CMOM: An Introduction

2016 Illinois Collection Systems Conference

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Presented by:
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Outline

- Where Did CMOM Come From?
- Who Does It Apply To?
- What Does It Entail?
- How Can I Prepare For It?
What is CMOM?

C  Capacity  
M  Management  
O  Operation  
M  Maintenance

Intentions:

• Understand capacity constraints in the collection system
• Better manage, operate, and maintain collection systems
• Proactively prevent system overflows and basement backups
• Be prepared to respond to system overflows
CMOM Has It’s Origin From The CWA

Clean Water Act

- Combined Sewer Overflow (CSO) Policy
- Stormwater Regulations (Phase I, Phase II, MS4)
- Separate Sanitary Sewer Overflow (SSO) Policy

- 1995 Urban Wet Weather Flows Advisory Committee
- Phase II Stormwater Subcommittee
- SSO Policy Dialogue Subcommittee
CMOM Grew Out of the SSO Dialogue

1999  SSO Subcommittee started working on regulations for separate sanitary collection systems which included CMOM regulations

2003  SSO Policy was complicated with disagreements concerning “blending” issues

There seemed to be consensus on the need for CMOM but it couldn’t get separated from SSO Policy

2005  USEPA Publishes “Guidance” document on CMOM

2007  IEPA starts implementing CMOM regulations in NPDES permits
Benefits of a CMOM Program were Never in Question

Wastewater

Capital investment needs for the nation's wastewater and stormwater systems are estimated to total $296 billion over the next twenty years. Pipes represent the largest capital need, comprising three quarters of total needs. Fixing and expanding the pipes will address sanitary sewer overflows, combined sewer overflows, and other pipe-related issues. In recent years, capital needs for the treatment plants comprise about 15%-20% of total needs, but will likely increase due to new regulatory requirements. Stormwater needs, while growing, are still small compared with sanitary pipes and treatment plants. Since 2007, the federal government has required cities to invest more than $15 billion in new pipes, plants, and equipment to eliminate combined sewer overflows.
CMOM Programs Require Balance

Economics

Social Values

Environmental Benefits

CMOM Reconciles three demands
Special Condition: CMOM

- The Permittee shall work towards the goal of achieving no discharges from sanitary sewer overflows or basement backups and ensuring that overflows or backups, when they do occur, do not cause or contribute to violations of applicable standards or cause impairment in any adjacent receiving water.

- In order to accomplish these goals, the Permittee shall develop and submit to the IEPA a Capacity, Management, Operations, and Maintenance (CMOM) plan.
Regulatory Language From NPDES Permit:

The Permittee shall develop and submit to the IEPA a Capacity, Management, Operations, and Maintenance (CMOM) plan which includes an Asset Management Strategy within 12 months of the effective date of the permit.
Regulatory Language From NPDES Permit:

- Measures and Activities
- Design and Performance Provisions
- Overflow Response Plan
- System Evaluation Plan
- Reporting and Monitoring Requirements
- Third Party Notice Plan
Measures and Activities

- A complete map and system inventory of the collection system
- Organizational structure, schedules, checklists, and mechanisms ensuring preventative maintenance is performed
- Documentation of unplanned maintenance
- Assessment of capacity of collection system
- Identification and prioritization of structural deficiencies in the system
- **Develop and implement an Asset Management Strategy**
Measures and Activities

- **Asset Management Strategy**
  - A decision making tool to prioritize repair, replace, or rehabilitate assets, and development of long-term funding strategies
Regulatory Language Continued:

- **Design and Performance Provisions**
  - Monitor the effectiveness of the CMOM
  - Upgrade the CMOM program as necessary
  - Maintain a summary of CMOM activities

- **Overflow Response Plan**:
  - Know where the overflows and backups occur
  - Respond to each overflow or backup to determine additional actions such as clean up
  - Determine whether a product of I/I, obstructions, or other
Regulatory Language Continued:

- **System Evaluation Plan**
  - Identify areas of excess I/I and existing SSOs
  - Determine plans to reduce I/I and eliminate SSOs
  - Make provisions for pump stations, force mains, or other unique components
  - Develop “construction” plans and schedules for correction

- **Reporting and Monitoring Requirements**
  - Develop a plan for SSO detection and monitoring
  - Develop a plan for tracking and reporting basement backups

- **Third Party Notice Plan**
  - How do you notify those affected by SSOs
CMOM Development vs. Implementation

- **Guidance Documents**
  - USEPA CMOM Self-Assessment Checklist
  - IEPA CMOM Review Checklist

- **Perform a gap analysis**
  - Review your existing programs and facilities
  - Gather your data
  - Review records
  - Interview staff

- **Identify what aspects of your “CMOM” program need to be enhanced or developed**
C Capacity

- History of backups
- History of overflows
- History of maintenance operations
- Development impacts and future growth
- System modeling
More on System Modeling

- System modeling takes many forms
- Understand what your purpose is for modeling
  - Development impacts and future growth
  - Identification of capacity issues and bottlenecks
  - Improvement alternatives and forecasting
Complex Modeling Not Always Necessary

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Simple Spreadsheet Model
Alternative Evaluations and Forecasting

Dynamic Hydraulic Analysis Model
M  Management

- Organizational structure
- Personnel and position descriptions
- Internal communication procedures
- External communication procedures
  - SSO notification program
- Public education programs
- Information management systems
- Legal authority
Operation

- Mapping of collection system
- Flow monitoring of collection system
Operation

- **Sanitary Sewer Evaluation Studies (SSES)**
  - Sewer televising
  - Manhole inspections
  - Smoke testing
  - Leak detection
O  Operation

- Overflow response plan
  - Know where overflows occur
  - Know how to respond to an overflow
- Complaint investigation procedures
- Pumping station operations
  - Alarm settings
- Safety program
- New construction standards
- Budgeting
M Maintenance

- Schedules and checklists for preventive maintenance
  - Sewer cleaning
  - Root removal

- Mechanisms for unplanned maintenance
M Maintenance

- Capital improvement planning
- Prioritization of rehabilitation
  - Manholes
  - Mainline sewers
  - Laterals
M Maintenance

- Parts and equipment inventory
- Equipment maintenance plan
- Budgeting
CMOM Program Should Be All-Encompassing

- Consider other aspects of the watershed
  - Combined sewer, stormwater, separate sewer
  - Each can benefit the other
- Educate
  - Public officials
  - General public
- Identify funding sources and budget
- Be proactive
Use References and Don’t Reinvent the Wheel


- **Collection System Operation and Maintenance Training Videos.** Office of Water Programs, California State University, Sacramento. [http://www.owp.csus.edu/training/courses/waste_water/index.php](http://www.owp.csus.edu/training/courses/waste_water/index.php)
Questions?