

# (A) Somersworth CMOM Evaluation

# (B) Collection System Resources

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# Capacity

# Management

# Operation, and

# Maintenance



- A.** Proper Operation and Maintenance Requirements at 40 CFR 122.41(e) requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions.
- B.** Duty to Mitigate at 40 CFR 122.41(d) requires the permittee to take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment.

# CMOM Performance Standards

1. Properly manage, operate and maintain, at all times, the parts of the collection system that the permittee owns or over which it has operational control.
2. Provide adequate capacity to convey base flows and peak flows.
3. Take all feasible steps to stop, and mitigate the impact of, sanitary sewer overflows.
4. Provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event.
5. Develop a written summary of their CMOM program and make it, and required program audits, available to the public upon request.

**December 2000 – EPA's Sanitary Sewer Overflow rule (pre-publication copy) released, but never officially put in to Federal Register**

**January 2001 – proposed federal regulation  
withdrawn for further review...**

# CMOM-like Implementation

- **California:** state-wide requirement for sewer system operating plans and FOG programs
- **N. Carolina:** collection system operating permits/licenses
- **New York:** state-wide SSO survey
- **Vermont:** Rule 154, requires contingency plans (spill prevention) for critical wastewater infrastructure
- **Massachusetts:** satellite communities added to NPDES permits at renewal
- **New Hampshire:** enhanced O&M language added to NPDES permit renewal
- **Rhode Island:** Many communities under EPA enforcement actions to alleviate overflows
- **Connecticut:** state-wide general permit for food prep facilities to address FOG overflows

# NEIWPCC Model Assessment Process (Evaluation of Business Practices)

1. Review background documents
  - SUO, SOPs, studies, contingency/response plans, permits, etc.
2. Conduct staff interviews
  - Diagonal slice across organization
3. Observe collection system O&M field practices
4. Develop initial assessment
5. Consensus workshop with utility
  - Establish base condition
  - Identify desired target level
  - Develop priority list
6. Develop prioritized action plan (matrix)

# Performance Level Criteria

Table 1. Determining Organization CMOM Business Practice Performance Level

Performance Level Determination	Stage 1 (Unaware)	Stage 2 (Initial)	Stage 3 (Defined)	Stage 4 (Managed)	Stage 5 (Optimized)
			Low • High	Low • Medium • High	
<p><b>Summary Description</b></p> <p><i>Considering the six elements of an adequate CMOM Program</i></p> <ul style="list-style-type: none"> <li>• <i>Defined Purpose that supports the Utility's Vision and Mission</i></li> <li>• <i>Short- and Long-Term Goals</i></li> <li>• <i>Documented</i></li> <li>• <i>Trained Staff</i></li> <li>• <i>Performance Measures</i></li> <li>• <i>Continual Improvement</i></li> </ul>	<ul style="list-style-type: none"> <li>• There is a total lack of awareness within the organization regarding the need for this specific CMOM business practice.</li> </ul>	<ul style="list-style-type: none"> <li>• The organization is aware of the need for this business practice, but does not utilize a systematic, documented approach for implementing or managing.</li> <li>• The organization is reactive with respect to how it conducts this business practice and its associated activities.</li> <li>• The actions of the organization are unplanned, sporadic, reactionary, and done in a non-repeatable manner.</li> </ul>	<ul style="list-style-type: none"> <li>• The organization has a defined, documented repeatable approach for conducting this business practice.</li> <li>• Data are used to respond.</li> <li>• The practice is well documented, effectively employed, and is communicated to affected personnel in the organization.</li> <li>• The organization would receive the high rating if all the above apply and the low rating if the utility is in the early stages of initiating the approach.</li> </ul>	<ul style="list-style-type: none"> <li>• The organization has a defined, repeatable approach for conducting this business practice that is documented, effectively employed and communicated to organization personnel.</li> <li>• Data are used to manage programs.</li> <li>• Qualitative performance measures are defined for the practice's processes.</li> <li>• Quality standards have been established.</li> <li>• There is a program established for the periodic measurement and improvement of the business practice.</li> <li>• High rating would include all the above characteristics.</li> <li>• Medium rating would be for organizations that have completed some, and are in the process of completing other, of the characteristics.</li> <li>• Low rating would mean that the organization is in the process of establishing the above characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>• The organization has a defined, repeatable approach for conducting this business practice that is documented and communicated to all personnel in the organization and made available to the policy makers and to the public.</li> <li>• Data are used to manage and optimize programs, as well as to track trends.</li> <li>• Qualitative performance measures are defined for the practice's processes with the goal of improving production and efficiency.</li> <li>• Quality standards have been established with the goal of improving performance.</li> <li>• Measures and standards are tracked in real time.</li> <li>• There is a program established for continual improvement of the business practice and for the refinement of associated processes, standards and procedures.</li> </ul>



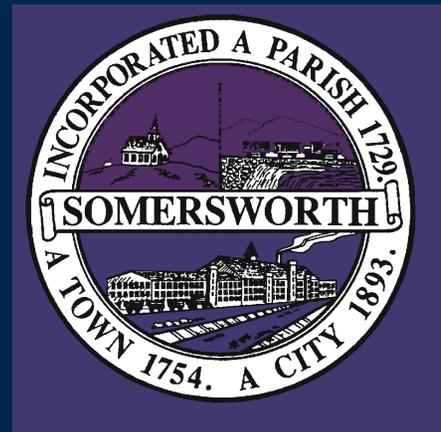
# Prioritized Matrix

City of Somersworth, New Hampshire  
 CMOM Business Practice Evaluation  
 Recommendations and Action Matrix  
 February 29, 2008

Business Practice	Priority 1 = High 5 = Low	Findings	Recommendations	Risk	Consequences	Task Leader
<b>Maintenance of Right-of-Ways</b>						
Maintenance Prioritization	1.1	The utility is in the process of putting easement information into their Geographic Information System (GIS). This information will aid the future prioritization process.	Continue to enter easement information into GIS	<ul style="list-style-type: none"> <li>Lack of access limits maintenance tasks.</li> <li>Potential for sanitary sewer overflows (SSOs) to go undetected.</li> <li>Response time for emergency events and duration of events increased.</li> </ul>	<ul style="list-style-type: none"> <li>Notice of Violation</li> <li>Enforcement Action</li> <li>Financial impact from fines</li> <li>Financial impact from additional time and resources needed to create emergency access</li> <li>Negative impact on customer service</li> </ul>	Chris Jacobs
Cross Country Easements and Right-of-Ways		Right-of-Way (ROW) maintenance is starting for the main trunk lines along the river.	Continue ROW maintenance for the main trunk lines along the river.			
Residential Easements and Right-of-Ways		Public Service maintains some of these easements.	Investigate to ensure that all easement are identified and locatable.			
<b>Technical Support Function – Contingency Planning</b>						
Planning Process - Steps and Tasks	1.2	There currently is no sewer overflow response plan (SORP) for the gravity and pressure collection systems. There is a SORP for the pump stations.	Incorporate staff knowledge and experience into a formal SORP for the gravity and pressure systems.	Without proper contingency planning and training there is greater risk for longer-duration emergency events.	<ul style="list-style-type: none"> <li>Notice of Violation</li> <li>Enforcement Action</li> <li>Financial impact from fines</li> <li>Negative impact on customer service</li> </ul>	John Jackman
Planning Process - Public Notification		There currently is no SORP for the gravity and pressure collection systems. There is a SORP for the pump stations	When a formal SORP is developed, verify that public notification procedures are valid and up-to-date.			
Planning Process - Regulatory Notification		There currently is no SORP for the gravity and pressure collection systems. There is a SORP for the pump stations	When a formal SORP is developed, verify that regulatory notification procedures are valid and up-to-date.			
Planning Process - Emergency Flow Control		There currently is no SORP for the gravity and pressure collection systems. There is a SORP for the pump stations	When a formal SORP is developed, verify that emergency flow control procedures are valid and up-to-date.			
Planning Process - Emergency Operations and Maintenance		There currently is no SORP for the gravity and pressure collection systems. There is a SORP for the pump stations	When a formal SORP is developed, verify that emergency operations and maintenance procedures are valid and up-to-date.			
Preparedness Training		There currently is no SORP for the gravity and pressure collection systems. There is a SORP for the pump stations	After the SORP is developed, conduct training using mock drills.			
Planning Process - Safety Issues		There currently is no SORP for the gravity and pressure collection systems. There is a SORP for the pump stations	Consider and incorporate collection system safety issues into the SORP.			

# City of Somersworth, NH (Medium Community)

- 10 square-miles
- Population 12,500
- 36 Miles of Pipe
- 3 Pump Stations
- Highway Dept. staff – 10% on collection system activities (respond to blockages, etc.)
- Contract Ops for treatment plant (at the time)
  - includes PS Maintenance



# Somersworth

## What are They Doing Well

- 100% Enterprise Funded
- Maps, Asset Inventory, and GIS
- Root Control Program
- Pump Station O&M (OMI)
- Budgeting
- Pretreatment (OMI)
- FOG (OMI)
  - Class 2 permit process
  - Hauler feedback



# Somersworth Highest Priority Improvement Opportunities

- Maintenance of Right-of-Ways
- Technical Support – Contingency Planning
- Non-Core Business Functions
- Administrative Support – Human Resources
- Maintenance - Gravity System Corrective
- Operations – Corrosion Control
- Operations – Flow Monitoring
- Maintenance – Gravity System Emergency
- Maintenance – Pressure System Preventive

**NEIWPCC**  
**Collection Systems Website**

***[www.neiwpcc.org/collectionsystems](http://www.neiwpcc.org/collectionsystems)***



# www.neiwpc.org/collectionsystems

- Water Quality ▶
- Wastewater and Onsite Systems ▶
- Water Resource Protection ▶
- Training & Renewals ▶
- Publications and Resources ▶
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- Web Links

## Wastewater and Onsite Systems | Collection Systems

- Overview
- Operation and Maintenance Guidance (OM&R)
- Capacity, Management, Operation, and Maintenance (CMOM)
- FOG Management
- Training and Certification
- Resources

**Overview**  
Municipal sanitary sewer collection and conveyance systems are an extensive, valuable, and complex part of the nation's infrastructure. Collection systems consist of pipelines, conduits, pumping stations, force mains, and all other facilities used to collect wastewater from individual residential, industrial, and commercial sources and convey it to

facilities that provide treatment before discharge to the environment.

Unfortunately, the current performance of many collection systems is poor, and many systems have received minimal maintenance for many years. Wastewater collection systems also suffer



Learn about NEIWPCC collection system training and voluntary collection system operator certification opportunities.

- Wastewater Treatment Short Course and Expo
- Fats, Oil, and Grease Management Alternatives (FOG)
- Youth and the Environment
- Publications and Resources**
- Wastewater Publications
- Biosolids
- On-Site Wastewater Treatment
- Security for Water Infrastructures
- Wastewater O&M

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#### Capacity, Management, Operation, and Maintenance (CMOM)

[Saratoga County, NY](#) | [Somersworth, NH](#) | [Boonville, NY](#) |

NEIWPC, in conjunction with the New York State Department of Environmental Conservation and several leading wastewater collection system experts,

developed a structured approach to be used to evaluate collection system management, operation, and maintenance programs – often referred to as CMOM (capacity management, operation, and maintenance) - of various-sized wastewater utilities. The overall goal of the evaluation process is the elimination of sewer overflows, as much as feasible, including short-term focus on the underlying causes of sewer overflows and the practices that can be improved to minimize or eliminate them.

The approach provides a thorough assessment of the means and methods utilized to manage, design, build, operate, and maintain a community's wastewater collection system. The approach



### Wastewater and Onsite Systems

#### Special Projects

[Northeast Onsite Wastewater Treatment Short Course and Expo](#)

[Fats, Oil, and Grease Management Alternatives \(FOG\)](#)

[Youth and the Environment](#)

#### Publications and Resources

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Current Issues

Newsroom

Calendar

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### Capacity, Management, Operation, and Maintenance (CMOM)

Saratoga County, NY | Somersworth, NH | Boonville, NY |

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#### City of Somersworth, New Hampshire

The next utility to receive assessment was the City of Somersworth, New Hampshire. This utility was the project's

medium-sized community. In Somersworth, the wastewater collection system is maintained by Department of Public Works and Utilities personnel, who generally spend 10-15% of their time (annually) on wastewater collection system issues. The collection system consists of approximately 35 miles of sewers and three pump stations, which serve roughly 3,300 homes and businesses. At the time of evaluation, the three pump stations were being maintained by a contract-operations firm that was also running the wastewater treatment plant in Somersworth.



- [Executive Summary](#)
- [Business Practice Evaluation](#)
- [Performance Level Determination](#)
- [Score Sheet](#)
- [Prioritized Maxtrix](#)

Wastewater Treatment Short Course and E

Fats, Oil, and Grease Management Alternatives (FOG)

Youth and the Environment **Publications and Resources**

Wastewater Publication

Biosolids

On-Site Wastewater Treatment

Security for Water Infrastructures

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Underground Storage Tanks ▶

Current Issues

Newsroom

Calendar

Partnerships ▶

Web Links

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Overview

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### Fats, Oils and Grease Control and Management (F.O.G.)

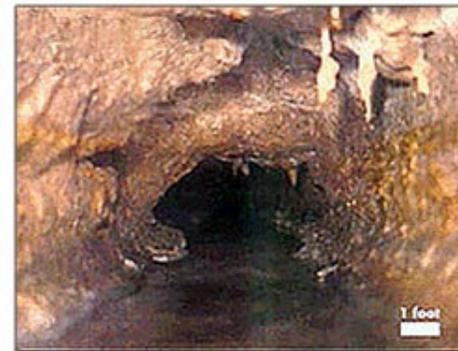
F.O.G. Overview | F.O.G. Workshop Presentations | F.O.G. Resource |

#### Overview

In 2005 NEIWPC presented a one-day workshop entitled *Fats, Oil, and Grease Management Alternatives*. Fats, Oil and Grease (FOG) are primarily generated by restaurants and other institutional food service establishments

and are major contributors to municipal wastewater collection system and onsite treatment system (septic system) blockages and overflows. As the environmental community moves to more stringently manage FOG, it is essential that there be adequate treatment capacity to manage the material removed from these wastewater systems.

NEIWPC's FOG workshop highlighted various treatment alternatives for this material. Treatment options discussed included private grease pretreatment facilities, composting, land application, and incineration (with municipal solid waste and sewage sludge). The workshop focused on treating the material once it is removed from the wastewater system and emphasized that there are properties within this material making it



Top: A 10' clean sewer pipe  
Bottom: Same sewer pipe with grease build-up

Wastewater Treatment Short Course and Expo

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Publications and Resources ▶

Underground Storage Tanks ▶

Current Issues

Newsroom

Calendar

Partnerships ▶

Web Links

Quality Management

Employment

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Overview

Operation and Maintenance Guidance (OM&R)

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### FOG Resources

#### Municipal FOG Control Programs

- [State of Connecticut General Permit and Model Program](#)
- [Cary, North Carolina](#)
- [Warwick, Rhode Island](#)
- [Orange County Sanitation District, California](#)
- [Daphne Utilities, Alabama - Daphne Utilities Presentations](#)
- [Las Vegas, Nevada \(Pain-in-the-Drain\)](#)
- [The New York City Department of Environmental Protection \(NYC DEP\) has developed a guide titled Best Management Practices for Non-residential Direct and Indirect Discharges of Grease to the Public Sewer System.](#)

[NYC DEP has also developed a brochure titled What You Should Know About Preventing Grease Discharge into Sewers - Guidelines for New York City Businesses.](#)



Wastewater Treatment Short Course and Expo

Fats, Oil, and Grease Management Alternatives (FOG)

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# www.calfog.org

CalFOG - Home Page - Windows Internet Explorer

http://www.calfog.org/index.html

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CalFOG - Home Page

## California Fats, Oils and Grease Workgroup



Keeping Your Sewers Safe From Fats, Oils and Grease

### California Fats, Oils, and Grease Work Group

The California Fats, Oils, and Grease work group (Cal FOG) was formed in 2001 as a result of increased regulatory focus on FOG-related sanitary sewer overflows (SSOs). The work group consists of wastewater agency, regulator, consulting firm, and restaurant and related industry representatives. The focus of the work group is to utilize collective resources to develop FOG control tools and to provide technical support and information to the work group members.



**CalFOG Mission Statement:** The purpose of Cal FOG is to build a coalition of stakeholders among wastewater professionals, regulatory agencies, restaurant owners and/or associations, and related industry representatives that strives to prevent, reduce and mitigate grease related sanitary sewer blockages and overflows (SSOs) in wastewater collection systems. Toward this goal, Cal FOG offers information and guidance for implementing strategic FOG control programs; promotes the proper management of brown and recyclable yellow grease, and provides a forum of real world knowledge regarding FOG-related issues.

The work group is formed within [Tri-TAC](#), a technical advisory committee representing municipal wastewater management agencies. Tri-TAC members include the California Association of Sanitation Agencies (CASA), the League of California Cities, and the California Water Environment Association (CWEA).

**CalFOG's Web Site:** Would you like to submit your agencies program materials or offer suggestions on how to make this site more useful? Fill out the [Site Improvement Suggestions Form](#).

### What's New

# www.epa.gov/region1/sso/toolbox.html

Wastewater Collection System Toolbox | Eliminating Sanitary Sewer Overflows in Rhode Island | E - Windows Internet Explorer

http://www.epa.gov/region1/sso/toolbox.html

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CalFOG - Home Page Wastewater Collection S...

U.S. ENVIRONMENTAL PROTECTION AGENCY

## Eliminating Sanitary Sewer Overflows in New England

Serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont & 10 Tribal Nations

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### Wastewater Collection System Toolbox

*Updated April 2010*

Communities across the United States are working to find cost-effective, long-term approaches to managing their aging wastewater infrastructure and preventing the problems that lead to sanitary sewer overflows. The Toolbox is an effort by EPA New England to provide examples of programs and educational efforts from New England and beyond showing the approaches being used to:

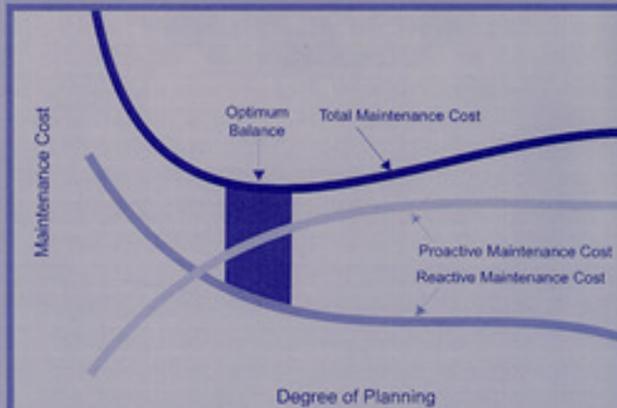
- Communicate with and educate citizens and local officials
- Address financial and regulatory needs
- Develop and conduct preventive maintenance programs
- Better manage infrastructure assets
- Use information systems, including GIS
- Improve system capacity and address system overflows

Our goal, as we develop the Toolbox over time, is not to provide an exhaustive listing or endorse any particular approach, but to direct managers, local officials, and other decision-makers to a range of fact sheets, case studies, ordinances, and other information that shows how things are getting done. And while we recognize that a certain approach may not be directly applicable to your situation, we hope it might provide a new idea, a useful template, or perhaps a potential contact as you work to prevent overflows and improve your collection system.

[How a Sewer System Works](#) [Knowing Your System](#)

Internet 100%

# OPTIMIZING OPERATION, MAINTENANCE, AND REHABILITATION OF SANITARY SEWER COLLECTION SYSTEMS



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