage of the system has been video surveyed?

10%
 25%
 50%
 75%
 100%

Plan to avoid downstream surges, how is it controlled? Yes No

Documentation of inspected lines maintained? Yes No

Maintenance and inspection logs include the following information?

- | | | |
|---|------------------------------|-----------------------------|
| a. Date of inspection, cleaning, or repair. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| b. Location of line and manhole. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| c. Name(s) of operator(s)/Contractor. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| d. Size of the line cleaned. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| e. Equipment used. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| f. Any unusual findings or occurrences. | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Exhibit 2.1



Percentage of entire system cleaned annually?

10% 20% 30% 40% 50%

Have areas not been cleaned in longer than 5 years?

Yes No

Plans to address these areas?

Yes No

If yes, describe:

Documented manhole inspection procedure in place?

Yes No

Procedure for obstructed/blocked manhole access?

Yes No

Lift stations are equipped with power failure alarms?

Yes No

Local Onsite visual/audible Connected to SCADA 24 hour monitoring

Lift stations either have onsite generator for back-up power or generator connection point for portable generator?

Yes No

How many portable generators are available?

Lift stations equipped with high water or high flow alarms?

Yes No

Sewer Use Ordinance in place?

Yes No

The sewer use ordinance includes the following elements?

Requires installation of back flow preventers?

Yes No

Education of municipal residents on the need for periodic inspection of back flow preventers?

Yes No

Requires grease traps be installed at all commercial facilities such as restaurants?

Yes No

Prohibits property owners from directing sump pumps and down spouts into the sewer system?

Yes No

There is an emergency plan in place to ensure a timely and appropriate response if a back-up occurs?

Yes No

Emergency plans include the following elements?

A list identifying who will be called when a back-up occurs?

Yes No

A list of equipment needed and where it is stored?

Yes No

Employees have received training and are properly equipped for entering Confined Spaces?

Yes No

Confined Space entry equipment including harnesses, tripod, winch, atmospheric testing equipment, ventilation fans inspected and properly maintained?

Yes No

Employees have been properly trained in use of jetting/rodding/system cleaning equipment?

Yes No



Employees have been trained in proper work zone set up and have access to MUTCD information? Yes No

The member has appropriate and sufficient number of traffic control devices? Yes No

If contractors are used for any system maintenance or repairs Certificates of Insurance are presented and verified before work begins? Yes No

Scheduled system maintenance, upgrade, line replacement, lining of existing lines.
1 year:

5 year:

10 year:

Capital Improvement Plan Funded? Yes No

Other Municipality Entitles Using System? Yes No

If yes, whom:

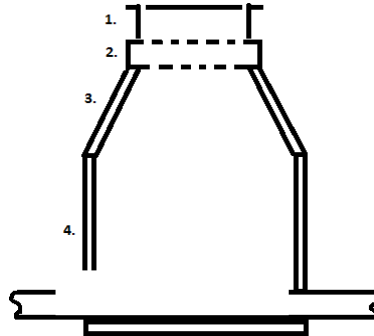
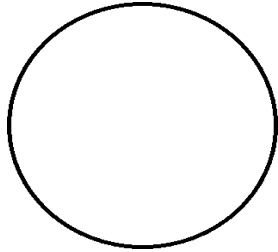
Other Municipal Entities following criteria listed on document? Yes No

If yes, whom:

Recommendations:

MANHOLE INSPECTION REPORT

MH NO: _____ DATE: _____ TIME: _____ INSPECTOR: _____
 ELEVATION: _____ DEPTH TO INVERT: _____ CLEANLINESS: _____
 CONSTRUCTION: _____ STREET REFERENCES: _____



- 1. Frame & Cover: _____
- 2. Chimney: _____
- 3. Cone: _____
- 4. Barrel: _____
- 5. Shelf: _____
- 6. Pipes or Channels: _____
- 7. Infiltration Noted: _____
- 8. Flow at time of Inspection: _____

	PIPE SIZE	LENGTH	TO MH#	EST. FLOW	TYPE FLOW
A-					
B-					
C-					
D-					

REMARKS: (Include need for repairs)

Ties to Manhole

--

1. INITIAL INSPECTION:	11. STRUCTURAL INSPECTION	111. HYDRAULIC INSPECTION
<p>A. LOCATION:</p> <p>1. Roadway <input type="checkbox"/></p> <p>2. Gutter <input type="checkbox"/></p> <p>3. Paved Alley <input type="checkbox"/></p> <p>4. Unpaved Alley <input type="checkbox"/></p> <p>5. Easement <input type="checkbox"/></p> <p>6. Other <input type="checkbox"/></p> <p>B. MANHOLE COVER</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Damaged <input type="checkbox"/></p> <p>3. Displaced <input type="checkbox"/></p> <p>4. Missing Grout <input type="checkbox"/></p> <p>5. Needs Raising <input type="checkbox"/></p> <p>6. Needs Lowering <input type="checkbox"/></p> <p>C. RING & FRAME:</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Loose <input type="checkbox"/></p> <p>3. Displaced <input type="checkbox"/></p> <p>4. Missing Grout <input type="checkbox"/></p> <p>5. Needs Raising <input type="checkbox"/></p> <p>6. Needs Lowering <input type="checkbox"/></p> <p>D. MANHOLE MATERIAL:</p> <p>1. Brick <input type="checkbox"/></p> <p>2. Concrete <input type="checkbox"/></p> <p>E. SIZE M. H. COVER</p> <p>1. 24 Inch <input type="checkbox"/></p> <p>2. 30 Inch <input type="checkbox"/></p> <p>F. MANHOLE SIZE:</p> <p>1. 4 Foot <input type="checkbox"/></p> <p>2. 5 Foot <input type="checkbox"/></p>	<p>A. STEPS:</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Unsafe <input type="checkbox"/></p> <p>3. Missing (No.) <input type="checkbox"/></p> <p>4. Corroded <input type="checkbox"/></p> <p>B. CONE:</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Broken <input type="checkbox"/></p> <p>3. Sulfided <input type="checkbox"/></p> <p>4. Misaligned <input type="checkbox"/></p> <p>5. Leaking/Bad Joints <input type="checkbox"/></p> <p>C. RISER</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Broken <input type="checkbox"/></p> <p>3. Sulfided <input type="checkbox"/></p> <p>4. Misaligned <input type="checkbox"/></p> <p>5. Leaking/Bad Joints <input type="checkbox"/></p> <p>D. SHELF:</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Broken <input type="checkbox"/></p> <p>3. Dirty <input type="checkbox"/></p> <p>3. Sulfided <input type="checkbox"/></p> <p>E. CHANNEL:</p> <p>1. Serviceable <input type="checkbox"/></p> <p>2. Obstructed <input type="checkbox"/></p> <p>3. Sulfided <input type="checkbox"/></p> <p>4. Bad Pipe Joint <input type="checkbox"/></p> <p>5. Silt <input type="checkbox"/></p> <p>6. Poor Struct. Cond. <input type="checkbox"/></p>	<p>A. INFLOW INDICATIONS:</p> <p>1. Debris on Sides/Shelf <input type="checkbox"/></p> <p>B. SURCHARGE INDICATIONS:</p> <p>1. Grease/Debris Sides & Shelf <input type="checkbox"/></p> <p>C. CLARITY OF FLOW:</p> <p>1. Turbid Appearance <input type="checkbox"/></p> <p>2. Clear Appearance <input type="checkbox"/></p> <p>D. FLOW</p> <p>1. Steady <input type="checkbox"/></p> <p>2. Pulsing <input type="checkbox"/></p> <p>3. Turbulent <input type="checkbox"/></p> <p>4. Surcharging <input type="checkbox"/></p> <p>5. Sluggish <input type="checkbox"/></p> <p>E. FLOW DEPTH COMPARED TO ADJACENT MANHOLES:</p> <p>1. Same <input type="checkbox"/></p> <p>2. Lower <input type="checkbox"/></p> <p>3. Higher <input type="checkbox"/></p> <p>F. FLOW DEPTH:</p> <p style="text-align: right;">_____ Inches</p> <p>Time: _____ AM/PM</p> <p>IV. VERMIN</p> <p>1. Roaches <input type="checkbox"/></p> <p>2. Rats <input type="checkbox"/></p> <p>3. Other <input type="checkbox"/></p>

OBSERVATION SUMMARY:

FOREMAN II RECOMMENDATIONS:

SUPERVISOR COMMENTS:

MANHOLE INSPECTION FORM



Manhole Inspection Report

Inspection Date:

Manhole #:

Address:

GPS Coordinates:

Weather Conditions:

Inspector:

Gas Meter Reading: O2:

LEL:

Co2:

H2S:

Cover Condition: Loose Tight Sealed Bolted Buried

Frame/Cover Status: Good Raise Lower Cover Replace Frame Replace

Manhole Interior Construction: Plastic Brick Concrete Metal Other

Interior Condition: Good Fair Poor

Manhole Access Rungs: Good Fair Poor

Grit Level: Inches Feet Root Intrusion: Yes No

Manhole Depth:

Infiltration Into Manhole: None Low Medium High

Connections Entering Manhole: Type Diameter

Alarms Tested and Working: Yes No

Observed Flow Rate: Normal Below Average Above Average

Further System Inspection Needed Due to Observed Conditions: Yes No

Repairs needed: Yes No

Component in need of Repair:

Repair Work Order Number:



Line Inspection & Cleaning Documentation

It is recommended that all line segments and manholes be clean or be cleaned to the point that the entire pipe or manhole is visible unless specified otherwise. Very light deposits may, in the opinion of engineer, be acceptable. However, any deposits that obscure a joint, obscure a potential defect or result in any "holding of flow" shall not be acceptable.

Pipe ID	Location	Diam (in)	Length (ft)	Material	Equipment	Frequency Days	Last Maintained	Comment
2-05-04	Water St	10	260	VC	Jet/vac	30	8/1/2014	Good Flow

Cleaning Results

Material	Clear	Light	Medium	Heavy	Not Rated
Debris					
Grease					
Roots					
Other					

Remarks:

Recommended Actions:

Cleaning frequency: The Same _____ Increase _____ Decrease _____

Repair Pipe: No ___ Yes ___ Comment _____

Repair MH: No ___ Yes ___ Comment _____

Root Control: No ___ Yes ___ Comment _____

Completed by: _____ Date: _____

Supervisor: _____ Date: _____

Ensure that line segments have been cleaned prior to a CCTV survey.



Pump Station Checklist

Pump Station Checklist																									
Date:						Employee:															/				
Station	P #1	P #2	P #3	2 Op	3 Op	Gen.	Gen. Oil	Gen Block Heater	Breakers	Test Pumps	Sump Pump	Alarm System	Temperature	Comminutor	Wet Well	Building	Grounds	Fire Ex.	Clean floats	Clean Multitrode	Clean Vac Bowls	Chaged Filters	X Valves	Run Gen.	Pump Grease

Exhibit 2.5

Section 3 – Operational Assessment

Asset management helps wastewater utilities identify resources, optimize operations, improve communications and plan for future needs. Within this section you will find a CMOM (*Capacity, Management, Operations, and Maintenance*) Checklist and additional information on the implementation of the Asset Management Form.

Exhibit 3.1 - Understanding a CMOM Program

What is CMOM?

Purpose of a CMOM

How to use

Exhibit 3.2 - Asset Management Form

General Information

Collection System Description

Engineering Design

Sewer Use Ordinance

Organizational Structure

Internal Communications

Budgeting

Training

Safety

Customer Service

Equipment & Collection System Maintenance

Equipment Parts Inventory

Management Information System

Mapping

Inspections

Cleanings

Manhole Inspection and Assessment

Pump Stations Assessment

Capacity Assessment

Tracking Sanitary Sewer Overflows

Overflow Emergency Response Plan

Smoke and Dye Testing

Hydrogen Sulfide Monitoring and Control

Infrastructure Security



About the CMOM Program Self Assessment Checklist

Introduction

A sanitary sewer collection system is a vital element of any community's infrastructure and a critical component of the wastewater treatment process. The nation's sanitary sewer infrastructure has been built over the last 100 years or more using a variety of materials, design standards, installation techniques, and maintenance practices. As this valuable infrastructure ages, the importance of preventive and predictive maintenance increases.

What is CMOM?

CMOM stands for "capacity, management, operations, and maintenance." It is a flexible, dynamic framework for municipalities to identify and incorporate widely-accepted wastewater industry practices to:

- Better manage, operate, and maintain collection systems
- Investigate capacity constrained areas of the collection system
- Respond to sanitary sewer overflow (SSO) events

The CMOM approach helps municipal wastewater utility operators provide a high level of service to customers and reduce regulatory noncompliance. CMOM can help utilities optimize use of human and material resources by shifting maintenance activities from "reactive" to "predictive"—often leading to cost savings through avoided overtime, emergency construction costs, increased insurance premiums, and the possibility of lawsuits. CMOM information and documentation can also help improve communications with the public, other municipal works and regional planning organizations, and regulators.

In CMOM planning, the utility selects performance goal targets, and designs CMOM activities to meet the goals. The CMOM planning framework covers operation and maintenance (O&M) planning, capacity assessment and assurance, capital improvement planning, and financial management planning. Information collection and management practices are used to track how well each CMOM activity is meeting the performance goals, and whether overall system efficiency is improving. On an ongoing basis, activities are reviewed and adjusted to better meet the performance goals. As the CMOM program progresses, performance goals can change. For instance, an initial goal may be to develop a geographic information system (GIS) of the system. Once the GIS is complete, a new goal might be to use the GIS to track emergency calls and use the information to improve maintenance planning.

An important component of a successful CMOM program is to periodically collect information on current systems and activities and develop a "snapshot-in-time" analysis. From this analysis, the utility establishes its performance goals and plans its CMOM program activities.

Additional information describing CMOM can be found at: www.epa.gov/npdes/ss0 or www.epa.gov/region4/water/wpeb/pdfs/self-audit_review2-3.pdf.



About this Checklist (Continued)

What is the purpose of the CMOM program checklist?

This document is a screening-level tool that can help utilities evaluate CMOM programs and identify general areas of strength and weakness. Completing this CMOM assessment will allow the utility to flag CMOM program areas that need improvement and establish priorities for additional, more detailed assessments. In addition, the checklist will allow the utility to compare annual performance (e.g., percent of employees meeting training standards).

This document is not intended to be all-inclusive. It addresses the types of practices EPA believes should be considered by most utilities when implementing a CMOM program. However, the ways in which utilities use the information gathered through the checklist will depend on the complexity and site-specific issues facing individual collection systems. When reviewing the questions, utilities should use their judgment to determine if the question is reasonable for their collection system size and design.

How do I use this checklist?

The questions on the checklist will request answers in three different formats:

- Check yes, no, or not applicable (NA),
- Fill in the blank, and
- Check all that apply.

At the end of each section, additional space is provided to allow for comments on or explanations of the answers recorded (information that will be useful to the utility in follow-on planning). Each utility should make an effort to answer all the questions that are applicable to its system. If a particular question takes a significant amount of time to answer, this could be an indication of an area of weakness. Utilities should plan to invest approximately one day to complete the checklist.

This document is designed to help utilities perform an initial evaluation of CMOM activities. **It is not intended to serve as an absolute indicator of a successful CMOM program, nor will all of the questions apply to every utility.** By working through these questions, utilities will be able to identify strengths and areas for improvements in their CMOM programs. If a utility has a significant number of “no” answers or very few items selected in the checklist, this could indicate an area of weakness. The utility manager then can make a more detailed evaluation, including identifying specific actions needed to address areas for improvement.



General Information

CHECKLIST COMPLETED BY:

Name _____ Date _____

Daytime Telephone Number _____

UTILITY CONTACT INFORMATION

Utility Name _____

LOCATION

Street Address _____

Street Address (continued) _____

City _____ State _____ Zip _____

STAFF

Name _____

Title _____

Email _____

Phone (____) _____ - _____ Fax (____) _____ - _____

PERMITTED TREATMENT & COLLECTION FACILITIES

NPDES or STATE PERMIT #

PERMITTEE/CO-PERMITTEE/JURISDICTIONS

PERMIT COVERAGE

WWTP Effluent Collection System Wet-Weather Facility

<input type="text"/>	<hr/> <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<hr/> <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<hr/> <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<hr/> <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="text"/>	<hr/> <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Collection System Description

SYSTEM INVENTORY

		<input type="text"/> NUMBER	# of Treatment facilities							
Treatment Facilities	WWTP design capacity	<input type="text"/> MGD		Conveyance & Pumping	Gravity Sewers	<input type="text"/> MILES	Force Mains	<input type="text"/> MILES	Pump Stations	<input type="text"/> NUMBER
	Average daily flow	<input type="text"/> MGD			<i>Pipes and pumps</i>					
	Average dry weather flow	<input type="text"/> MGD			Length/quantity					
					<i>Age of system</i>					
					0 - 25 years old	<input type="text"/> %		<input type="text"/> %		<input type="text"/> %
Access & Maintenance	Manholes	<input type="text"/> NUMBER		26 - 50 years old	<input type="text"/> %		<input type="text"/> PERCENT		<input type="text"/> NUMBER	
	Number of air vacuum relief valves	<input type="text"/> NUMBER		51 - 75 years old	<input type="text"/> %		<input type="text"/> %		<input type="text"/> %	
				>76 years old	<input type="text"/> %		<input type="text"/> PERCENT		<input type="text"/> NUMBER	
				Number of inverted siphons					<input type="text"/>	

SERVICE AREA CHARACTERISTICS

Service area	<input type="text"/> ACRES	<table border="1"> <tr> <th colspan="5">Number of Service Connections</th> </tr> <tr> <td>Residential</td> <td>Commercial</td> <td>Industrial</td> <td></td> <td>TOTAL</td> </tr> <tr> <td><input type="text"/> NUMBER</td> <td><input type="text"/> NUMBER</td> <td><input type="text"/> NUMBER</td> <td>+</td> <td><input type="text"/> NUMBER</td> </tr> </table>				Number of Service Connections					Residential	Commercial	Industrial		TOTAL	<input type="text"/> NUMBER	<input type="text"/> NUMBER	<input type="text"/> NUMBER	+	<input type="text"/> NUMBER
Number of Service Connections																				
Residential	Commercial					Industrial		TOTAL												
<input type="text"/> NUMBER	<input type="text"/> NUMBER	<input type="text"/> NUMBER	+	<input type="text"/> NUMBER																
Service population	<input type="text"/> PEOPLE																			
Annual precipitation	<input type="text"/> INCHES																			

Collection system service lateral responsibility (*check one*)

<input type="checkbox"/> At main line connection only	<input type="checkbox"/> Beyond property line/clean out
<input type="checkbox"/> From main line to property line or easement/cleanout	<input type="checkbox"/> Other: _____

Combined Sewer Systems

What percent of sewer system is served by combined sewers (i.e., sanitary sewage and storm water in the same pipe)?

PERCENT



Collection System Description

	Gravity Sewers	Force Mains
PIPE DIAMETER		
8 inches or less	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
9 - 18 inches	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
19 - 36 inches	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
>36 inches	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
PIPE MATERIALS		
Prestressed concrete cylinder pipe (PCCP)	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
High density polyethylene (HDPE)	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Reinforced concrete pipe (RCP)	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Polyvinyl chloride (PVC)	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="N/A"/> <small>PERCENT</small>
Vitrified clay pipe (VCP)	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="N/A"/> <small>PERCENT</small>
Ductile iron	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Non-reinforced concrete pipe	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Asbestos cement pipe	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Cast iron	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Brick	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Fiberglass	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>
Other (<i>Explain</i>) _____	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>	<input style="border: 1px solid black; width: 50px; text-align: center;" type="text" value="%"/> <small>PERCENT</small>

Engineering Design (ED)

ED-01	Is there a document which includes design criteria and standard construction details?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-02	Is there a document that describes the procedures that the utility follows in construction design review?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-03	Are WWTP and O&M staff involved in the design review process?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-04	Is there a procedure for testing and inspecting new or rehabilitated system elements both during and after the construction is completed?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-05	Are construction sites supervised by qualified personnel (such as professional engineers or certified engineering technicians) to ascertain that the construction is taking place in accordance with the agreed upon plans and specifications?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-06	Are new manholes tested for inflow and infiltration?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-07	Are new gravity sewers checked using closed circuit TV inspection?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-08	Does the utility have documentation on private service lateral design and inspection standards?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
ED-09	Does the utility attempt to standardize equipment and sewer system components?	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Satellite Communities and Sewer Use Ordinance (SUO)

SUO-01 Does the utility receive flow from satellite communities? IF NO, GO TO PAGE 6 YES NO

SUO-02 What is the total area from satellite communities that contribute flow to the collection system? (*Acres or square miles*) _____

SUO-03 Does the utility require satellite communities to enter into an agreement? IF NO, GO TO QUESTION SUO-06. YES NO

SUO-04 Does the agreement include the requirements listed in the sewer use ordinance (SUO)? YES NO

SUO-05 Do the agreements have a date of termination and allow for renewal under different terms? YES NO

SUO-06 Does the utility maintain the legal authority to control the maximum flow introduced into the collection system from satellite communities? YES NO

SUO-07 Are standards, inspections, and approval for new connections clearly documented in a SUO? YES NO

SUO-08 Does the SUO require satellite communities to adopt the same industrial and commercial regulator discharge limits as the utility? YES NO

SUO-09 Does the SUO require satellite communities to adopt the same inspection and sampling schedules as required by the pretreatment ordinance? YES NO

SUO-10 Does the SUO require that satellite communities or the utility to issue control permits for significant industrial users? YES NO

SUO-11 Does the SUO contain provisions for addressing overstrength wastewater from satellite communities? YES NO

SUO-12 Does the SUO contain procedures for the following? (*Check all that apply*)

Inspection standards Pretreatment requirements Building/sewer permit issues

SUO-13 Does the SUO contain general prohibitions of the following materials? (*Check all that apply*)

Fire and explosions hazards Corrosive materials Obstructive materials

Oils or petroleum Material which may cause interference at the wastewater treatment plant

SUO-14 Does the SUO contain procedures and enforcement actions for the following? (*Check all that apply*)

Fats, oils, and grease (FOG) Storm water connections to sanitary lines (downspouts)

Infiltration and inflow Defects in service laterals located on private property

Building structures over the sewer lines Sump pumps, air conditioner connections

Organizational Structure (OC)

OC-01 Is an organizational chart available that shows the overall personnel structure for the utility, including operation and maintenance staff? YES NO

OC- 02 Are up-to-date job descriptions available that delineate responsibilities and authority for each position? YES NO

OC-03 Are the following items discussed in the job descriptions? (*Check all that apply*)

<input type="checkbox"/> Nature of work to be performed	<input type="checkbox"/> Examples of the types of work
<input type="checkbox"/> Minimum requirements for the position	<input type="checkbox"/> List of licenses required for the position
<input type="checkbox"/> Necessary special qualifications or certifications	<input type="checkbox"/> Performance measures or promotion potential

OC-04 What percent of staff positions are currently vacant? _____ %

OC-05 On average how long do positions remain vacant? (*months*) _____

OC-06 What percent of utility work is contracted out? _____ %

Internal Communications (IC)

IC-01 Which of the following methods are used to communicate with utility staff? (*Check all that apply*)

Regular meetings

Bulletin boards

E-mail

Other (walkie talkie/pager)

IC-02 How often are staff meetings held? (*e.g., Daily, Weekly, Monthly, etc.*) _____

IC-03 Are incentives offered to employees for performance improvements?

YES

NO

IC-04 Does the utility have an “Employee of the Month/Quarter/Year” program?

YES

NO

IC-05 How often are performance reviews conducted? (*e.g. Semi-annually, Annually, etc.*) _____

IC-06 Does the utility regularly communicate/coordinate with other municipal departments?

YES

NO



Budgeting (BUD)

BUD-01	What is the average annual fee for residential users?	\$	_____
BUD-02	How often are user charges evaluated and adjusted? (<i>e.g. annually, biannually, etc.</i>)		_____
BUD-03	Are utility-generated funds used for non-utility programs?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
BUD-04	Are costs for collection system operation and maintenance (O&M) separated from other utility services such as water, storm water, and treatment plants? IF NO, GO TO QUESTION BUD-07.	<input type="checkbox"/> YES	<input type="checkbox"/> NO
BUD-05	What is your average annual (O&M) budget?	\$	_____
BUD-06	What percentage of the utility's overall budget is allocated to maintenance of the collection system?		_____ %
BUD-07	Does the utility have a Capital Improvement Plan (CIP) that provides for system repairs/replacements on a prioritized basis?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
BUD-08	What is your average annual CIP budget?	\$	_____
BUD-09	What percentage of the maintenance budget is allotted to the following maintenance?		
	Predictive maintenance (tracking design, life span, and scheduled parts replacements)		_____ %
	Preventive maintenance (identifying and fixing system weaknesses which, if left unaddressed, could lead to overflows)		_____ %
	Corrective maintenance (fixing system components that are functioning but not at 100% capacity/efficiency; for example partially blocked lines)		_____ %
	Emergency maintenance (reactive maintenance, overflows, equipment breakdowns)		_____ %
BUD-10	Does the utility have a budgeted program for the replacement of under-capacity pipes?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
BUD-11	Does the utility have a budgeted program for the replacement of over-capacity pipes?	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Training (TR)

- TR-01 Does the utility have a formal job knowledge, skills, and abilities (KSA) training program? YES NO
- TR-02 Does the training program address the fundamental mission, goals, and policies of the utility? YES NO
- TR-03 Does the utility have mandatory training requirements identified for key employees? YES NO

TR-04 What percentage of employees met or exceeded their annual training goals during the past year? _____ %

- TR-05 Does the utility provide training in the following areas? *(Check all that apply)*
- | | | |
|---|---|--|
| <input type="checkbox"/> Safety | <input type="checkbox"/> Traffic control | <input type="checkbox"/> Public relations |
| <input type="checkbox"/> Routine line maintenance | <input type="checkbox"/> Record keeping | <input type="checkbox"/> SSO/Emergency response |
| <input type="checkbox"/> Confined space entry | <input type="checkbox"/> Electrical and instrumentation | <input type="checkbox"/> Pump station operations and maintenance |
| <input type="checkbox"/> Other | <input type="checkbox"/> Pipe repair | <input type="checkbox"/> CCTV and trench/shoring |
| | <input type="checkbox"/> Bursting CIPP | |

- TR-06 Are operator and maintenance certification programs used? IF NO, GO TO QUESTION TR-08 YES NO
- TR-07 Are operator and maintenance certification programs required? YES NO
- TR-08 Is on-the-job training progress and performance measured? YES NO

TR-09 Which of the following methods are used to assess the effectiveness of the training? *(Check all that apply)*

None Periodic testing Drills Demonstrations

TR-10 What percentage of the training offered by the utility is in the form of the following?

Manufacturer training _____ %	In-house classroom training _____ %
On-the-job training _____ %	Industry-wide training _____ %

Safety (SAF)

- SAF-01 Does the utility have a written safety policy? YES NO
- SAF-02 How often are safety procedures reviewed and revised? (e.g. *Semiannually, Annually, etc.*) YES NO
- SAF-03 Does the utility have a safety committee? YES NO
- SAF-04 Are regular safety meetings held with the utility employees? YES NO
- SAF-05 Does the utility have a safety training program? YES NO
- SAF-06 Are records of employee safety training kept up to date? YES NO

SAF-07 Does the utility have written procedures for the following? (*Check all that apply*)

<input type="checkbox"/> Lockout/tagout	<input type="checkbox"/> Biological hazards in wastewater
<input type="checkbox"/> Material safety data sheets (MSDS)	<input type="checkbox"/> Traffic control and work site safety
<input type="checkbox"/> Chemical handling	<input type="checkbox"/> Electrical and mechanical systems
<input type="checkbox"/> Confined spaces permit program	<input type="checkbox"/> Pneumatic and hydraulic systems safety
<input type="checkbox"/> Trenching and excavations safety	

SAF-08 What is your agency's lost-time injury rate? _____ % or _____ hours

SAF-09 Are the following equipment items available and in adequate supply? (*Check all that apply*)

<input type="checkbox"/> Rubber/disposable gloves	<input type="checkbox"/> Full body harness
<input type="checkbox"/> Confined space ventilation equipment	<input type="checkbox"/> Protective clothing
<input type="checkbox"/> Hard hats, safety glasses, rubber boots	<input type="checkbox"/> Traffic/public access control equipment
<input type="checkbox"/> Antibacterial soap and first aid kit	<input type="checkbox"/> 5-minute escape breathing devices
<input type="checkbox"/> Tripods or non-entry rescue equipment	<input type="checkbox"/> Life preservers for lagoons
<input type="checkbox"/> Fire extinguishers	<input type="checkbox"/> Safety buoy at activated sludge plants
<input type="checkbox"/> Equipment to enter manholes	<input type="checkbox"/> Fiberglass or wooden ladders for electrical work
<input type="checkbox"/> Portable crane/hoist	<input type="checkbox"/> Respirators and/or self contained breathing apparatus
<input type="checkbox"/> Atmospheric testing equipment and gas detectors	<input type="checkbox"/> Methane gas or optical vector (OVA) analyzer
<input type="checkbox"/> Oxygen sensors	<input type="checkbox"/> Lower explosion limit (LEL) metering
<input type="checkbox"/> H ₂ S Monitors	

- SAF-10 Are safety monitors clearly identified? YES NO

Customer Service (CS)

CS-01 Does the utility have a customer service and public relations program? IF NO GO TO QUESTION CS-03 YES NO

CS-02 Does the customer service program include giving formal presentations on the wastewater field to the following? *(Check all that apply)*

Schools and universities Local officials Media Building Inspector(s)

Community gatherings Businesses Citizens Public utility officials

CS-03 Are employees of the utility specifically trained in customer service? YES NO

CS-04 Are there sample correspondence, Q/A's, or "scripts" to help guide staff through written or oral responses to customers? YES NO

CS-05 What methods are used to notify the public of major construction or maintenance work? *(Check all that apply)*

Door hangers Newspaper Fliers Signs Other None

Public radio or T.V. announcements

CS-06 Is a homeowner notified prior to construction that his/her property may be affected? YES NO

CS-07 Do you provide information to residents on cleanup and safety procedures following basement backups and overflows from manholes when they occur? YES NO

CS-08 Does the utility have a customer service evaluation program to obtain feedback from the community? YES NO

CS-09 Do customer service records include the following information? *(Check all that apply)*

Personnel who received the complaint or request Name, address, and telephone number of customer

Nature of the complaint or request Location of the problem

To whom the follow-up action was assigned Date the follow up action was assigned

Date of the complaint or request Cause of the problem

Date the complaint or request was resolved Feedback to customer

Total days to end the problem

CS-10 Does the utility have a goal for how quickly customer complaints (or emergency calls) are resolved? IF NO, GO TO THE NEXT PAGE. YES NO

CS-11 What percentage of customer complaints (or emergency calls) are resolved within the timeline goals? _____ %

Equipment and Collection System Maintenance (ESM)

ESM-01 Is a maintenance card or record kept for each piece of mechanical equipment within the collection system? IF NO, GO TO QUESTION ESM-03. YES NO

ESM-02	Do equipment maintenance records include the following information? (<i>Check all that apply</i>)		
<input type="checkbox"/>	Maintenance recommendations	<input type="checkbox"/>	Maintenance schedule
<input type="checkbox"/>	Instructions on conducting the specific maintenance activity	<input type="checkbox"/>	A record of maintenance on the equipment to date
<input type="checkbox"/>	Other observations on the equipment		

ESM-03 Are dated tags used to show out-of-service equipment? YES NO

ESM-04 Is there an established system for prioritizing equipment maintenance needs? YES NO

ESM-05	What percent of repair funds are spent on emergency repairs?	<u> </u> %
--------	--	---------------------

ESM-06 Are corrective repair work orders backlogged more than six months? YES NO

ESM-07 Do collection system personnel coordinate with state, county, and local personnel on repairs, before the street is paved? YES NO

Equipment Parts Inventory (EPI)

EPI-01	Have critical spare parts been identified?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
EPI-02	Are adequate supplies on hand to allow for two point repairs in any part of the system?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
EPI-03	Is there a parts standardization policy in place?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
EPI-04	Does the utility have a central location for storing spare parts?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
EPI-05	Does the utility maintain a stock of spare parts on its maintenance vehicles?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
EPI-06	Does the utility have a system in place to track and maintain an accurate inventory of spare parts?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
EPI-07	For those parts which are not kept in inventory, does the utility have a readily available source or supplier?	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Management Information System (MIS)

- MIS-01 Does the utility have a management information system (MIS) in place for tracking maintenance activities? *(Either electronic or good paper files)* IF NO, GO TO PAGE 15. YES NO
- MIS-02 Are the MIS records maintained for a period of at least three years? YES NO
- MIS-03 Is the MIS able to distinguish activities taken in response to an overflow event? YES NO

MIS-04 Are there written instructions for managing and tracking the following information? *(Check all that apply)*

<input type="checkbox"/> Complaint work orders	<input type="checkbox"/> Scheduled inspections	<input type="checkbox"/> Compliance/overflow tracking
<input type="checkbox"/> Scheduled work orders	<input type="checkbox"/> Sewer system inventory	<input type="checkbox"/> Equipment/tools tracking
<input type="checkbox"/> Customer service	<input type="checkbox"/> Safety incidents	<input type="checkbox"/> Parts inventory
<input type="checkbox"/> Scheduled preventive maintenance	<input type="checkbox"/> Scheduled monitoring/sampling	

MIS-05 Do the written instructions for tracking procedures include the following information? *(Check all that apply)*

<input type="checkbox"/> Accessing data and information	<input type="checkbox"/> Updating the MIS
<input type="checkbox"/> Instructions for using the tracking system	<input type="checkbox"/> Developing and printing reports

MIS-06 How often is the management information system updated? *(Check one)*

<input type="checkbox"/> Immediately	<input type="checkbox"/> Within one week of the “incident”
<input type="checkbox"/> Monthly	<input type="checkbox"/> As time permits

System Mapping (MAP)

- MAP-01 Are “as built” plans (record drawings) or maps available for use by field crews in the office and in the field? YES NO
- MAP-02 Is there a procedure for field crews to record changes or inaccuracies in the maps and update the mapping system? YES NO
- MAP-03 Do the maps show the date the map was drafted and the date of the last revision? YES NO

MAP-04 Do the sewer line maps include the following? *(Check all that apply)*

<input type="checkbox"/> Scale	<input type="checkbox"/> Street names	<input type="checkbox"/> Pipe material
<input type="checkbox"/> North arrow	<input type="checkbox"/> SSOs occurrences/CSOs outfalls	<input type="checkbox"/> Pipe diameter
<input type="checkbox"/> Date the map was drafted	<input type="checkbox"/> Flow monitors	<input type="checkbox"/> Installation date
<input type="checkbox"/> Date of last revision	<input type="checkbox"/> Force mains	<input type="checkbox"/> Slope
<input type="checkbox"/> Service area boundaries	<input type="checkbox"/> Pump stations	<input type="checkbox"/> Manhole rim elevation
<input type="checkbox"/> Property lines	<input type="checkbox"/> Lined sewers	<input type="checkbox"/> Manhole coordinates
<input type="checkbox"/> Other landmarks (Roads, water bodies, etc.)	<input type="checkbox"/> Main, trunk, and interceptor sewers	<input type="checkbox"/> Manhole invert elevation
<input type="checkbox"/> Manhole and other access points	<input type="checkbox"/> Easement lines and dimensions	<input type="checkbox"/> Distance between manholes
<input type="checkbox"/> Location of building laterals		

MAP-05 Are the following sewer attributes recorded? *(Check all that apply)*

<input type="checkbox"/> Size	<input type="checkbox"/> Invert elevation	<input type="checkbox"/> Separate/combined sewer
<input type="checkbox"/> Shape	<input type="checkbox"/> Material	<input type="checkbox"/> Installation Date

MAP-06 Are the following manhole attributes recorded? *(Check all that apply)*

<input type="checkbox"/> Shape	<input type="checkbox"/> Depth	<input type="checkbox"/> Age
<input type="checkbox"/> Type (e.g., precast, cast in place, etc.)	<input type="checkbox"/> Material	

- MAP-07 Is there a systematic numbering and identification method/system established to identify sewer system manhole, sewer lines, and other items (pump stations, etc.)? YES NO

Internal TV Inspection (TVI)

- TVI-01 Does the utility have a standardized pipeline condition assessment program? YES NO
- TVI-02 Is internal TV inspection used to perform condition assessment? IF NO, GO TO PAGE 17. YES NO
- TVI-03 Are there written operation procedures and guidelines for the internal TV inspection program? YES NO

TVI-04 Do the internal TV record logs include the following? *(Check all that apply)*

<input type="checkbox"/> Pipe size, type, length, and joint spacing	<input type="checkbox"/> Internal TV operator name
<input type="checkbox"/> Distance recorded by internal TV	<input type="checkbox"/> Cleanliness of the line
<input type="checkbox"/> Results of the internal TV inspection (including a structural rating)	<input type="checkbox"/> Location and identification of line being tele-vised by manholes

- TVI-05 Is a rating system used to determine the severity of the defects found during the inspection process? YES NO
- TVI-06 Is there documentation explaining the codes used for internal TV results reporting? YES NO

TVI-07 Approximately what percent of the total defects determined by TV inspection during the past 5 years were the following?

Failed coatings or linings _____ %	Line deflection _____ %
House connection leaks _____ %	Joint separation _____ %
Illegal connections _____ %	Crushed pipes _____ %
Pipe corrosion (H ₂ S) _____ %	Collapsed pipes _____ %
Fats, oil, and grease _____ %	Offset joints _____ %
Broken pipes _____ %	Root intrusions _____ %
Debris _____ %	Minor cracks _____ %
Other _____ %	

- TVI-08 Are main line and lateral repairs checked by internal TV inspection after the repair(s) have been made? YES NO

Sewer Cleaning (CLN)

CLN-01	What is the system cleaning frequency? (the entire system is cleaned every " <u>X</u> " years)	_____
CLN-02	What is the utility's plan for system cleaning (% or frequency in years)?	_____
CLN-03	What percent of the sewer lines are cleaned, even high/repeat cleaning trouble spots, during the past year?	_____ %
CLN-04	Is there a program to identify sewer line segments, with chronic problems, that should be cleaned on a more frequent schedule?	<input type="checkbox"/> YES <input type="checkbox"/> NO
CLN-05	Does the utility have a root control program?	<input type="checkbox"/> YES <input type="checkbox"/> NO
CLN-06	Does the utility have a fats, oils, and grease (FOG) program?	<input type="checkbox"/> YES <input type="checkbox"/> NO
CLN-07	What is the average number of stoppages experienced per mile of sewer pipe per year?	_____ %
CLN-08	Has the number of stoppages increased, decreased, or stayed the same over the past 5 years? <input type="checkbox"/> Increased <input type="checkbox"/> Decreased <input type="checkbox"/> Stayed the same	
CLN-09	Are stoppages plotted on maps and correlated with other data such as pipe size and material or location?	<input type="checkbox"/> YES <input type="checkbox"/> NO
CLN-10	Do the sewer cleaning records include the following information? (<i>Check all that apply</i>) <input type="checkbox"/> Date and time <input type="checkbox"/> Method of cleaning <input type="checkbox"/> Identity of cleaning crew <input type="checkbox"/> Cause of stoppage <input type="checkbox"/> Location of stoppage or routine cleaning activity <input type="checkbox"/> Further actions necessary/initiated	
CLN-11	If sewer cleaning is done by a contractor are videos taken of before and after cleaning?	<input type="checkbox"/> YES <input type="checkbox"/> NO

Manhole Inspection and Assessment (MAN)

MAN-01 Does the utility have a routine manhole inspection and assessment program? IF NO, GO TO QUESTION MAN-06. YES NO

MAN-02 Are the results and observations from the routine manhole inspections recorded? YES NO

MAN-03 Does the utility have a goal for the number of manholes inspected annually? YES NO

MAN-04 How many manholes were inspected during the past year? _____

MAN-05 Do the records for manhole/pipe inspection include the following? *(Check all that apply)*

<input type="checkbox"/> Conditions of the frame and cover	<input type="checkbox"/> Presence of corrosion
<input type="checkbox"/> Evidence of surcharge	<input type="checkbox"/> If repair is necessary
<input type="checkbox"/> Offsets or misalignments	<input type="checkbox"/> Manhole identifying number/location
<input type="checkbox"/> Atmospheric hazards measurements (especially hydrogen sulfide)	<input type="checkbox"/> Wastewater flow characteristics (flowing freely or backed up)
<input type="checkbox"/> Details on the root cause of cracks or breaks in the manhole or pipe including blockages	<input type="checkbox"/> Accumulations of grease, debris, or grit
<input type="checkbox"/> Recording conditions of (corbel, walls, bench, trough, and pipe seals)	<input type="checkbox"/> Presence of infiltration, location, and estimated quantity
	<input type="checkbox"/> Inflow from manhole covers

MAN-06 Does the utility have a grouting program? YES NO

Pump Stations (PS)

PS-01	Are Standard Operation Procedures (SOPs) and Standard Maintenance Procedures (SMPs) used for each pump station?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-02	Are there enough trained personnel to properly maintain all pump stations?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-03	Is there an emergency operating procedure for each pump station?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-04	Is there an alarm system to notify personnel of pump station failures and overflow?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-05	Percent of pump stations with back up power sources	%	
PS-06	Does the utility use the following methods when loss of power occurs? <i>(Check all that apply)</i> <input type="checkbox"/> On-site electrical generators <input type="checkbox"/> Portable electric generators <input type="checkbox"/> Alternate power source <input type="checkbox"/> Other <input type="checkbox"/> Vacuum trucks to bypass pump station		
PS-07	Is there a procedure for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-08	Are wet well operating levels set to limit pump start/stops?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-09	Are the lead, lag, and backup pumps rotated regularly?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-10	Are operation logs maintained for all pump stations?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-11	Are the original manuals that contain the manufacturers recommended maintenance schedules for all pump station equipment easily available?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-12	On average, how often were pump stations inspected during the past year?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-13	Are records maintained for each inspection?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
PS-14	Average annual labor hours spent on pump station inspection	_____	
PS-15	Percent of pump stations with pump capacity redundancy	_____ %	
PS-16	Percent of pump stations with dry weather capacity limitations	_____ %	
PS-17	Percent of pump stations with wet weather capacity limitations	_____ %	
PS-18	Percent of pump stations calibrated annually	_____ %	
PS-19	Percent of pump stations with permanent flow meters	_____ %	

Capacity Assessment (CA)

- CA-01 Does the utility have a flow monitoring program? YES NO
- CA-02 Does the utility have a comprehensive capacity assessment and planning program? YES NO
- CA-03 Are flows measured prior to allowing new connections? YES NO
- CA-04 Do you have a tool (hydraulic model, spreadsheet, etc.) for assessing whether adequate capacity exists in the sewer system? IF NO, GO TO QUESTION CA-06. YES NO
- CA-05 Does your capacity assessment tool produce results consistent with conditions observed in the system? YES NO

CA-06 What is the ratio of peak wet weather flow to average dry weather flow at the wastewater treatment plant? _____

CA-07 How many permanent flow meters are currently in the system? (Include meters at pump stations and wastewater treatment plants) _____

CA-08 How frequently are the flow meters checked? (e.g. Daily, Weekly, Monthly, etc.) _____

- CA-09 Do the flow meter checks include the following? (Check all that apply)
- Independent water level Velocity reading Downloading data
- Checking the desiccant Cleaning away debris Battery condition

- CA-10 Are records maintained for each inspection? IF NO, GO TO QUESTION CA-12. YES NO

- CA-11 Do the flow monitoring records include the following? (Check all that apply)
- Descriptive location of flow meter Frequency of flow meter inspection
- Type of flow meter Frequency of flow meter calibration

- CA-12 Does the utility maintain any rain gauges or have access to local rainfall data? YES NO
- CA-13 Does the utility have any wet weather capacity problems? YES NO
- CA-14 Are low points or flood-plain areas monitored during rain events? YES NO
- CA-15 Does the utility have any dry weather capacity problems? YES NO
- CA-16 Is flow monitoring used for billing purposes, capacity analysis, and/or inflow and infiltration investigations? YES NO

Tracking SSOs (TRK)

TRK-01	How many SSO events have been reported in the past 5 years?	_____
--------	---	-------

TRK-02	What percent of the SSOs were less than 1,000 gallons in the past 5 years ?	_____ %
--------	---	---------

TRK-03	Does the utility document and report all SSOs regardless of size?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
--------	---	------------------------------	-----------------------------

TRK-04	Does the utility document basement backups?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
--------	---	------------------------------	-----------------------------

TRK-05	Are there areas that experience frequent basement or street flooding?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
--------	---	------------------------------	-----------------------------

TRK-06	Approximately what percent of SSOs discharges were from each of the following in the last 5 years?			
	Manholes	%	Main and trunk sewers	%
			Structural bypasses	_____ %
	Pump stations	%	Lateral and branch sewers	%

TRK-07	Approximately what percent of SSOs discharges were caused by the following in the last 5 years?			
	Debris buildup	_____ %	Root intrusion	_____ %
			Excessive infiltration and inflow	_____ %
	Collapsed pipe	_____ %	Capacity limitations	_____ %
			Fats, oil, and grease	_____ %
	Vandalism	_____ %		

TRK-07A	What percentage of SSOs were released to:			
	Soil	_____ %	Basements	_____ %
			Paved area	_____ %
	Surface water (rivers/lakes/streams)	_____ %	Coastal, ocean, beaches	_____ %

TRK-07B	For surface water releases, what percent are to areas that could affect:			
	Contact recreation (beaches, swimming, areas)	_____ %	Drinking water sources	_____ %
	Shellfish growing areas	_____ %		

TRK-08	How many chronic SSO locations are in the collection system?	_____
--------	--	-------

TRK-09	Are pipes with chronic SSOs being monitored for sufficient capacity and/or structural condition?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
--------	--	------------------------------	-----------------------------

TRK-10	Prior to collapse, are structurally deteriorating pipelines being monitored for renewal or replacement?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
--------	---	------------------------------	-----------------------------

Overflow Emergency Response Plan (OERP)

OERP-01 Does the utility have a documented OERP available for utility staff to use? IF NO, GO TO QUESTION OERP-04. YES NO

OERP-02 How often is the OERP reviewed and updated? (*Annually, Biannually, etc.*) _____

OERP-03 Are specific responsibilities detailed in the OERP for personnel who respond to emergencies? YES NO

OERP-04 Are staff continuously trained and drilled to respond to emergency situations? YES NO

OERP-05 Do work crews have immediate access to tools and equipment during emergencies? YES NO

OERP-06 Does the utility have standard procedures for notifying state agencies, local health departments, the NPDES authority, the public, and drinking water authorities of significant overflow events? YES NO

OERP-07 Does the procedure include a current list of the names, titles, phone numbers, and responsibilities of all personnel involved? YES NO

OERP-08 Does the utility have a public notification plan? YES NO

OERP-09 Does the utility have procedures to limit public access to and contact with areas affected with SSOs? (*Procedure can be delegated to another authority*) YES NO

OERP-10 Does the utility use containment techniques to protect the storm drainage systems? YES NO

OERP-11 Do the overflow records include the following information? (*Check all that apply*)

<input type="checkbox"/> Date and time	<input type="checkbox"/> Location	<input type="checkbox"/> Any remediation efforts
<input type="checkbox"/> Cause(s)	<input type="checkbox"/> How it was stopped	<input type="checkbox"/> Estimated flow/volume discharged
<input type="checkbox"/> Names of affected receiving water(s)	<input type="checkbox"/> Duration of overflow	

OERP-12 Does the utility have signage to keep public from effected area? YES NO

Smoke and Dye Testing (SDT)

SDT-01	Does the utility have a smoke testing program to identify sources of inflow and infiltration?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-01A	Does the utility have a smoke testing program to identify sources of inflow and infiltration in illegal connectors?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-01B	Does the utility have a smoke testing program to identify sources of inflow and infiltration in house laterals (private service laterals)?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-02	Are there written procedures for the frequency and schedule of smoke testing?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-03	Is there a documented procedure for isolating line segments?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-04	Is there a documented procedure for notifying local residents that smoke testing will be conducted in their area?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-05	What is the guideline for the maximum amount of the line to be tested at one time? (Feet or Miles)	_____	
SDT-06	Are there guidelines for the weather conditions under which smoke testing should be conducted?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-07	Does the utility have a goal for the percent of the system smoke tested each year?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-08	What percent of the system has been smoke tested over the past year?	_____ %	
SDT-09	Do the written records contain location, address, and description of the smoking element that produced a positive result?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-10	Does the utility have a dye testing program?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-11	Are there written procedures for dye testing?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-12	Does the utility have a goal for the percent of the system dye tested each year?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
SDT-13	What percent of the main collection system has been dye tested over the past year?	_____ %	
SDT-14	Does the utility share smoke and dye testing equipment with another utility?	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Hydrogen Sulfide Monitoring and Control (HSMC)

HSMC-01 How would you rate the systems vulnerability for hydrogen sulfide corrosion? (*Check only one*)

- Not a problem Only in a few isolated areas A major problem

HSCM-02 Does the utility have a corrosion control program? YES NO

HSCM-03 Does the utility take hydrogen sulfide corrosion into consideration when designing new or replacement sewers? YES NO

HSCM-04 Does the utility have written procedures for the application of chemical dosages? YES NO

HSCM-05 Are the chemical dosages, dates, and locations documented? YES NO

HSCM-06 Does the utility document where odor is a continual problem in the system? YES NO

HSCM-07 Does the utility have a program in place for renewing or replacing severely corroded sewer lines to prevent collapse? YES NO

HSCM-08 Are the following methods used for hydrogen sulfide control? (*Check all that apply*)

- | | | |
|---|--|---|
| <input type="checkbox"/> Aeration | <input type="checkbox"/> Chlorine | <input type="checkbox"/> Potassium permanganate |
| <input type="checkbox"/> Iron salts | <input type="checkbox"/> Sodium hydroxide | <input type="checkbox"/> Biofiltration |
| <input type="checkbox"/> Enzymes | <input type="checkbox"/> Hydrogen peroxide | <input type="checkbox"/> Other |
| <input type="checkbox"/> Activated charcoal canisters | | |

HSCM-09 Does the system contain air relief valves at the high points of the force main system? YES NO

HSCM-10 How often are the valves maintained and inspected? (*Weekly, Monthly, etc.*) _____

HSMC-11 Does the utility enforce pretreatment requirements? YES NO

Infrastructure Security

Although outside the scope of a CMOM program, municipal wastewater utilities should also consider security vulnerabilities. To reduce the threat of both intentional and natural disasters, the utility should take steps to implement appropriate countermeasures and develop or update emergency response plans.

Section 4 – Customer Relations

The Customer Relations section of this guide is designed to assist how you and your staff interact and educate your customers on the Sewer Backups and the prevention of Sewer Backups.

Exhibit 4.1 - Sewer Backup Procedures

Office Representatives: Suggested language as to what to do and say in the event of an alleged sewer backup, including documentation.

Field Representatives: Suggested language as to what to do and say in the event of an alleged sewer backup, including documentation.

Exhibit 4.2 - Reference Guides:

Auto cards are designed to help your field operators communicate with your customers during a loss.

- Working with Property Owner
- Litigation STOPS Direct Communication
- Examples of what you might say

Exhibit 4.3 - Incident Report: This sample report is created to assist your field operators to obtain and document pertinent loss data in the event of an alleged sewer backup.

Customer Education and Sample News Letter Topics: This section is designed to provide educational resources and communication tools to help inform your customers of their responsibilities, hazards, and any updates or projects to the sewer system.

Exhibit 4.4 - Understanding Sewer Backups / Customer Information

Exhibit 4.5 - Fat Oil Grease Clogs Pipes

Exhibit 4.6 - What Not To Flush

Exhibit 4.7 - Not A Trash Can

Exhibit 4.8 - News Letter Samples

- Purpose of a Wastewater Treatment Facility
- How a Treatment Plant Works
- Challenges Facing Treatment Facilities
- Customer Education
- Plant & System Upgrades
- Community Outreach



Customer Relations: Backup Procedures

This is intended to provide guidance and direction to District/Municipality staff in the event that a customer reports experiences and reports a sewer backup on their property. Proper responses to sewer backups can potentially minimize the loss and maintain customer relations. These procedures are designed to help you protect yourself, assist the customer and protect the assets and reputation of the District/Municipality.

District/Municipality should designate a primary contact person or persons that have been trained to properly assist the customer with their unique situation. When District/Municipal personnel are contacted either by phone or in person it is recommended that you follow the below referenced steps:

Office Representatives:

- Remember that the primary goal of the initial conversation is to gather all pertinent and factual information about the event while helping the customer by showing professionalism and empathy.
- Record all information on an Incident Log.
- Provide your name and position.
- Be concerned, courteous and compassionate.
- Secure the:
 - Location address,
 - Person calling,
 - Phone Number, date & time,
 - Scope of the problem and description.
- Do not admit or insinuate fault or responsibility.
- Do not promise to pay, repair or hire outside assistance.
- Recommend that they contact their insurance company immediately to arrange for the initial cleanup. Their insurer should be able to recommend a professional cleaning service. The District/Municipality should not make recommendations.
- Recommend to the caller that they should take proper precautions to minimize the loss.
- Indicate that crews will be out quickly to determine the cause (provide an estimated response time for site inspection).
- Contact the District/Municipal insurer (send claim report as soon as possible).
- Notify any local, state or federal agency as needed or required.

Exhibit 4.1

Field Representatives:

The actions taken by field representatives will vary depending on the scope of the event, availability of equipment and the specific facts of the situation.

- Meet the customer and discuss with them that the purpose of the visit is to determine the cause of the loss.
- Remain professional, calm, concerned, courteous and compassionate.
- Document all aspects of the visit. Field Staff should be provided with an Incident Report Form (see sample form):
 - Who you met with Name and Number.
 - What was said to you and by whom.
 - What you said and to whom.
 - Take pictures of the site.
 - Document findings of causation.
- Do not indicate any fault or promise to repair or clean. You can provide contact information for the District/Municipal insurer and advise that they will investigate and make a final decision regarding responsibility based on the facts.
- Recommend that they contact their insurer to mitigate losses.



WHAT TO DO IF THERE IS A SEWER BACKUP Working with the Property Owner

The primary goal of the initial discussion is to gather facts, determine scope of risks and mitigate loss. Your dedication to customer satisfaction can help protect the District/Municipality. Please remember that every backup is unique and will require different responses but the universal principals below can assist you and the customer in all situations.

Remember, you are representing the District/Municipality . . .

DO

- Be courteous
- Be compassionate
- Be concerned
- Be consistent (fair)

DO NOT

- Admit fault or liability
- Say: "We'll take care of this."
- Promise to pay
- Hire someone to clean
- Work on private lines or property.

Write Down (Refer to Incident Form)

- Who you spoke with
- Time and Date of report
- What happened
- What was said by you and to you
- Extent of observed injuries or damage

Physical Evidence

- Preserve all physical evidence (photos can be helpful)
- Document items impacted by backup

Contacts

- City employee must report sewer backups/incidents to:

- If property owner believes city is responsible they should contact:

Exhibit 4.2



WHAT TO DO IF THERE IS A SEWER BACKUP Working with the Property Owner

Litigation STOPS direct communication . . .

If a property owner is suing the city:

- Accept service of summons and complaint
 - Immediately forward a copy of summons and complaint to:
 - District/Municipality Risk Manager - Insurance Representative
 - District/Municipality Attorney
 - Claims Department – MMA Risk Management Services
 - Attorney defending District/Municipality will contact plaintiff or plaintiff's attorney
 - All contact concerning lawsuits should be made through attorney
-

WHAT TO DO IF THERE IS A SEWER BACKUP Working with the Property Owner

Examples of what you might say . . .

- I can see that you are upset. I know that if this happened to me I would probably be upset too.
- I can certainly understand why you might feel the way you do.
- This has probably been an upsetting experience for you, hasn't it?
- I can certainly sympathize with your situation.
- I can see how frustrating this has been for you.



Incident Report Form

Incident Date: _____ Incident Time: _____

Customer Name: _____

Address of Event: _____

Contact Numbers: _____

Witnesses Name & Numbers: _____

Prepared By: _____ Date & Time: _____

Incident Description:

What was said to you and by whom?

What was said by you and to whom?

Findings & Follow-up Actions:

Manhole Inspection Form Completed? Yes No

Understanding Sewer Backups: Customer Information

A sewer line backup can be a stressful experience and we want to provide you with some information and tools to assist you during this difficult time. In the event of a sewer backup it is particularly important to know who to call and what to do. The District/Municipality is here to assist you, and is open Monday through Friday, 8 a.m. to 4 p.m. We can be reached by calling (207) --- ---- during regular operating hours. AFTER normal business hours, on weekends, or holidays, you may call the After Hours Emergencies number at (207)----- to report a problem. Please note that Sewer backups have a variety of causes, which is why it is critical for the impacted party to immediately notify the District/Municipality of the backup so that an investigation can be performed on each backup to attempt to determine the cause. This determination will help the District's/Municipality's insurer establish if the homeowner will be offered compensation for damages and cleanup costs. It is important to understand that sewer line mains are the responsibility of the District/Municipality to maintain and repair. The Lateral Line (connection from the private property to the sewer main) and all service line from the main to the home is the responsibility of the property owner. Any sewer line backup or clog from the sewer main to the house will be the responsibility of the property owner. The District/Municipality cannot repair a break or clog if it is on the homeowner side.

In the event of a sewer backup, the homeowner has a duty to protect their property, regardless of the cause of the backup or who pays for it. The homeowner must take reasonable steps to minimize further damage.

The following are some suggested/recommended steps to assist you in the event of a backup:

- (1) Contact the District/Municipality to report a sewer backup.
- (2) You may also wish to contact your homeowner's insurance agent for guidance on submitting a claim to your insurer.
- (3) Take photographs of the backup, both prior to and after the water and sewage are removed.
- (4) All water and sewage should be immediately removed from the basement.
- (5) Remove all wet rugs, clothes, boxes, and other items from the basement area.
- (6) Take pictures and document any damaged property.
- (7) If the water was high enough to involve a motor on a furnace, or electrical appliance, you may want to contact a reputable repair service to remove the motor and have it dried.
- (8) Document any actions you take (calls, contacts, costs) in response to the sewer backup.

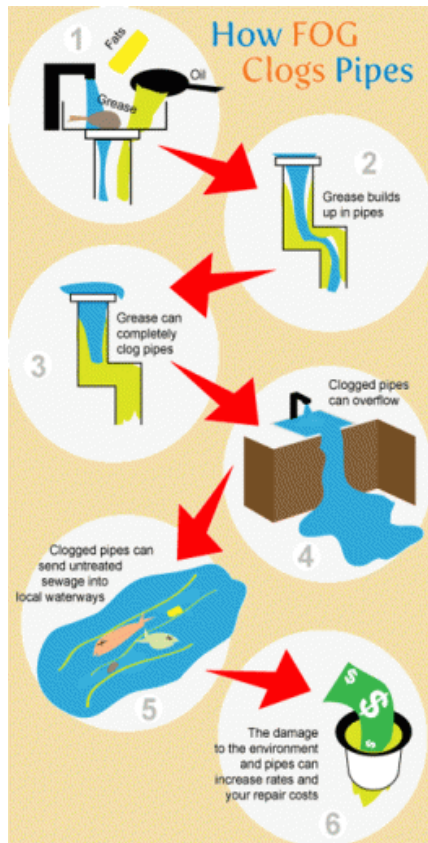
PLEASE NOTE: The above suggestions are meant to assist in the event of a sewer backup, and are not an admission of liability or a commitment to reimburse the homeowner for any costs incurred.

How Fat Oil Grease (FOG) Clogs Pipes

Fats, Oils, and Grease (FOG), combined with tree roots in the sewer system, can create massive, cement-like clogs which cause a great number of sewer backups and overflows. When put down the kitchen drain, FOG causes sewer problems that can result in:

- Damage to homes and businesses
- Health and environmental hazards (“Sewer overflows in the street can work their way into storm drains, which go directly to our creeks and streams”)
- Costly repairs
- Increased maintenance for cleaning up messes and replacing pipes

How does FOG create sewer backups and overflows?



Just as fat accumulates and causes blockages in human arteries, oil and grease solidifies and accumulates in household pipes, restricting the flow of wastewater and causing sewer backups and overflows. When poured down the kitchen drain, FOG cools, turns solid, and floats to the top of other liquid in sewer pipes. The FOG layer sticks to the sewer pipes and, over time, blocks sewage flow. It can then cause a sewer backup or overflow.

How it starts: Fats, oils, and grease (FOG) separates from other liquids as it goes down your drain. The FOG cools and sticks to household pipes, commercial pipes and sewer pipes.

A matter of time: Over time, pipes become clogged and sewage flow becomes restricted.

Nowhere to go but back: The clogged pipe eventually backs up and floods your home with wastewater. Or it causes it to overflow onto the street.

A threat to the environment: The untreated wastewater can then flow to local waterways, potentially harming the environment.

The cost to ratepayers: Not only is FOG costly to the environment, it can also be costly to ratepayers, as the expense of repairing clogged pipes may ultimately impact customers’ monthly rates.

What you can do:

Together if we take these steps at home and at work, we can prevent FOG from entering our sewers.

- Never pour Fats, Oils, or Grease down drains or flush down toilets.
- When cooking collect Fats, Oils, or Grease and dispose of them properly in the trash.
- Dispose of food waste by composting or by solid waste removal rather than using a sink disposal system.
- Restaurants and food preparation establishments may wish to contact rendering companies who purchase Fats, Oils or Grease to be used in soaps, fertilizers and feed.

Exhibit 4.5

WHAT NOT TO FLUSH



WET WIPES & PAPER TOWELS

Wipes and paper towels are difficult to breakdown and do not disintegrate like toilet paper which clogs our systems.



MEDICATIONS

Help prevent pollution of water sources by the proper disposal of medications



PERSONAL HYGIENE ITEMS

These items do not breakdown and may buildup in lines causing a costly backup. Please dispose of these items properly in the trash.

FATS, OILS & GREASE

Cooking by-products such as oils and grease from fried food can congeal inside pipes and cause a sewage backup.



PAINTS & CLEANING PRODUCTS

These items may contain harmful chemicals and toxic ingredients which can be harmful to our water. Please take these items to a hazardous waste location.



FOOD WASTE

Place food waste in the trash to avoid a clog.



It's a Toilet, Not a Trash Can!

Never flush the following items (or put down the garbage disposal or drain). Toss them in the trash instead.

- Baby/Facial/Cleaning Wipes
- Tampons
- Sanitary Napkins
- Medication
- Hair
- Dental Floss
- Cotton Swabs/Balls
- Bandages
- Rags and Towels
- Rubber Items (like latex gloves)
- Fat, Cooking Oil, Grease



- Clothing Labels
- Candy/Food Wrappers
- Syringes
- Cigarette Butts
- Disposable Toilet Brushes
- Kitty Litter
- Aquarium Gravel
- Plastic Items
- Diapers
- Fruit Stickers
- Paper Towels

Exhibit 4.7



Sample News Letter Article Topics

Purpose of a Wastewater Treatment Facility:

To provide the public service of wastewater treatment of raw wastewater. If raw wastewater were to be released directly into the environment without proper treatment the organic materials could cause rapid bacterial growth in our rivers and streams which can deplete oxygen levels and damage ecosystems. Raw wastewater also contains harmful pathogenic bacteria that can cause disease in humans.

How a Treatment Plant Works:

There are various types of treatment plants. Many treatment plants utilize biological principles that are naturally occurring. Bacteria is used in a controlled manner to biodegrade all of the wastewater organics such that no organic material will remain when the treated water is released back into the environment. Effluent is also disinfected to protect public health.

Challenges Facing Treatment Facilities:

As with many Treatment Facilities in Maine we are facing numerous challenges. These challenges include:

- Aging infrastructure that can be over 100 years of age.
- Increase in usage and an under develop facility.
- Improper waste being flushed into our system including wet wipes, diapers, chemicals, medications and more.
- Federal and State Environmental compliance.

Customer Education:

Sewer backups have a variety of causes, which is why it is critical for the impacted party to immediately notify the District/Municipality of the backup so that an investigation can be perform on each backup to attempt to determine the cause. This determination will help the District's/Municipality's insurer establish if the customer will be offered compensation for damages and cleanup costs. It is important to understand that sewer line mains are the responsibility of the District/Municipality to maintain and repair. The Lateral Line (connection from the private property to the sewer main) and all service line from the main to the customer is the responsibility of the property owner. Any sewer line backup or clog from the sewer main to the house will be the responsibility of the property owner. The District/Municipality cannot repair a break or clog if it is on the customer's side.

Plant & System Upgrades:

- Line repairs
- Cleanings
- Raising of Manholes
- Catch-Basin replacements,
- Computer Upgrades etc....

Community Outreach:

- Education for the Public
- Facility tours
- Environmental impact

Exhibit 4.8



Available Resources

Maine Statutes Regarding Line Maintenance

- Title 30-A: Section 3403 Proper maintenance of drains required:
<http://www.mainelegislature.org/legis/statutes/30-A/title30-Asec3403.html>
- Title 38: Waters and Navigation Section 361-A, subsection 3-D:
<http://legislature.maine.gov/legis/statutes/38/title38sec361-A.html>
- Section 414-D: Municipal Satellite Collection Systems
http://www.maine.gov/dep/water/wd/municipal_industrial/index.html

Environmental Protection Agency (EPA) Resources:

- Resource regarding Operations and Maintenance:
<https://www3.epa.gov/region1/sso/toolbox.html>
- Resource regarding force main sewer:
https://www3.epa.gov/npdes/pubs/force_main_sewers.pdf
- Resource regarding Sewer-lift stations:
https://www3.epa.gov/npdes/pubs/sewers-lift_station.pdf
- Creating Resilient Water Utilities (CRWU):
<https://www.epa.gov/crwu>

State of Maine Department of Environmental Protection (DEP) Water Quality Manager Resources:

- Municipal Satellite Systems:
General Page:
http://www.maine.gov/dep/water/wd/municipal_industrial/index.html
Registration Form:
http://www.maine.gov/dep/water/wd/municipal_industrial/mscs-registration5-25-18.pdf
Report Form:
http://www.maine.gov/dep/water/wd/municipal_industrial/mscs-ud-report.pdf



New England Interstate Water Pollution Control Commission:

- Wastewater page:
<http://neiwpc.org/our-programs/wastewater/>
- Collection System information on Fats, Oils, and Grease; Optimizing Operation, Maintenance OM&R Manual; Capacity, Management, Operation and Maintenance (CMOM):
<http://neiwpc.org/our-programs/wastewater/collection-systems/>
- Storm Resiliency - Preparing for Extreme Weather at Wastewater Utilities (September 2016):
<http://neiwpc.org/our-programs/climate-change/preparing-extreme-weather-wastewater-utilities/>

Other Resources:

- Maine Water Environment Association (MeWEA) promotes training opportunities for the water environment community and promotes public education to protect and enhance Maine's water resources:
<https://www.mewea.org/>
- Joint Environmental Training Coordinator Committee (JETCC) coordinates training that meets the needs of environmental professional throughout the State of Maine:
<http://jetcc.org/index.php>
- North East Biosolids & Residuals Association (NEBRA) membership includes professionals who manage most of the North East regions biosolids:
<https://www.nebiosolids.org/>

