

# **Sewer Toolkit:**

A guide for sanitary sewer  
maintenance policies and  
procedures



# Acknowledgements

A special thanks to the following for their collaborative efforts in developing this document:

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## Introduction

This Sewer Toolkit was developed by the Florida Rural Water Association (FRWA) with two goals in mind: (1) to help cities avoid sanitary sewer backups through improved system maintenance; and (2) to assist cities in limiting their liability through improved documentation when a sewer backup does occur.

Frequently, the history and information about a city's sanitary sewer system are stored in a long-term employee's brain and not written down anywhere. The Sewer Toolkit will help your city put this information where it belongs – in a comprehensive sanitary sewer maintenance program.

The toolkit is made up of four sections:

### Tab I - Models

The system assessment will guide your city through the first step in developing a comprehensive maintenance program: identifying and documenting the components of the system. A number of guides and model policies provide information necessary for the city to develop sewer maintenance and emergency response policies. These policies will help the city clearly explain what it does and why it does it.

### Tab II – Forms

The actions the city takes when conducting system maintenance or responding to a report of a sewer backup should always be documented. Good documentation can be an effective method of limiting liability – it can prove the city is following established policies. In addition, documentation is a great internal management tool for tracking who did what and when.

### Tab III - Public Education

Property owners within the city play a key role in preventing sanitary sewer backups. Public education pieces including sample newsletter articles, utility billing stuffers and suggested web content have been developed for your city's use. These items inform property owners of their responsibilities when using the city's sewer system as well as what they should do in the event of a sewer backup.

### Tab IV - Other Resources

Other information cities should consider when developing a comprehensive sewer maintenance program.

For more information about the Sewer Toolkit contact Troy Hamberger, FRWA Wastewater Trainer, at 850-668-2746 or 800-872-8207 or [troy.hamberger@frwa.net](mailto:troy.hamberger@frwa.net).

# **SANITARY SEWER SYSTEM ASSESSMENT**

## **What is this tool?**

The Sanitary Sewer System Assessment is a form that helps your utility identify and document all of the components in your utility's sanitary sewer system. It can also serve as a record of the established programs and practices related to that system.

## **Why should you complete it?**

Completing the system assessment provides the utility with comprehensive, up to date information on its municipal sanitary sewer system. It is very difficult to effectively operate and maintain your sanitary sewer system if you have no information about the components of that system. Too frequently, the history and information about a utility's sanitary sewer system are stored in an employee's brain and not written down anywhere. The greatest benefit to completing this tool will be having up to date information about all aspects of the utility's sanitary sewer system in one place available for anyone needing that information.

Utilities that do the assessment will be a step ahead when Capacity, Management, Operation, and Maintenance (CMOM) rules eventually become law. CMOM refers to rules that were proposed by the Environmental Protection Agency regulating municipal wastewater systems. They are part of a larger EPA program to eliminate the environmental effects of sanitary sewer overflows. The proposed CMOM rules expand the duties of owners/operators of municipal wastewater collection systems. Utilities that have system documentation in place prior to adoption of the proposed CMOM rules will find complying with the deadlines in the rules less burdensome.

## **Who should complete this document?**

This document should be completed by the employee(s) or contractor who is most familiar with the utility's sanitary sewer system. It should be completed in the manner that is most effective and efficient for your utility. One person could complete the entire assessment document over time, the various sections could be given to different employees and then compiled upon completion, or perhaps this would be an appropriate assignment for an intern in the public works or wastewater area.

## **What do we do with it after it's completed?**

Use it! Keep the assessment and use it as a reference tool for your utility's sanitary sewer system policies and practices. Remember, like any other policy, this is a living document and should be reviewed and updated periodically.

# GENERAL INFORMATION

CHECKLIST COMPLETED BY:  UTILITY STAFF     CONTRACTOR/VENDOR

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contact Information

<b>UTILITY CONTACT INFORMATION</b>	
Utility Name _____	
<p><b>MAILING ADDRESS</b></p> <p>_____ Street Address</p> <p>_____ Street Address (continued)</p> <p>_____ City                      State              Zip</p>	<p><b>CONTACT INFORMATION</b></p> <p>_____ Name</p> <p>_____ Title</p> <p>_____ Email</p> <p>_____ Phone                                      Fax</p>

<b>PERMITTED TREATMENT AND COLLECTION FACILITIES</b>				
NPDES or State Permit #	Permittee/Jurisdictions	Check Which Utilities Have Permit Coverage		
		WWTP Effluent	Collection System	Wet Weather Facility

## **GENERAL INFORMATION**

What category is the system of facility? (*circle one*) **I II III IV**

What class is the system or facility? (*circle one*) **A B C D**

Does appropriate person/staff have proper wastewater operating license(s) as required by the Florida Department of Environmental Protection? (*See below*)  
**YES NO**

Which type of license(s) does the operator(s) hold? (*Circle all that apply*)

**Wastewater A B C D**

**Water A B C D**

**Class A License:** Operator must have an active Class B license of the same type, document at least 5 years of appropriate experience (10,400 hours), and obtain a passing score on the Class A license exam.

**Class B License:** Operator must have an active Class C license of the same type, document at least 3 years of appropriate experience (6,240 hours), and obtain a passing score on the Class B license exam.

**Class C License:** Operator must have a high school diploma or its equivalent, document at least 1 year of appropriate experience (2,080 hours), and obtain a passing score on the Class C license exam.

**Class D License:** Operator must have a high school diploma or equivalent, and have at least three months appropriate experience; or document successful completion of an appropriate training course and have one hour of experience under a licensed operator.

## COLLECTION SYSTEM DESCRIPTION

### SYSTEM INVENTORY

Does the utility have a treatment facility? <input type="checkbox"/> Yes <input type="checkbox"/> No				
If no, where does the raw wastewater go?				
<b>TREATMENT FACILITIES</b>			<b>COLLECTION FACILITIES</b>	
No. of Treatment Facilities		Average Daily Flow (MGD)		
Design Capacity (MGD)		Average Dry Weather Flow (MGD)		
		Average Wet Weather Flow (MGD)		
<b>ACCESS &amp; MAINTENANCE</b>	<b>CONVEYANCE &amp; PUMPING</b>			
		Gravity Sewers (Feet)	Force Mains (Feet)	Pump Stations (Number)
No. of Manholes		<b>Pipes &amp; Pumps</b> Total length/quantity		
No. of Backflow Prevention Devices	<b>Age of System</b>			
		0-25 years old		
		26-50 years old		
		51-75 years old		
		> 76 years old		

### SERVICE AREA CHARACTERISTICS

		<b>Number of Service Connections</b>		
Service Area (sq. miles)		Residential (Number)	Non-Residential (Number)	Total (Number)
Service Population (no. of people)				
Annual Precipitation (inches)				
At what point in the system is the utility responsible for maintenance and repair related to the service laterals? (check one)				
<input type="checkbox"/> At main connection only		<input type="checkbox"/> At the building		
<input type="checkbox"/> At the property line or easement		<input type="checkbox"/> Other: _____		
<b>Combine Sewer Systems</b>				
Is there any part of the system served by combined sewers (i.e., sanitary sewage and storm water in the same pipe)? <input type="checkbox"/> yes <input type="checkbox"/> no				

The service lateral is constructed by the private owner for sewer service to a private property.  
The service lateral is the extension that connects a private sewer to a utility sewer.



## COLLECTION SYSTEM DESCRIPTION

Note the number of feet of the following kinds of pipe in the utility's sanitary sewer system.

<b>PIPE SIZE</b>			
<b>Gravity Sewers</b>		<b>Force Mains</b>	
Pipe Diameter	Length (feet)	Pipe Diameter	Length (feet)
8 inches or less		2 inches or less	
> 8-12 inches		> 2-4 inches	
>12-20 inches		> 4-6 inches	
> 20 inches		> 6-8 inches	
		Other	

<b>PIPE MATERIAL</b>			
<b>Gravity Sewers</b>		<b>Force Mains</b>	
	Length (feet)		Length (feet)
Vitrified Clay Pipe (VCP)		Ductile Iron (DIP)	
Polyvinyl Chloride (PVC)		Polyvinyl Chloride (PVC)	
High Density Polyethylene (HDPE)		High Density Polyethylene (HDPE)	
Reinforced Concrete Pipe (RCP)		Asbestos Cement (AC)	
Pre-stressed Concrete Cylinder Pipe (PCCP)		Other (Explain) _____ _____ _____	
Other (Explain) _____ _____ _____			

## LIFT STATIONS

Number of Lift Stations? \_\_\_\_\_

LS-1. Are standard operating procedures (SOPs) and standard maintenance Procedures (SMPs) used for each pump station?  Yes  No

Components of SOPs and SMPs include:

Easy availability of original manuals that contain the manufacturers recommended maintenance schedules for all lift station equipment

- Operating procedures for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows
- Setting wet well operating levels to limit pump start/stops
- Cleaning wet well
- Calibrating flow meters or conducting draw down tests
- Regular rotation of lead, lag, and backup pumps
- Maintenance of operation logs and general records for all lift station activities, including inspections
- Clean force mains
- Identify problem areas/components

LS-2. Does the utility record the number of lift stations, their location, date of installation, and capacity of each pump station?  Yes  No

LS-3. What type of alarm system(s) does the lift station(s) have?

Telemetered...How many? \_\_\_\_\_  Audiovisual only...How many? \_\_\_\_\_

LS-4 Is the alarm system monitored 24 hours per day?

LS-5 Is there a 24 hour notification of alarms?

LS-6 Who manufactured the alarm?

LS-7 Which of the following does the utility use when loss of power occurs?

- |  |  |
|--|--|
| <input type="checkbox"/> On-site electrical generators | <input type="checkbox"/> Portable electric generators          |
| <input type="checkbox"/> Portable bypass pump          | <input type="checkbox"/> Vacuum trucks to bypass pump stations |
| <input type="checkbox"/> Alternate power source        | <input type="checkbox"/> Other                                 |

## LIFT STATIONS

The following assessment can be used to identify the utility's lift stations and how often the alarm systems are monitored. This checklist recognizes that some communities might have a large number of grinder pumps. If this is the case, you could group the number of grinder pumps together and list their monitoring frequency as a whole (e.g. grinder pumps 1-37 are monitored quarterly).

<b>ALARM SYSTEMS</b>	
<b>Lift Station</b>	<b>Monitoring Frequency</b>
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____
Name _____ Location _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input type="checkbox"/> Other ( <i>explain</i> ) _____

## SEWER CLEANING

CLN-1 Does the utility have a written schedule in place for routine inspecting/cleaning of the system? Yes No

CLN-2 Does the utility have a documented inspection and cleaning program of problem areas? Yes No

CLN-3 Does the utility have a documented root control program? Yes No

CLN-4 Does the utility have a documented fats, oils, and grease (FOG) program? (FOG usually comes from food service or production industries, but may stem from residential homes and/or other businesses.) Yes No

CLN-5 Are stoppages plotted on maps and correlated with other data such as pipe size and material or location? Yes No

CLN-6 Does the utility televise private lines? Yes No

CLN-7 When does the utility televise the lines? *(Check all that apply.)*

- Before cleaning
- After a claim has been made
- After cleaning
- During weather event
- On a regular schedule
- After weather event
- When pipe is identified as having a backup, having a history of backups, or other possible problem identified during routine maintenance

CLN-8 Which of the following is included in the sewer cleaning records? *(Check all that apply.)*

- Manhole inspection
- Method of cleaning
- Identity of cleaning crew
- Date and time
- Public line
- Materials removed from line
- Cause of Stoppage
- Private line
- Further action necessary/initiated
- Location of stoppage or routine cleaning activity

CLN-9 Does the utility contract (vendor, contractor, other utility) for sewer cleaning? Yes No

CLN-10 What services are contracted? \_\_\_\_\_

CLN-11 Does the contractor televise the lines before and after cleaning? Yes No

CLN-12 Does the utility receive a copy of the video and a written report summarizing findings and observations before and after lines are cleaned? Yes No

## RECORD KEEPING

For purposes of this checklist, the term “backup” is defined as an overflow or accumulation in the system due to a stoppage, malfunction, etc. The term “bypass” is defined as the removal of sanitary sewage or storm water within the system for purposes of placing elsewhere.

RK-1 Does the utility have a record keeping system in place for tracking maintenance activities? (*Either electronic or good paper files.*) Yes No

RK-2 Are records maintained for a minimum of at least five years or in accordance with utility policies (ask utility attorney)? Yes No

RK-3 Does the utility keep track of all backup events? Yes No

RK-4 Which of the following have a program management tracking system in place? (*check all that apply.*)

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Work orders           | <input type="checkbox"/> Scheduled inspections | <input type="checkbox"/> Equipment/tool tracking       |
| <input type="checkbox"/> Public Education      | <input type="checkbox"/> Safety Incidents      | <input type="checkbox"/> Standard operating procedures |
| <input type="checkbox"/> Scheduled Maintenance | <input type="checkbox"/> Public backups        | <input type="checkbox"/> Scheduled monitoring/sampling |
| <input type="checkbox"/> Private backups       | <input type="checkbox"/> Parts inventory       | <input type="checkbox"/> Compliance/overflow tracking  |

RK-5 How often are your records updated? (*check one.*)

- |  |  |
|--|--|
| <input type="checkbox"/> Immediately (within one business day) | <input type="checkbox"/> Within one week of the “incident” |
| <input type="checkbox"/> Monthly                               | <input type="checkbox"/> As time permits                   |

## NEW SYSTEM CONSTRUCTION

NSC-1 Are construction sites inspected by qualified personnel to ensure construction is taking place in accordance with plans and specs? Yes No

NSC-2 Are new lines televised prior to being hooked into utility systems? Yes No

NSC-3 Are the televised records retained for a minimum of 5 years or in accordance with utility policies (ask utility attorney)? Yes No

## OVERFLOW EMERGENCY RESPONSE PLAN

Components of an OERP include:

- A detailed description of specific responsibilities for personnel who respond to emergencies
- Ongoing training and drills for staff who respond to emergency situations
- Prompt access for work crews to tools and equipment during emergencies
- Standard procedures for notifying state agencies, duty officers, local health departments, the NPDES authority, the public, and drinking water authorities of overflow events
- A public notification plan
- Procedures to limit public access to and contact with areas affected with SSOs (*Procedures can be delegated to another authority.*)
- Containment techniques to protect the storm drainage systems

OERP-1 Does the utility have a documented OERP available for utility staff to use?

Yes No

OERP-2 Is the OERP reviewed and updated at least once a year? Yes No

OERP-3 Does the utility keep track of the names, titles, phone numbers, and responsibilities of all personnel involved in emergency response? Yes No

OERP-4 Are hazardous materials or petroleum spills reported to the State Warning Point (1-800-320-0519 in a timely manner? Yes No

OERP-5 What information is included in the utility's overflow records? (*Check all that apply.*)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Date and time               | <input type="checkbox"/> Location           | <input type="checkbox"/> Any corrective efforts/actions         |
| <input type="checkbox"/> Cause(s)                    | <input type="checkbox"/> How it was stopped | <input type="checkbox"/> Estimated flow/volume discharged       |
| <input type="checkbox"/> Weather/rainfall            | <input type="checkbox"/> Duration of flow   | <input type="checkbox"/> Name(s) of employee(s) responding      |
| <input type="checkbox"/> Overflow treatment provided |   | <input type="checkbox"/> Name(s) of affected receiving water(s) |

## SAFETY

SAF-1 Does the utility/city have an active safety program (i.e., safety committee, regular safety meetings, safety training programs, records of employee safety training)? Yes No

SAF-2 Does the utility have a written safety policy that is reviewed and/or revised at least once a year? Yes No

SAF-3 Does the utility have written safety procedures for the following? (check all that apply)

	Y	N	N/A		Y	N	N/A
Lockout/tagout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Biological hazards in wastewater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Material safety data sheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Traffic control and work site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chemical handling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electrical and mechanical systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confined space entry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pneumatic and hydraulic systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trenching and excavations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

SAF-4 Are the following equipment items available and in adequate supply?

	Y	N	N/A		Y	N	N/A
Atmospheric testing equipment and gas detectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Portable crane/hoist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Respirators and/or self contained breathing apparatus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire extinguishers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Full body harness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Protective clothing (PPE)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Confined space ventilation equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Traffic/public access control equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tripods or non-entry rescue equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fiberglass or aluminum ladders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5-minute escape breathing devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Antibacterial soap and first aid kit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## SYSTEM MAPPING

- |  | <b>Yes</b>               | <b>No</b>                |
|--|--------------------------|--------------------------|
| MAP-1 Are "as built" plans (record drawings) or maps available for use in the office and in the field?                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| MAP-2 Is there a procedure to record changes or inaccuracies in the maps and update the mapping system?                                    | <input type="checkbox"/> | <input type="checkbox"/> |
| MAP-3 Do the maps show the date the map was drafted and the date of the last revision?   | <input type="checkbox"/> | <input type="checkbox"/> |
| MAP-4 Is there a numbering and identification method established to identify manholes, sewer lines, and other items (pump stations, etc.)? | <input type="checkbox"/> | <input type="checkbox"/> |

MAP-5 Do you require new "as built" plans to include the following? (This recognizes that older as-built plans may not have the following components.) (*Check all that apply.*)

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> Scale   | <input type="checkbox"/> Street names                  | <input type="checkbox"/> Slope             |
| <input type="checkbox"/> North arrow   | <input type="checkbox"/> Flow monitor location         | <input type="checkbox"/> Pipe diameter     |
| <input type="checkbox"/> Date the map was drafted  | <input type="checkbox"/> Force mains                   | <input type="checkbox"/> Installation date |
| <input type="checkbox"/> Date of last revision   | <input type="checkbox"/> Pump stations                 | <input type="checkbox"/> Age of manhole    |
| <input type="checkbox"/> Service area boundaries   | <input type="checkbox"/> Lined sewers                  | <input type="checkbox"/> Manhole depth     |
| <input type="checkbox"/> Property lines  | <input type="checkbox"/> Main, trunk, and interceptor  | <input type="checkbox"/> Manhole material  |
| <input type="checkbox"/> Manhole coordinates sewers  | <input type="checkbox"/> Easement lines and dimensions |  |
| <input type="checkbox"/> Pipe material points  | <input type="checkbox"/> Distance between manholes     |  |
| <input type="checkbox"/> Condition of pipe   | <input type="checkbox"/> Location of building laterals |  |
| <input type="checkbox"/> Separate/combined sewer   | <input type="checkbox"/> Manhole and other access      |  |
| <input type="checkbox"/> Other landmarks (roads, Manhole inverts/drops water bodies, etc.) |  |  |



## **SANITARY SEWER MAINTENANCE POLICY CONSIDERATIONS**

*Policies for maintenance activities help plan for use of the Utility's resources, establish priorities for this type of work, and provide an explanation as to how the Utility performed the maintenance. This is particularly true for sanitary sewer system maintenance. Having and following a written policy is very helpful in defending claims.*

### **Take action**

Generally, courts have held that in order to be responsible for the damages from a sanitary sewer backup, the Utility must be found negligent. To prove negligence, it must be shown that there was a defect that caused or contributed to a backup in the Utility's sanitary sewer system, the Utility had notice of the defect, and the Utility failed to correct it within a reasonable time. Notice may be actual (i.e., a resident calling the Utility to report a problem) or constructive. Constructive notice is when the Utility should have known of the existing problem.

On occasion, a utility uses the practice of "no sanitary sewer system maintenance whatsoever" as a defense. The rationale behind this behavior is explained as follows: *"If the Utility doesn't know about the problem, the Utility doesn't have to take any action to correct it. Therefore, if a sewer backup occurs my Utility won't be found negligent because we didn't know about the issue in the first place."*

It is not safe to assume that complete lack of action will put the Utility in a defensible position if issues crop up with the sanitary sewer system. The Utility will be liable if it was negligent and it will be considered negligent if the Utility's actions weren't reasonable. Unfortunately, no "standard of reasonableness" exists in state law, federal law or case law.

One method of establishing the "standard of reasonableness" in a Utility is to periodically survey neighboring or similar utilities and find the timeline on which they maintain sanitary sewer mains. If your Utility has a maintenance schedule similar to those of utilities in your area, you would likely be considered reasonable for purposes of sanitary sewer maintenance.

### **Develop a policy (not an ordinance)**

Ordinances have the purpose of regulating people or property. They have the force and effect of law and provide a penalty if violated. Not following an ordinance is in essence breaking the law.

When considering the utility's sanitary sewer system, an ordinance should be used to establish requirements related to the public's use of that system. It would likely address the use of sump pumps, connections from private property to the public system, wastes that property owners are prohibited from putting into the system, etc.

A policy is a document typically used by a utility to establish directives and guidelines for employees. Policies may be effectively used to guide many activities at the utility, such as personnel management, street sweeping or snow plowing. Because policies are easier to update and can be more flexible and less arbitrary as to how and when things get accomplished, policies are preferred over ordinances for managing utility programs and procedures.

When considering a municipal sanitary sewer system, a policy should be used to define how the utility intends to use employees and equipment to maintain its municipal sanitary sewer system. This might include annual cleaning of sewer mains, inspection of problem areas in the system, etc.

A policy can help the Utility explain what it does and why it does it. It can also be used to support a finding that the Utility exercised reasonable care. As explained earlier, courts have generally held that in order to be responsible for the damages from a sanitary sewer backup, the Utility must be found negligent. To prove negligence, it must be shown that there was a defect that caused or contributed to a backup in the Utility's sanitary sewer system, the Utility had notice of the defect, and the Utility failed to correct it within a reasonable time.

### **Write the policy down**

A written policy is important because it provides the Utility with a consistent and documented method of performing system maintenance. It provides guidance on how to carry out maintenance activities, identifies equipment needed for the level of maintenance established by the policy, and assists in long-term planning for employees and equipment.

When developing policy language, the Utility should involve those employees who actually do the work. Be sure the timelines and expectations established in the policy are reasonable from both a budget and workload perspective. A policy is not going to be of value to the Utility if it cannot generally be followed as written.

### **Request Council action**

A utility council may review the sewer maintenance policy and make a motion to adopt it; or the council may make a motion delegating authority for development of such a policy to an employee. The council may or may not wish to review the final policy for comment and adoption. The practice differs from city to city and from entity to entity. The important thing to note is that documented action on the part of the council related to the sanitary sewer maintenance policy will help support that the policy was a discretionary decision.

### **Review the policy**

Like any policy, this should be considered a "living document" and should be reviewed periodically to determine if it needs to be changed. If the goals established in the policy go unmet on a repeated basis, the Utility should consider reevaluating and perhaps adjusting those goals. The employees who perform sanitary sewer maintenance should be consulted when reviewing the policy to ensure that the policy is workable as written.

### **Share the policy**

The provisions of the policy should be communicated to all stakeholders at the Utility. Public works employees and others responsible for carrying out or answering calls about the terms of the policy need to know what it says.

The Utility may benefit by making citizens aware of the policy through newsletters, newspapers, utility bill stuffers, web site, etc. By publicizing the policy, the Utility is making a good faith effort to educate citizens so they know what to expect in terms of level of service for sanitary sewer maintenance.

**Follow the policy**

It's not enough to have a well written policy. Policy makers and supervisors need to ensure that established policies are followed. Proper documentation of activities described in your policy (inspection dates and times, response to backups, etc.) helps the Utility prove that established policy is being followed.

# SANITARY SEWER MAINTENANCE POLICY OVERVIEW

*The following are components of a basic sanitary sewer maintenance policy:*

## 1. Purpose

The purpose of a sanitary sewer maintenance policy should include written intent to provide effective/efficient maintenance by evaluating political, social, safety, and economic concerns, among other things. The purpose may also state the procedures identified in the policy are intended to maintain the sanitary sewer system to prevent sewer backups. A policy, when implemented, may also extend the service life of various components of the sanitary sewer system.

To ensure flexibility within the policy, it is important to clarify that the timelines and procedures in this policy are goals. While the Utility should make a good faith effort to meet the guidelines in the policy, it is a good practice to note there may be times when procedures are not going to be completed within established timeframes. Perhaps include examples of circumstances that may prevent the Utility from meeting one or more goals stated in the policy – things like budget constraints, critical equipment failure, or weather and other emergencies.

The purpose should indicate who at the Utility has the authority to override provisions of this policy (e.g., public works director, utility superintendent, administrator, the Utility Council, etc.). Such exceptions to the policy should only occur on an infrequent and temporary basis. In the event that policy overrides are necessary on a recurring schedule, the Utility should re-evaluate the policy.

If the Utility does not intend to maintain the entire sanitary sewer system on its own, the policy should be used as a guide for the services to be provided by a contractor or another party.

## 2. Routine Maintenance and Inspection

This section of the policy should clearly define those parts of the sanitary sewer system for which the Utility is responsible and those parts of the sanitary sewer system for which another party (property owner, etc.) is responsible. Identify who is responsible for maintenance of sewer mains, connections, private sewer lines, etc.

It is important to develop a regular schedule of maintenance and inspection for your Utility's sanitary sewer system. When determining a schedule, remember that in the event of a sanitary sewer backup, the Utility will be liable if it was negligent and it will be considered negligent if the Utility's actions weren't reasonable. Unfortunately, no definition of "standard of reasonableness" exists in state law, federal law or case law.

One method of establishing the "standard of reasonableness" in a Utility is to periodically survey neighboring or similar utilities and find the timeline on which they maintain sanitary sewer mains. If your Utility has a maintenance schedule similar to those of utilities in your area, you would likely be considered reasonable for purposes of sanitary sewer maintenance.

Keep in mind that this method of establishing “reasonableness” addresses problem areas or special needs within a sanitary sewer system. If a Utility knows of sanitary sewer components that need more frequent servicing than provided for in the maintenance policy, it should act on that knowledge. Once the Utility has knowledge of a need for increased maintenance, it is unlikely to be considered reasonable if that need is ignored. However, in the shorter term the Utility might be protected by sovereign immunity if the Utility knows of a situation and clearly documents the factors weighed in determining not to act on a long-term solution immediately.

Some parts of the system will need more maintenance and other parts may need less maintenance than provided for in the routine maintenance schedule for most of the sanitary sewer system. One way to accomplish this is to use a map or schedule noting system components that receive ordinary routine maintenance on a fixed schedule as Category 1. System components needing less frequent maintenance could be Category 2 and those components needing more frequent maintenance could be Category 3.

When a sewer main or facility is identified as anything other than Category 1, the reasons why maintenance is needed on a different schedule should be documented. In addition, the policy should note who is responsible for assigning the appropriate maintenance categories to the various system components. Such determinations should be assessed periodically in the event that sewer mains and facilities need to be moved from one category to another.

Depending on Utility resources, the sanitary sewer maintenance schedule within the policy may include some, all or more than the following:

- Sanitary sewer collection system
- Clean sanitary sewer collection system with jetter
- Clean sanitary sewer collection system with rodder
- Attach proofer to show sanitary sewer collection systems are clear
- Inspect sanitary sewer collection systems by looking down manholes
- Televiser sanitary sewer collection systems
- Root removal in areas with many trees and root problems
- Document all activities
- Other (describe your Utility’s method of cleaning sanitary sewer mains)
- Identify problem areas/components
- Lift Stations
- Easy availability of original manuals with manufacturers’ recommended maintenance schedules for all lift station equipment
- Operating procedures for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows
- Setting wet well operating levels to limit pump start/stops
- Cleaning wet well
- Calibrating flow meters or conducting draw down tests
- Regular rotation of lead, lag, and backup pumps
- Regular inspections of lift station, alarm systems and electrical components
- Maintenance of operation logs and general records for all lift station activities, including inspections
- Clean force mains

- Force main valve exercising
- Identify problem areas/components

Maintenance schedules developed for the above sewer main and lift station activities should clearly note when and/or how often each activity will take place.

### 3. Problem Areas

- Have a system to designate problem components or areas (e.g. history of back-ups, known roots or grease, off-set in sanitary sewer main connection)
- Clearly define actions (Once a problem area is identified, what is done to address the issue and minimize the likelihood of future sanitary sewer backups?)
- Maintain those areas more often than the regular schedule
- Keep a list of problem areas and a process to indicate when an area may no longer be considered a problem
- Document all activities
- Identify likely sources of prohibited discharge (e.g., food processing plants, commercial and industrial, health care facilities, schools and daycares, and correctional facilities)

### 4. Personnel Responsibilities and Requirements

This section should identify the employee(s) the Utility wants to exercise discretion in decision making and define when and how the Utility wants them to do it. This will increase the odds that statutory sovereign immunity will apply to both the written policy and decisions made by employees when the written policy confers decision making authority to those employees.

Also use this section to clarify any personnel policy provisions that are specific to the responsibilities associated with maintenance and inspection of the sanitary sewer system.

Address employee training on routine maintenance, proper use of equipment, and emergency response procedures.

Many utilities establish general work hour requirements in personnel policies and/or union contracts. However, those utilities without documented work hour expectations may want to use this section to set forth expectations for employees who will be responsible for sanitary sewer maintenance. In doing so it is important to include language that allows the Utility to be flexible depending on circumstances. Be aware of wage and hour laws so provisions in this policy do not contradict state or federal law.

Note that routine sanitary sewer maintenance operations will only be conducted when weather conditions do not threaten the safety of employees or equipment.

## 5. Documentation

- Develop procedures that are flexible and realistic.
- Train employees on why records are important and how to complete appropriate records. Consider using model forms developed by FRWA.
- Keep records of all Utility actions regarding the inspection and maintenance activities, including: (1) daily logs of employees' actions, (2) scheduled maintenance activities, and (3) emergency response activities.
- Retain records for a minimum of five years or in accordance with utility policies (ask utility attorney).
- Retain records of televised mains for at least five years or in accordance with utility policies (ask utility attorney).

## 6. Other Documents

There are a number of other written documents important to the Utility's sanitary sewer system that should be developed separate from the Sanitary Sewer Maintenance Policy. These include, but are not limited to, the following:

- Emergency Response Policy
- Public Sanitary Sewer Use Ordinance
- System Rehabilitation Policy

# MODEL SANITARY SEWER MAINTENANCE POLICY

*This is a sample policy for guideline purposes only. Please consult your Utility attorney when developing your own policy.*

This model policy is intended to be used with the memos **Considerations for Sanitary Sewer Maintenance Policies** and **Overview of Sanitary Sewer Maintenance Policies**.

## 1. Purpose

It is the policy of the \_\_\_\_\_ Utility to comply with all applicable state and federal regulatory requirements.

The Utility intends to provide effective and efficient maintenance to its sanitary sewer system by evaluating political, social, safety, and economic concerns, among others. Procedures identified in this policy are intended to maintain the sanitary sewer system to prevent sewer backups. These procedures, when implemented, may also extend the service life of various components of the sanitary sewer system.

The Utility has \_\_\_\_\_ feet of public sanitary sewer mains, \_\_\_\_\_ manholes and \_\_\_\_\_ lift/pump stations within its sanitary sewer system. Procedures identified in this policy are intended to maintain the Utility's sanitary sewer system to prevent sewer backups and to extend the life of the system. The Utility has developed and implemented this policy that takes into consideration public safety, the Utility's budget and personnel, environmental concerns, and the cost of implementation versus the benefit to be achieved. The Utility will use its employees, equipment and/or private contractors to provide this service.

While the Utility fully intends to meet the guidelines established in this policy, there may be times when this is not feasible. Issues including, but not limited to, budget constraints, critical equipment failure, or weather and other emergencies may prevent the Utility from meeting the guidelines established herein. The \_\_\_\_\_ (*designate the appropriate authority*) may override provisions established within this policy. Deviations from the goals established in this policy will be documented.

The Utility will use this policy to guide any sanitary sewer maintenance activities to be provided by a contractor or a party other than the Utility.



## 2. Routine Maintenance and Inspection Goals

### Sanitary Sewer Mains

Scope of Utility's Responsibility - The Utility will maintain the components of the public sanitary sewer system. This includes sanitary sewer mains, manholes, lift stations, waste water treatment plants, and other components. Private property owners are responsible for the maintenance of sanitary sewer components from their property \_\_\_\_\_ (*examples: up to and including the connection to the public system; up to but excluding the connection to the public system, etc.*)

Schedule – The Utility's goal is to inspect and maintain the components of its sanitary sewer system according to the attached schedule.

Equipment – The equipment used to perform maintenance will depend upon the equipment available and its effectiveness as determined by qualified staff.

Television Inspection – The Utility's sanitary sewer mains will be inspected by television camera in accordance with the attached schedule. Any sewer mains located on a street where a street maintenance project is planned will be inspected before and after such a project. Sanitary sewer mains in a new development must be televised before said mains are turned over to the Utility. Television inspection may also be used to inspect the system where there are possible problems. In addition, the Utility may require any main near a construction site to be televised before and after the construction (i.e., near blasting, digging, other activities that might disrupt the main, etc.)

Visual recordings of sewer main televising will be required of any vendor performing this service for the Utility. A written report summarizing and interpreting the findings of the televising will also be required. These records will be kept by the Utility for a minimum of 12 years.

### Problem Areas

The sanitary sewer mains and facilities identified as Category 1 will receive ordinary routine maintenance as noted on sewer maps. The sanitary sewer mains and facilities identified on the sewer map as Category 2 will receive more frequent maintenance and those identified as Category 3 will receive less frequent maintenance. When a sewer main or facility is identified as anything other than Category 1, the reasons why maintenance is needed on a different schedule will be documented. Sewer mains and facilities will receive maintenance according to the attached schedule.

The \_\_\_\_\_ (*insert employee title: public works director, utility superintendent, team lead, etc.*) will determine whether a main or facility is Category 1, receiving routine sewer maintenance, Category 2, receiving more frequent maintenance or Category 3, receiving less frequent maintenance. Based on periodic assessment, maintenance will be adjusted and a sewer main may be moved from one category to another.

## **Sanitary Sewer Lift Stations**

The Utility maintains lift stations using specific maintenance that is reasonable and recommended. The number of lift stations, location, date of installation, and capacity of each lift station is kept on record. Maintenance for each lift station is reflected in Standard Operating Procedures (SOP) and Standard Maintenance Procedures (SMP).

Components of SOP and SMP include:

- Easy availability of original manuals with manufacturers' recommended maintenance schedules for all lift station equipment
- Operating procedures for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows
- Setting wet well operating levels to limit pump start/stops
- Cleaning wet well
- Calibrating flow meters or conducting draw down tests
- Regular rotation of lead, lag, and backup pumps
- Regular inspections of lift station, alarm systems and electrical components
- Maintenance of operation logs and general records for all lift station activities, including inspections
- Clean force mains
- Identify problem areas/components

### **3. Inflow and Infiltration**

Inflow and infiltration occur when clear water gets into the sanitary sewer system. This may occur through cracks or leaks in the sewer pipes and manholes or through sump pumps incorrectly connected to the sanitary sewer system. Inflow and infiltration can lead to backups, overflows and unnecessary and expensive treatment of clear water.

Utility employees will periodically inspect manholes to identify any that contribute to this problem. Sanitary sewer mains will be maintained and inspected pursuant to the Utility's Sanitary Sewer Maintenance Policy.

### **4. Personnel Responsibilities and Requirements**

#### **Exercise of Professional Judgment**

It is expected that Utility employees, in accordance with their job duties and responsibilities, will exercise their professional judgment in the implementation of this policy. Further, it is expected that in emergency situations (see Emergency Response Policy) Utility employees will be required to exercise their discretion and weigh political, social, and economic considerations including but not limited to public and employee safety, the potential for damage to private property and the Utility sanitary sewer system, and environmental concerns.

#### **Training and Education**

The Utility will provide training to employees responsible for maintenance of and emergency response to issues with the sanitary sewer system. Training of employees will include education necessary to earn and maintain appropriate operator certifications. Training will also address standard operating procedures, proper use of equipment, emergency response and other topics required by state and federal regulatory agencies.

### **Work Schedule**

Full-time Utility employees in the \_\_\_\_\_ (*insert name of department*) department will be expected to work eight-hour shifts. In emergencies, employees may be required to work in excess of eight hours. Budget and safety concerns may limit the length of time an employee is permitted to work.

### **Weather Conditions**

Regular sewer maintenance operations will be conducted only when weather conditions do not endanger the Utility employees and equipment. Factors that may delay sewer maintenance operations include, but are not limited to: severe cold, severe heat, flooding, rain, snow and other severe weather events.

## **5. Documentation**

The Utility will document all of its inspection and maintenance activities and emergency responses for its sanitary sewer system. The Utility will also document circumstances that limit its ability to comply with this policy. A report should be prepared periodically for the purpose of evaluating maintenance activities and for determining goals for the future. These records will be kept in accordance with the Utility's records retention schedule.

## **6. Public Education**

Periodically, the Utility will inform residents of their responsibilities related to sanitary sewer service from the Utility of \_\_\_\_\_.

## **7. Other Sanitary Sewer System Policies**

The Utility has a number of other policies and/or ordinances that are important to the ongoing operation of the Utility's sanitary sewer system. The following documents are available on the Utility's web site and in the public works department.

- Emergency Response Policy
- Public Sanitary Sewer Use Ordinance
- System Rehabilitation Policy

# **MODEL SANITARY SEWER EMERGENCY RESPONSE POLICY**

*This is a sample policy for guideline purposes only. Please consult your Utility attorney when developing your own policy.*

## **Introduction**

The emergency response policy should address those steps the Utility will take to respond to an emergency such as a sanitary sewer backup. It may or may not establish goals or guidelines for the time of response. In the event the Utility does set a goal, that goal should not define a timeframe in which the problem is fixed, but rather should address expectations for how soon after receiving a call a Utility employee is expected to respond to the complaint or problem.

Although written records of each emergency response will be prepared and maintained, this policy may or may not establish parameters for timely completion of such records. As with all areas of the Utility's policy, the policy for documentation of emergency response should be realistic and not impose strict or difficult standards that cannot reasonably be met.

While not required, some cities choose to reimburse property owners for professional cleaning costs associated with a sanitary sewer backup; others choose to compensate residents with a pre-determined dollar amount regardless of liability. Since there is some risk involved in these practices, it is important to clearly define the parameters for such a program:

- Clarify if the payment will be given to the company performing the service or directly to the property owner,
- Note any restrictions on who can perform cleaning services,
- Have the property owner provide documented proof (receipts, etc.) of the services obtained,
- Require the property owner to submit a claim to their insurance company,

Consider those circumstances under which the Utility would not provide reimbursement or payment to a resident (100 year rainfall, electrical failure at a lift station, etc.)

If payment is given to a resident in response to a sewer backup but is not a reimbursement, the Utility must ensure that the payment qualifies as an appropriate public expenditure. The Utility should establish an ordinance stating that the payment in response to a sewer backup is part of the service that residents in the Utility of \_\_\_\_\_ are charged for on their municipal utility/sewer bill.

Be sure to note that providing a payment or reimbursement is not an admission of liability on the part of the Utility nor is the Utility obligated to pay any other costs.

## Model Policy Language

### 1. Procedure

It is the Utility's policy to respond to sewer backups, lift station problems or failures, or other system problems or failures 24 hours a day, 365 days a year. During normal business hours, all calls and reported problems will be routed to and employees dispatched by the \_\_\_\_\_ (*insert name of department*) department. Normal business hours are from \_\_\_\_\_ a.m. to \_\_\_\_\_ p.m., Monday through Friday, excluding legal holidays. At all times other than normal business hours, emergency calls will be routed to \_\_\_\_\_ (*insert name of department or title of employee*). The \_\_\_\_\_ (*insert title of employee: public works director, utility superintendent, team supervisor, etc.*) will designate one or more employees as "on call" during non-business hours and will develop an on-call schedule and on-call response procedures.

### 2. Response

It is the goal of the department to provide an initial response within \_\_\_\_\_ (*insert number of hours*), or as soon as possible under the circumstances, of receiving report of a problem or an emergency call. The time necessary to remedy a problem will vary depending on the number of calls, the nature and seriousness of the problem, weather, and other factors that may impact the department's ability to respond, find and correct a reported problem.

When appropriate, a Utility employee will check the Utility's sanitary sewer main at the point of the problem. Corrective action will be taken if the Utility's sanitary sewer main is found to be blocked or obstructed.

When a blockage found in a sanitary sewer main is causing a backup into a private portion of the system, the first priority will be to address the problem in the Utility's sanitary sewer main.

After a sanitary sewer backup is remedied, efforts to determine the cause of the blockage or backup will be undertaken by those responding to the emergency. Written records of emergency response will include information and documentation concerning the cause(s) or possible cause(s) of the blockage or backup.

When investigation of a backup determines that the problem is within the private portion of the sanitary sewer system, the sewer customer will be informed of possible corrective action they may have to perform on their portion of the system.

### 3. Reporting

The State Warning Point (1-800-320-0519) must be notified when bypassing the Utility's sanitary sewer system or otherwise discharging sewage anywhere other than to the Utility's sanitary sewer system.

The State Warning Point must be notified within one hour of discovery of sewage being discharged anywhere other than to the Utility's sanitary sewer system.

**Utility employees are instructed to not admit or mislead residents about Utility liability for backups in the municipal sanitary sewer system.**

*Put this card in your utility vehicle.*

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

### **Write Down**

- 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**

Utility employee must report sewer backups/incidents to:

---

If property owner believes utility is responsible they should contact:

---

-----

*Put this card in your utility vehicle.*

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

***Remember, you are representing the utility . . .***

### **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

*Put this card in your utility vehicle*

## **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 utility:

- Accept service of summons and complaint
- Immediately forward a copy of summons and complaint to:
  - Utility Insurance Agent
  - Utility Attorney
  - Claims Office

Attorney defending utility will contact plaintiff or plaintiff's attorney  
All contact concerning lawsuits should be made through attorney

---

*Put this card in your utility vehicle.*

## **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.

# Confined Space Pre-Entry Checklist

Confined Space Entry Permit  
Date and Time Issued: \_\_\_\_\_ Date and Time Expires: \_\_\_\_\_  
Job site/Space I.D.: \_\_\_\_\_ Job Supervisor: \_\_\_\_\_  
Equipment to be worked on: \_\_\_\_\_  
Work to be performed: \_\_\_\_\_  
Stand-by personnel: \_\_\_\_\_  
1. Atmospheric Checks: Time \_\_\_\_\_  
Oxygen \_\_\_\_\_%  
Explosive \_\_\_\_\_% L.F.L.  
Toxic \_\_\_\_\_PPM  
2. Tester's signature: \_\_\_\_\_  
3. Source isolation (No Entry): N/A Yes No  
Pumps or lines blinded,            ( ) ( ) ( )  
disconnected,                   ( ) ( ) ( )  
or blocked?                       ( ) ( ) ( )  
4. Ventilation Modification: N/A Yes No  
Mechanical                       ( ) ( ) ( )  
Natural Ventilation only       ( ) ( ) ( )  
5. Atmospheric check after  
isolation and Ventilation:  
Oxygen \_\_\_\_\_%     > 19.5 %  
Explosive \_\_\_\_\_% L.F.L < 10 %  
Toxic \_\_\_\_\_PPM     < 10 PPM H(2)S  
Time \_\_\_\_\_  
Testers signature: \_\_\_\_\_  
6. Communication procedures: \_\_\_\_\_  
\_\_\_\_\_  
7. Rescue procedures: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



# LIFT STATION REPORT

DATE: \_\_\_\_\_ REGULAR: \_\_\_\_\_ OVERTIME: \_\_\_\_\_  
OPERATORS: \_\_\_\_\_ TIME: \_\_\_\_\_ A.M. \_\_\_\_\_ P.M.

## LIFT STATION ADDRESSES:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| <input type="checkbox"/> #1 _____  | <input type="checkbox"/> #11 _____ |
| <input type="checkbox"/> #2 _____  | <input type="checkbox"/> #12 _____ |
| <input type="checkbox"/> #3 _____  | <input type="checkbox"/> #13 _____ |
| <input type="checkbox"/> #4 _____  | <input type="checkbox"/> #14 _____ |
| <input type="checkbox"/> #5 _____  | <input type="checkbox"/> #15 _____ |
| <input type="checkbox"/> #6 _____  | <input type="checkbox"/> #16 _____ |
| <input type="checkbox"/> #7 _____  | <input type="checkbox"/> #17 _____ |
| <input type="checkbox"/> #8 _____  | <input type="checkbox"/> #18 _____ |
| <input type="checkbox"/> #9 _____  | <input type="checkbox"/> #19 _____ |
| <input type="checkbox"/> #10 _____ | <input type="checkbox"/> #20 _____ |

## TYPE OF WORK DONE

- |   |  |
|---|--|
| <input type="checkbox"/> Lift Station Call        | <input type="checkbox"/> Lift Station Painting |
| <input type="checkbox"/> Lift Station Maintenance | <input type="checkbox"/> Flushing Lift Station |
| <input type="checkbox"/> Lift Station Checks      |  |

Operator's Remarks \_\_\_\_\_  
\_\_\_\_\_

Materials Used \_\_\_\_\_  
\_\_\_\_\_

WEEKLY SEWERS PREVENTATIVE MAINTENANCE

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

MONTHLY SEWERS PREVENTATIVE MAINTENANCE

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

QUARTERLY SEWERS PREVENTATIVE MAINTENANCE

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

SEMI-ANNUAL SEWERS PREVENTATIVE MAINTENANCE

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

PROBLEM SEWERS PREVENTATIVE MAINTENANCE

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

Initials		Location			Footage		Size
	Date			Gal. Used			
	Time			# of Setups			
Remarks:				Checked		Sewer Flowing	
				Flushed		Sewer Plugged	

**SANITARY SEWER MANHOLES**

Location: \_\_\_\_\_ Date: \_\_\_\_\_  
Size: \_\_\_\_\_ By Whom: \_\_\_\_\_

Condition of:

Invert: _____	Type: _____	Remarks: _____
Floor: _____	Type: _____	Remarks: _____
Walls: _____	Type: _____	Remarks: _____
Casting: _____	Type: _____	Remarks: _____
Cover: _____	Type: _____	Remarks: _____

**SANITARY SEWER MANHOLES**

Location: \_\_\_\_\_ Date: \_\_\_\_\_  
Size: \_\_\_\_\_ By Whom: \_\_\_\_\_

Condition of:

Invert: _____	Type: _____	Remarks: _____
Floor: _____	Type: _____	Remarks: _____
Walls: _____	Type: _____	Remarks: _____
Casting: _____	Type: _____	Remarks: _____
Cover: _____	Type: _____	Remarks: _____

**SANITARY SEWER MANHOLES**

Location: \_\_\_\_\_ Date: \_\_\_\_\_  
Size: \_\_\_\_\_ By Whom: \_\_\_\_\_

Condition of:

Invert: _____	Type: _____	Remarks: _____
Floor: _____	Type: _____	Remarks: _____
Walls: _____	Type: _____	Remarks: _____
Casting: _____	Type: _____	Remarks: _____
Cover: _____	Type: _____	Remarks: _____

**KEY:** G-Good F-Fair P-Poor V-Clay C-Cement B-Brick

**SERVICE REPORT**

DATE: \_\_\_\_\_ REGULAR: \_\_\_\_\_ OVERTIME: \_\_\_\_\_

OPERATORS: \_\_\_\_\_ TIME: \_\_\_\_\_ A.M. \_\_\_\_\_ P.M.

ADDRESS OF CALL: \_\_\_\_\_

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Sewer Call         | <input type="checkbox"/> Rodding Sewers        | <input type="checkbox"/> T.V.            |
| <input type="checkbox"/> Routine Flushing   | <input type="checkbox"/> Maintenance on Rodder | <input type="checkbox"/> Dying Sewers    |
| <input type="checkbox"/> Proofing Sewers    | <input type="checkbox"/> Checking Sewers       | <input type="checkbox"/> Manhole Repairs |
| <input type="checkbox"/> Maintenance on Jet | <input type="checkbox"/> Sewer Repairs         | <input type="checkbox"/> Other           |

Was our line:  plugged? or  okay?

Utility sewer flowing when you left location? Yes No

Amount and type of material removed: \_\_\_\_\_

- |                       |  |                                  |
|-----------------------|--|----------------------------------|
| No. of Setups: _____  | <input type="checkbox"/> Jet                 | <input type="checkbox"/> Rodder  |
| Type of Sewer: _____  |  |                                  |
| Size of Sewer: _____  | <input type="checkbox"/> Buckets             | <input type="checkbox"/> Steamer |
| Length of Run: _____  |  |                                  |
| Gals. Of Water: _____ | <input type="checkbox"/> Street Dept. Vactor | <input type="checkbox"/> Other   |

Operator's remarks or problems: \_\_\_\_\_

Materials Used: \_\_\_\_\_

Was homeowner contacted? Yes No

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Cost: \_\_\_\_\_

Homeowner's remarks: \_\_\_\_\_



## MODEL SANITARY SEWER ARTICLE FOR CITY NEWLETTER

The City of \_\_\_\_\_ (*insert name of city*) Public Works Department provides for the operation, maintenance, and treatment of wastewater to an environmentally safe level for returning the water back to the ecological system.

\_\_\_\_\_ (*insert name of city*) has \_\_\_\_\_ (*insert number of miles*) miles of sanitary sewer mains. Each year about \_\_\_\_\_ (*insert amount, e.g. one-third*) of the City's sanitary sewer mains are inspected and cleaned. Mains requiring a higher level of maintenance are cleaned annually or semi-annually. This routine maintenance helps to prevent blockages and sewer backups.

As a resident, you can play a key role in preventing sanitary sewer backups. To help prevent backups, please dispose of the following items properly, not by dumping in a drain or flushing down the toilet:

Diapers

Sanitary napkins

Rags or shop towels

Garage waste products such as oil, grease, gasoline, antifreeze

Household waste such as ashes, grease, corrosives, glass, metals, paint, poisons, or solvents

Yard waste such as sand, soil, or mud

Inflow and infiltration (I&I) is also a potential cause of sewer backups. I&I refers to clear water getting into the sanitary sewer system. This might occur through cracks or leaks in sewer pipes and manholes or from sump pumps incorrectly connected to the sanitary sewer system. Particularly during large rain events, I&I can cause the sanitary sewer system to overflow resulting in sewer backups.

Because of the potential for I&I to create system issues, City ordinance prohibits property owners from disposing of clear water into the sanitary sewer system. This includes water from any roof, surface or ground sump pump, foundation drain, or swimming pool. Sanitary sewer problems should be reported to the City of \_\_\_\_\_'s (*insert name of city*) Public Works Department. The City will work with you to identify the cause of the problem. If there is a blockage in one of the City's main sewer lines, the City will attempt to clear the blockage.

The sewer line from your home, business or other property to the City sewer main is your responsibility. **That means that you as the property owner are responsible for clearing any blockages.** Property owners must schedule service and pay the cost of clearing any blockage located in the individual sewer line on their property.

If you have questions regarding the City's sanitary sewer maintenance program, sewer backup response or a specific incident, please contact the Public Works Department at (\_\_\_\_) \_\_\_\_ - \_\_\_\_\_ (*insert phone number*), Monday through Friday, \_\_\_\_ AM to \_\_\_\_ PM. Outside regular business hours, emergencies can be reported to the \_\_\_\_\_ (*insert secondary information, e.g. sheriff's office*) at (\_\_\_\_) \_\_\_\_ - \_\_\_\_\_ (*insert phone number*).

## City of \_\_\_\_\_

### What You Should Know and How You Should Protect Yourself

City of \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Website \_\_\_\_\_

Occasionally, a blockage in a sewer line will result in a backup of sanitary sewage into a private home. If you experience a backup, immediately contact the City of \_\_\_\_\_ Public Works Department. The following information will answer the basic questions about what to do if you experience a backup and how to begin cleaning.

#### **INSURANCE**

The City is not automatically responsible when a sewer backup occurs. There are many reasons for backups which the City cannot control. For example, people dumping inappropriate items such as grease or diapers into the system can create a blockage. Tree roots can grow into and obstruct the lines. Generally, the City is responsible only if it was negligent in maintaining the main sewer lines.

Sometimes, your homeowners' insurance will pay for sewer backups. Not all policies have this coverage and you should check with your agent.

If you feel damage occurred as a direct result of the City's negligence, you can file an insurance claim by calling the City.

#### **CLEAN UP**

For large clean ups, you should call a cleaning service. Your insurance carrier might have suggestions on which service to use or you can look in the Yellow Pages. For smaller backups you can clean yourself, use a solution of 1 cup of bleach to five gallons of water. To reduce health hazards, thoroughly clean the areas affected by the backup as soon as possible. The Florida Department of Health suggests the following:

If a sewage backup occurs in your home, secure the area affected from access. Keep children out of wet areas that are affected by sewage. If your entire home has been saturated, abandon the home until all affected areas, including but not limited to carpets, rugs, sheetrock, drywall, and baseboards, have been cleaned and decontaminated.

If sewage overflows in open areas or streets, etc., avoid these areas and keep children out of these areas. Do not let children play in flood waters as these waters may be affected by sewage.

If you live in a low-lying or flood-prone area, be advised that the ground in your area may be saturated due to the heavy rainfalls during and after the storm. You should use household water as little as possible to prevent sewage backups in your home.

If there has been a backflow of sewage into the house, the following measures should be taken to ensure proper clean-up:

- Walls, hard-surfaced floors and many other household surfaces must be cleaned with soap and water and disinfected with a solution of 1 cup of bleach to five gallons of water.
- Thoroughly disinfect surfaces that come in contact with food and children's play areas. Wash all linens and clothing in hot water or dry-clean.
- Items that cannot be washed or dry-cleaned, such as mattresses and upholstered furniture, must be air dried in the sun and sprayed thoroughly with a disinfectant. Steam-clean all carpeting.
- Fiberboard, fibrous insulation and disposable filters that have contacted floodwater or sewage should be replaced in your heating and air conditioning system.
- Wear rubber boots and waterproof gloves during clean-up.

Be careful about mixing household cleaners and disinfectants, as combining certain types of products can produce toxic fumes and result in injury or death.

It can be difficult to throw away items in a home, particularly those with sentimental value. However, keeping certain items soaked by sewage or floodwaters may be unhealthy. In general, materials that cannot be thoroughly cleaned and dried within 24-48 hours should be discarded.

If you are having problems in areas served by sewer systems, please contact your utility company to insure they are aware of problems in your area.

If you have questions, please call the Health Department's Environmental Health office at 850-245-4250.

### **SOME OTHER TIPS**

Use outside air to dry your home.

Open windows and doors and use an exhaust fan to remove moist air from the house.

If available, use a room de-humidifier. Empty it often.

If your basement is flooded, pump the water in stages – about one-third per day. Make sure the level of floodwater outside is below the level of the basement floor. If not, do not pump the basement all at once because the saturated soil could cause the basement walls to collapse. Wear a mask to prevent inhaling contaminated dust, especially if you have allergies. Consult your physician if you have questions.

Open, clean, decontaminate, and thoroughly dry cavities in walls, floors, and ceilings.

Release any water or mud that has been trapped in walls, ceilings or floor cavities.

Allow walls to dry from the inside out.

Remove all interior wall finishing materials and insulation.

Throw out any wet insulation, moist plaster, wallboard and paneling.

If you think you might have materials containing asbestos in your home, call the Florida Department of Health at 850-245-4300.

If any materials are still wet or moist after 24-48 hours, you should assume they have mold growing on them.

### **Food**

Throw out any opened food or packaged foods that are not waterproof. Commercially canned foods can be salvaged if the labels are removed and the cans thoroughly washed. The cans should be disinfected by wiping the entire surface with a laundry bleach and water mixture and

rinsed in clear water. Home-canned foods require additional care. After the jars containing home-canned foods have been washed and disinfected, the jars should be boiled for ten minutes before using.

### **Wet Appliances**

If your hot water heater became wet due to flooding, it should be discarded. The insulation typically can't be replaced and the burner or heating element might become damaged and could cause an explosion or fire if used. If in doubt consult a service professional before using. If the furnace was flooded, have it inspected and serviced by a professional furnace service before using.

### **Record Keeping**

Take pictures of damage for your records.

Keep all receipts for all work done.

Write a description of the extent of damage.

Record date and time of occurrence and note which sewer areas surcharged– floor drain, lower level toilet, laundry tub and the like.

### **HELP PREVENT BACKUPS**

The following items should be disposed of in your trash can, NOT in the sanitary sewer system:

Diapers

Paper towels

Cooking grease

Food (do NOT use the disposal for all food items)

### **REMINDER**

Property owners are responsible for the maintenance, repair, and cleaning of the service line from the house to the City main line.

### **FOR MORE INFORMATION**

For more information, contact the City of \_\_\_\_\_ Public Works Department at \_\_\_\_\_ or visit the city's website at \_\_\_\_\_.

For more information on clean ups, visit the Florida Department of Health's website at [www.doh.state.fl.us](http://www.doh.state.fl.us)

## MODEL SANITARY SEWER BACKUP LETTER TO RESIDENTS

Dear Property Owner:

The City of \_\_\_\_\_ operates and maintains a sanitary sewer collection system that serves all properties within the City. The City performs regular, routine maintenance on its sanitary sewer lines to ensure they are in good working condition. Maintenance of the sanitary sewer system is done pursuant to the City's Sanitary Sewer Maintenance Policy. Blockages in the City's main sewer lines or in individual service connections may happen on occasion and can cause water and sewage to back-up into a person's home. If a blockage occurs in the City's main sewer line, the Public Works Department will take action to clear the blockage. The City tries to have employees available at all times to respond to sewer back-ups. When the City learns of your sewer back-up, our goal is to have employees immediately begin working with you to determine the cause and to clear any blockage in the main sewer line.

The sewer line from your home, business or other property to the City sewer main is your responsibility. **That means that you as the property owner are responsible for clearing any blockages.** Property owners must schedule service and pay the cost of clearing any blockage located in the individual sewer line on their property.

It is important to take prompt action to start clearing a blocked sewer line as failure to act in a timely manner may increase damage to your property as well as to neighboring properties. Informing the City of any sewer back-up is critical so the line can be inspected to ensure the blockage is not in the City's main sewer line.

Sewer line blockages are commonly caused by plant roots growing into the line. Blockages may also be caused by the improper disposal of items such as grease, diapers, washing machine lint and other items flushed down the toilet. Because the City cannot prevent the inappropriate disposal of items into the sewer system, even with a routine maintenance and inspection program it is impossible to prevent all sewer blockages and back-ups. It is important to note that regardless of where a blockage is found, in the City's main sewer line or in an individual sewer line, **the property owner is responsible for the clean up costs in most cases.** The City, or its insurer, will pay for clean up costs only if the City negligently failed to maintain its sewer line.

In the event of a sewer back-up you should document your actions. Try to take pictures of any damage caused by the sewer backup and write down information about the contacts you make and any actions taken. This information will be of value if your loss is covered by insurance.

For all sewer back-ups, in the interest of health and safety, property owners must make sure that any water, sewage or other debris is thoroughly cleaned in an appropriate manner. It is important that wet areas are disinfected and dried. Failure to properly clean the entire contaminated area can result in adverse health consequences. Detailed information about proper cleaning after a sewer back-up is available from the City's website (\_\_\_\_\_) and the Florida Department of Health ([www.doh.state.fl.us](http://www.doh.state.fl.us)).

I hope you find this information helpful. A brief description of the steps a property owner should take in the event of a sewer backup is attached to this letter. If you have questions regarding the City's sanitary sewer maintenance program, sewer back-up response or a specific incident, please contact the Public Works Department at \_\_\_\_\_ . Thank you.

Sincerely,

## **MODEL SEWER BACKUP PROCEDURES FOR RESIDENTS**

1. Call the City of \_\_\_\_\_ immediately at \_\_\_\_\_ to report the sewer backup. The City will work with you to identify the location of the blockage. If the blockage is in one of the City's main sewer lines, the City will attempt to clear the blockage.

2. Make arrangements for the blockage to be cleared if it is determined to be in the individual sewer line to your property. Remember you are responsible for scheduling and paying for service to clear such a blockage. Many local plumbers can provide this service.

3. If you have homeowners or another type of property insurance coverage, notify your insurance agent of the sewer backup to see if such a claim is covered.

4. Clean the entire contaminated area in a safe and professional manner. It is a good idea to use the services of a reputable company experienced in cleaning up after sewer backups. For convenience purposes only, listed below are companies that provide cleanup services in the City of \_\_\_\_\_. The City does not recommend or endorse the services of any particular company. Other companies may provide similar services and it is important that you consider your options before making a selection.

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Name: \_\_\_\_\_ Phone: \_\_\_\_\_

5. Document the actions you take (calls, contacts, costs) in response to the sewer backup.

## MODEL UTILITY BILL STUFFER FOR SANITARY SEWER BACKUPS

Sewer backups happen. If you've ever experienced one, you know there's a lot of time and money spent to correct the damage caused by the backup. Sanitary sewer line blockages are typically caused by roots, grease, and improper disposal of items. Tree roots can enter the sanitary sewer system at joints and cracks in the sewer service lines and mains. Grease can solidify in the sewer lines and restrict other waste from flowing through. The lines can be blocked by disposable diapers, paper towels, feminine hygiene products, washing machine lint, or similar items that might get flushed down the drain or toilet.

As a resident, you play an important role in keeping the City's main sewer line and your own private sewer line clean and clear of blockages. The following items should be disposed of in your trash can, NOT in the sanitary sewer system:

- Diapers
- Sanitary napkins
- Rags or shop towels
- Garage waste products such as oil, grease, gasoline, antifreeze
- Household waste such as ashes, corrosives, glass, metals, paint, poisons, or solvents
- Yard waste such as sand, soil or mud

If a sewer backup occurs on your property, the City encourages you to take the following steps:

1. Call the City immediately at (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ (*insert phone number*) to report the sewer backup. The City will work with you to identify the location of the blockage. If the blockage is in one of the City's main sewer lines, the City will attempt to clear the blockage.
2. Make arrangements for the blockage to be cleared if it is determined to be in the individual sewer line to your property. Remember, you are responsible for scheduling and paying for service to clear such a blockage.
3. If you have homeowners or another type of property insurance coverage, notify your insurance agent of the sewer backup to see if such a claim is covered.
4. Clean the entire contaminated area in a safe and professional manner. It's a good idea to use the services of a reputable company experienced in cleaning up after sewer backups.
5. Document the actions you take (calls, contacts, costs) in response to the sewer backup.

If you have further questions, please visit the City's website at \_\_\_\_\_ (*insert city website address*) or call the Public Works Department at (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ (*insert phone number*).



## **MODEL WEB CONTENT FOR CITY SANITARY SEWER DEPARTMENTS**

*The following information is designed to be used in conjunction with the Sewer Toolkit, located in the Wastewater section of the Florida Rural Water Association website at [www.frwa.net](http://www.frwa.net).*

Your city website can be an effective method of educating the public about city operations and programs. The sample website content below is designed to help you develop (or expand) web content about your city's sanitary sewer system. Keep in mind that these are only examples – the information should be customized in the way that most effectively shares your city's message and best meets your city's needs.

If you don't find what you are looking for below, remember there are many cities in Florida that do a great job of sharing information on their web sites. Just enter [www.google.com](http://www.google.com) on your website browser, enter the name of a city and explore the information others have to offer about their sanitary sewer systems.

### **SAMPLE ONE**

#### **Contact Info**

City of Palm Falls

Public Works Department Address Palm Falls, FL 00000

Telephone: (555) 555-5555 Fax (555) 555-5555 [pubworks@ci.palm-falls.fl.us](mailto:pubworks@ci.palm-falls.fl.us)

#### **Sanitary Sewer**

Public works is responsible for inspecting and maintaining the collection system infrastructure and the sanitary lift stations and ensuring uninterrupted collection of wastewater.

The City has \_\_\_\_\_ miles of sanitary sewer lines. Most of the lines are in the street. Some run through utility easements in grassy areas. Each year, the Public Works department cleans approximately one-third of the City's sanitary sewer lines. Lines requiring a higher level of maintenance are cleaned annually or semi-annually. This routine maintenance helps to prevent blockages and backups.

The sanitary sewer lines are cleaned using high performance sewer cleaning equipment. A cleaning nozzle is propelled from one manhole to the next using water under high pressure. The nozzle is then pulled back to the starting manhole. As the nozzle is pulled back, water scours the inside of the sanitary sewer pipe. Any debris in the pipe is pulled back with the water. The debris is removed from the manhole with a vacuum unit. If roots are found, they are cut with a root cutter. This process is repeated on every sewer line cleaned.

#### **Keep Your Toilet Bowl Lid Down!**

Summer is the season for sewer cleaning. The City has \_\_\_\_\_ miles of sanitary sewer lines. Each year, the Public Works department cleans approximately one-third of the

City's sanitary sewer lines. The sanitary sewer lines are cleaned using high performance sewer cleaning equipment. A cleaning nozzle is propelled from one manhole to the next using water under high pressure. The nozzle is then pulled back to the starting manhole. As the nozzle is pulled back, water scours the inside of the sanitary sewer pipe. Any debris in the pipe is pulled back with the water. The debris is removed from the manhole with a vacuum unit. If roots are found, they are cut with a root cutter. This process is repeated on every sewer line cleaned.

During cleaning of sanitary sewer lines, air occasionally vents into a home through the sanitary sewer service line and ventilation system. When this happens water in the toilet bowl can bubble or surge or, in rare cases, splash out of the bowl. The common causes of air venting into homes during sanitary sewer cleaning are: air movement from normal cleaning operations, the use of higher pressure necessary when cleaning sanitary sewer lines that have a steep slope, sewer lines running close to the building, a plugged roof vent, and the size and complexity of the home's waste and ventilation system. So, to minimize water splashing out of your toilet bowl, make it a habit to keep the lid down.

### **Sewer Backups**

If you have a sewer backup and do not know where the blockage is, you should contact the City before contacting a drain cleaning company. You may be able to avoid an unnecessary charge if the problem is in the City's sewer line rather than in your property's service line. A Public Works employee will determine if the problem is in the City's line or in your property's service line.

**555-555-5555 (Public Works)**

**Monday – Friday 8:00 a.m. to 4:30 p.m.**

**555-555-5550**

**After hours, weekends and holidays.**

The property owner is responsible for clearing any blockage in the service line between the home and the City sanitary sewer main. This includes debris and tree roots. The property owner is also responsible for cleaning and repairing any damage done to the property by the backup.

The City is not automatically liable for blockages in the City's sanitary sewer system. The City is only liable for those damages if the backup was caused by the City's negligence.

Most homeowner insurance policies exclude damage resulting from sewer backups. Many insurance providers do have insurance riders that can be purchased to insure loss due to sewer backups.

Sanitary sewer line blockages are typically caused by roots, grease, and improper disposal of items. Tree roots can enter the sanitary sewer system at joints and cracks in the sewer service lines and mains. Grease can solidify in the sewer lines and restrict other waste from flowing through. The lines can be blocked by items like disposable diapers,

paper towels, feminine hygiene products, washing machine lint, or other items improperly flushed down the drain or toilet.

### **Sewer Repairs**

The property owner is responsible for any repairs on the service line from the home to, and including, the connection at the property line. In most locations, the City is responsible for repairs within the public road right of way.

### **Sewer Odors**

Floor and sink drains usually have water filling the bottom of the drain trap which acts as a barrier between the air in the sewer line and the air in your home. When a drain trap becomes dry, sewer odors can enter into the residence. If you experience sewer odors in your home, run water down your drain.

### **Sump Pumps**

If you use a sump pump in your basement, it is illegal to drain the water into the basement sanitary sewer drain or laundry tub. Sump pumps must be discharged outside of the house to the yard or drainway that will prevent the water from draining directly to the street. Call the Public Works department if you need more information.

## **SAMPLE TWO**

### **Sewer Backups and Blockages**

#### **What to do in the event of a sewer backup**

Property owners experiencing a sewer backup may call 555-555-4555 between the hours of 7 a.m. and 3:30 p.m., Monday thru Friday. After 3:30 p.m. and on weekends, residents may call Police at 911. City crews will be dispatched to assess the situation.

If it is determined that no blockage or restrictions exist in the City's sanitary sewer system, the property owner is advised to contact a professional plumber or drain cleaning service to have the private sewer service inspected. The City cannot make a recommendation for drain cleaning services. A property owner may wish to obtain several estimates.

Property owners should be aware, if the problem is in the private sewer line, the property owner is responsible for correcting the problem. The owner of the property is responsible for maintaining and cleaning the sewer line from the building to the City's sewer main, including the connection on the sewer main.

Many homeowners' insurance policies exclude damage resulting from sewer backups. However, some insurance companies do provide sewer backup coverage. If you are concerned about the possibility of a sewer backup and want to insure that you are covered, the City urges you to check with your home insurer regarding the availability of sewer backup insurance.

**How to prevent backups in your service line & in the City sewer main** Property owners can do many things to prevent their service from backing up. Remember, the very same things can help prevent backups in the City main as well.

**Grease:** Cooking oil should be poured into a heat-resistant container and disposed of in the garbage after it cools, not down the drain. Some people assume that washing grease down the drain with hot water is satisfactory. This grease goes down the drain, cools off, and solidifies either in the drain, the property owner's service, or in the sewer main. When this happens, the line eventually clogs.

**Paper Products:** Paper towels, disposable diapers, and feminine products cause many problems in the property owner's service as well as in the City main. These products do not deteriorate quickly. They become lodged in portions of the service and main, causing sewer backups. These products should be disposed of in the garbage.

**Sewer Root Control:** The continual flow of nutrient-filled water found in sewer pipes attracts tree roots. Roots growing along pipes exert significant pressure on pipes. These roots may push into and around gasket connection points which may expand and break seals. Root infiltration can cause a blockage to the service resulting in sewage backup in your home and damage to your property.

**Tips for Controlling Roots:** The conventional method of removing roots by a professional drain cleaning service involves cutting or tearing of roots to solve an immediate problem or stoppage, but this method does not retard the growth or destroy the roots outside the pipe. This is similar to pruning the bushes and shrubs surrounding your residence. An annual chemical root control program is an effective preventive maintenance measure. A product that foams with the addition of water is the most effective means of coating the roots and pipe surfaces. These products may be purchased from your local hardware store or home center.

**Illegal Plumbing Connections:** Do not connect French drains, sump pumps, roof gutter drains, or foundation drains to your sanitary sewer service. It is illegal and will cause debris and silt to clog your service line. Consult a plumber to correct any illegal connections.

## **Utility Billing Information**

### **Reading Your Utility Bill**

The City is committed to providing quality water and sewer services. A review of rates is conducted annually to determine the City's costs to provide these services. The City's intention is to recover costs from the users of the services.

### **Basic Charge**

The City has established a basic charge because there are fixed costs involved with providing service to each customer regardless of water usage.

**Water Charges**

Water usage is determined by a meter reading received electronically from each property on a monthly basis.

**City Sewer Charges**

City Sewer charges cover the costs associated with the collection of sewage and maintenance of the pipes and facilities. They also cover the expenses of transporting sewage to the regional treatment plant and treatment of the sewage to meet federal water quality standards. This charge is based on water consumption and is subject to a maximum that is set according to your winter water usage.

**Late Payments**

Past due amounts are subject to a monthly and annual penalty.

**Delinquent Accounts**

Delinquent amounts are certified to the property taxes of the home.

**Payment Drop Box**

Would you like to save postage? For your convenience the City has a drop box for water and sewer bill payments. The drive-up drop box is located in the City Hall parking lot. Payments deposited in the drop box are credited within three business days. Place your check and remittance stub in an envelope and drop it in the box - no postage required.

**Moving In or Out? Final Meter Reading Required**

Customers moving from residences or businesses need to contact Public Works at 555-555-5555 with a forwarding address for the final billing and meter reading. Customers will be asked to provide a meter reading when moving in or out of a property.

**OTHER INFORMATION TO CONSIDER FOR YOUR CITY'S WEB SITE****Sewer use ordinance**

The City's Sewer Use Ordinance prohibits certain discharges into their sanitary sewer lines. The City's Sewer Use Ordinance can be viewed at \_\_\_\_\_ (*insert link or .pdf document to the City's sewer use ordinance*).

**Brochure**

For more information about sewer backups and what you should know and how you should protect yourself, please see the following brochure: (*insert link or .pdf document to brochure; if your City does not have a brochure, see model brochure developed as part of the Sewer Toolkit [www.frwa.net](http://www.frwa.net)*).

**Equipment used in sewer maintenance process**

The Public Works department may use the following types of equipment when performing inspection and maintenance of its sanitary sewer system:

**Jetter/Vactor** - The jetter uses a high pressure water system to clean the sewer main of debris, such as sand, grease, and other materials that settle in the sewer main. Using a high pressure water system, the jetter propels a hose, with a specially designed nozzle, into the sewer main. The hose is then pulled back slowly while the high pressure water system flushes the materials to a downstream manhole for removal by the vactor. The vactor uses a positive displacement to create a vacuum that can lift debris from manholes.

**Rodding Machine** - A rodding machine is designed to push or pull a specially designed steel rod while rotating in the sewer main. With the use of specially designed tools attached to the end of the rod, this machine is one of the most efficient and dependable methods for removing heavy root growths, sand, grease, and debris from storm, sanitary, and combined sewer pipes.

**Bucket Machine** - A bucket machine is primarily used to remove debris in larger sewer lines from manhole to manhole. When pulled in one direction, and with both ends open, the bucket is pulled through the debris to be removed. When the direction is reversed, the tailing end of the bucket closes and traps debris inside. The bucket is then pulled to the downstream manhole for removal.

**TV Inspection** - Closed circuit television video (CCTV) inspection equipment and pipeline inspection/asset management software is used to inspect sanitary and storm sewers. The system uses a self-propelled transporter to carry the camera down the sewer main. While the camera is in operation, visual data is recorded for maintenance assessment needs.

**Manhole Inspection** - Manhole inspections are performed to quickly verify how the large diameter sewers are operating, and to visually inspect signs of infiltration from the cover, walls, joints, and pipe connections. Manhole inspections should be conducted on a routine basis.

# Sewer Toolkit: Other Resources

Other issues cities should consider when developing a comprehensive sewer maintenance program such as inflow and infiltration, state regulations, etc.

[You and I&I: Inflow and Infiltration](#)

[I & I Information for Systems](#)

[Video Inspection Agreement](#)

[Smoke Testing Notice](#)

[Smoke Testing Notice Spanish](#)

[Smoke Testing Door Hanger Sample](#)

[Manhole Inspection](#)

[Liquid Smoke Information Page 1](#)

[Liquid Smoke Information Page 2](#)

Links:

[DEP Collection System Website](#)

[<www.dep.state.fl.us/water/wastewater/dom/domcollect.htm>](http://www.dep.state.fl.us/water/wastewater/dom/domcollect.htm)

[DEP Spill Reporting Website](#)

[<www.dep.state.fl.us/water/wastewater/wce/spills.htm>](http://www.dep.state.fl.us/water/wastewater/wce/spills.htm)

[EPA-Region 4 MOM Website](#)

[<www.epa.gov/region4/water/wpeb/momproject/index.html](http://www.epa.gov/region4/water/wpeb/momproject/index.html)

# YOU AND I&I: INFLOW AND INFILTRATION

## **The Inflow & Infiltration (I&I) Problem**

Inflow occurs when rainwater is misdirected into the sanitary sewer system instead of storm sewers. As much as 40 percent of inflow comes from rain leaders and sump pumps that are improperly connected to the sanitary sewer system. The remedy for inflow is to remove improper connections to the sanitary sewer system.

Infiltration occurs when ground water seeps into the sanitary sewer system through cracks or leaks in sewer pipes. The cracks or leaks may be caused by age related deterioration, loose joints, damage or root infiltration. The remedy for infiltration is repairing or replacing the leaking infrastructure.

Inflow and infiltration are major causes of sanitary sewer overflows that release raw sewage into lakes, streams, streets, and basements. Sewer back-ups into basements may result in protracted litigation and potential liability for cities. Sanitary sewer overflows may also have significant environmental costs. In addition, excess storm water entering the sanitary sewer system through inflow and infiltration may result in increased wastewater treatment costs, which are passed on to the ratepayers. These costs make it imperative for cities to address inflow and infiltration problems.

## **Addressing the Problem**

Cities can address problems related to inflow and infiltration by following these recommendations:

**Develop a plan for addressing inflow and infiltration.** The first step in addressing inflow and infiltration problems in your city is developing a plan. The plan should identify the inflow and infiltration problems and ways to remedy them. The plan should include: (1) enacting a sanitary sewer ordinance; (2) conducting routine testing and inspections to determine where inflow and infiltration problems exist; and, (3) conducting routine maintenance to repair or replace failing infrastructure.

**Enact a sanitary sewer ordinance.** Your sanitary sewer ordinance should address inflow and infiltration problems. The ordinance should make it illegal to connect sump pumps, floor drains, and rain leaders to the sanitary sewer system. The ordinance may also include provisions for conducting inspections and penalties to ensure that residents comply with the ordinance. The city should consult the city attorney before enacting the sanitary sewer ordinance.

**Smoke and dye testing.** Smoke testing is an effective method for locating inflow and infiltration problems. Smoke is blown into the system and escapes through openings in the system. The escaping smoke will mark leaks in pipes and illegal



connections to the system. Because of the potential for smoke to enter residences, it is important to notify residents when conducting smoke testing.

Dye testing is an effective method for testing for inflow problems. Dye is poured into storm water locations such as drain tiles and sump pumps. If the dye ends up in the sanitary sewer system, there is an improper connection to the system. Because of privacy concerns, the city should consult the city attorney before conducting dye testing.

**Televising lines.** The city can determine where storm water is entering the sanitary sewer system by televising lines when it rains. Televising lines is also an effective method of locating illegal connections.

**Home inspections.** Home inspections are a good way to determine whether residents are illegally connected to the sanitary sewer system. In order to establish such an inspection program, the city sewer ordinance should contain a provision requiring residents to submit to an inspection by (1) a qualified city representative; or (2) a licensed plumber of the resident's choosing. The city could assess a service fee to residents refusing to allow the inspection and/or neglecting to fix the illegal connection. Because of privacy concerns, the city should consult the city attorney prior to conducting home-to-home inspections.

**Manhole inspections.** The city should visually inspect manholes for signs of infiltration from the cover, walls, joints, and pipe connections. Manhole inspections should be conducted on a routine basis.

**Repair and replace infrastructure.** The city's inflow and infiltration plan should include a schedule for repairing and replacing sewer lines and manholes that have infiltration problems. Repair of these facilities may be accomplished through slip lining, spot repairs or replacement. The city's repair and replacement schedule should prioritize repair and replacement activities, taking into account the city's budget, problem areas, and equipment and manpower limitations.

**Notify and educate the public.** The city should notify and educate the public about inflow and infiltration problems and the steps the city is taking to address those problems. Residents can be educated about inflow and infiltration reduction efforts through mailings included with utility bills, newspaper announcements, and on the city's web site. Informed residents will understand the nature and impact of inflow and infiltration problems and therefore be more likely to voluntarily correct illegal connections and consent to city inspections.

### **Legal Defenses When Inflow & Infiltration Causes Sewer Back-Up**

Sewer back-ups caused by inflow and infiltration problems often result in costly property damage claims. Cities have a number of legal defenses to sewer back-up claims. Of course, the best defense is eliminating the inflow and infiltration problems.

**No negligence.** The city will not be liable for a sewer back-up if it exercised reasonable care. In order to prove the city was negligent, the plaintiff must establish that: (1) there was a defect in the city's line; (2) the city knew or should have known of the defect; and, (3) the city failed to remedy the defect within a reasonable time after gaining knowledge of the defect.

The plaintiff must prove all three elements to be successful on a sewer back-up claim. If the city can show that despite a regular inspection and maintenance program, it did not have knowledge of the inflow and infiltration problem that caused the plaintiff's back-up, then the city will likely prevail. A successful defense requires documentation of routine inspection and maintenance activities.

**Act of God.** The city will not be liable for a sewer back-up if it can show that the back-up was caused by an act of god or nature and not by any negligence on the part of the city. For example, if the city can show that the sewer back-up was caused by a 100-year storm event and not by the city's failure to adequately address known inflow and infiltration problems, then the city will prevail because the back-up was caused by an act of god.