About the CMOM Program Self Assessment Checklist

Introduction

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

What is CMOM?

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

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

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

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

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

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

About this Checklist (Continued)

What is the purpose of the CMOM program checklist?

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

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

How do I use this checklist?

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

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

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

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

General Information

CHECKLIST COMPLETED BY:

Name _____ Date _____

Daytime Telephone Number _____

UTILITY CONTACT INFORMATION

Utility Name _____

LOCATION

Street Address _____

Street Address (continued) _____

City _____ State _____ Zip _____

STAFF

Name _____

Title _____

Email _____

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

PERMITTED TREATMENT & COLLECTION FACILIITES

NPDES or STATE PERMIT #	PERMITTEE/CO-PERMITTEE/JURISDICTIONS	PERMIT COVERAGE		
		WWTP Effluent	Collection System	Wet-Weather Facility
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐
		☐	☐	☐

Collection System Description

SYSTEM INVENTORY

Treatment Facilities

# of Treatment facilities (NUMBER)

WWTP design capacity (MGD)

Average daily flow (MGD)

Average dry weather fow (MGD)

Access & Maintenance

Manholes (NUMBER)

Number of air vacuum relief valves (NUMBER)

Conveyance & Pumping

	Gravity Sewers	Force Mains	Pump Stations
Pipes and pumps Length/quantity	MILES	MILES	NUMBER
Age of system 0 - 25 years old	% PERCENT	% PERCENT	% NUMBER
26 - 50 years old	% PERCENT	% PERCENT	% NUMBER
51 - 75 years old	% PERCENT	% PERCENT	% NUMBER
>76 years old	% PERCENT	% PERCENT	% NUMBER

Number of inverted siphons _____

SERVICE AREA CHARACTERISTICS

Service area (ACRES)

Service population (PEOPLE)

Annual precipitation (INCHES)

Number of Service Connections

Residential		Commercial		Industrial		TOTAL
NUMBER	+	NUMBER	+	NUMBER	=	NUMBER

Collection system service lateral responsibility *(check one)*

- ☐ At main line connection only
- ☐ From main line to property line or easement/cleanout
- ☐ Beyond property line/clean out
- ☐ Other: _____

Combined Sewer Systems

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

Collection System Description

	Gravity Sewers	Force Mains
PIPE DIAMETER		
8 inches or less	% PERCENT	% PERCENT
9 - 18 inches	% PERCENT	% PERCENT
19 - 36 inches	% PERCENT	% PERCENT
>36 inches	% PERCENT	% PERCENT
PIPE MATERIALS		
Prestressed concrete cylinder pipe (PCCP)	% PERCENT	% PERCENT
High density polyethylene (HDPE)	% PERCENT	% PERCENT
Reinforced concrete pipe (RCP)	% PERCENT	% PERCENT
Polyvinyl chloride (PVC)	% PERCENT	N/A PERCENT
Vitrified clay pipe (VCP)	% PERCENT	N/A PERCENT
Ductile iron	% PERCENT	% PERCENT
Non-reinforced concrete pipe	% PERCENT	% PERCENT
Asbestos cement pipe	% PERCENT	% PERCENT
Cast iron	% PERCENT	% PERCENT
Brick	% PERCENT	% PERCENT
Fiberglass	% PERCENT	% PERCENT
Other (*Explain*)_____	% PERCENT	% PERCENT

Engineering Design (ED)

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

Satellite Communities and Sewer Use Ordinance (SUO)

SUO-01	Does the utility receive flow from satellite communities? IF NO, GO TO PAGE 6	YES	NO
SUO-02	What is the total area from satellite communities that contribute flow to the collection system? *(Acres or square miles)*	_____	
SUO-03	Does the utility require satellite communities to enter into an agreement? IF NO, GO TO QUESTION SUO-06.	YES	NO
SUO-04	Does the agreement include the requirements listed in the sewer use ordinance (SUO)?	YES	NO
SUO-05	Do the agreements have a date of termination and allow for renewal under different terms?	YES	NO
SUO-06	Does the utility maintain the legal authority to control the maximum flow introduced into the collection system from satellite communities?	YES	NO
SUO-07	Are standards, inspections, and approval for new connections clearly documented in a SUO?	YES	NO
SUO-08	Does the SUO require satellite communities to adopt the same industrial and commercial regulator discharge limits as the utility?	YES	NO
SUO-09	Does the SUO require satellite communities to adopt the same inspection and sampling schedules as required by the pretreatment ordinance?	YES	NO
SUO-10	Does the SUO require that satellite communities or the utility to issue control permits for significant industrial users?	YES	NO
SUO-11	Does the SUO contain provisions for addressing overstrength wastewater from satellite communities?	YES	NO

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

☐ Inspection standards ☐ Pretreatment requirements ☐ Building/sewer permit issues

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

☐ Fire and explosions hazards ☐ Corrosive materials ☐ Obstructive materials

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

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

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

☐ Infiltration and inflow ☐ Defects in service laterals located on private property

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

Organizational Structure (OC)

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

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

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

- ☐ Nature of work to be performed
- ☐ Examples of the types of work
- ☐ Minimum requirements for the position
- ☐ List of licenses required for the position
- ☐ Necessary special qualifications or certifications
- ☐ Performance measures or promotion potential

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

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

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

Internal Communications (IC)

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

☐ Regular meetings ☐ Bulletin boards ☐ E-mail ☐ Other (walkie talkie/pager)

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

IC-03 Are incentives offered to employees for performance improvements? YES NO

IC-04 Does the utility have an "Employee of the Month/Quarter/Year" program? YES NO

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

IC-06 Does the utility regularly communicate/coordinate with other municipal departments? YES NO

Budgeting (BUD)

BUD-01	What is the average annual fee for residential users?	$ _____
BUD-02	How often are user charges evaluated and adjusted? *(e.g. annually, biannually, etc.)*	_____
BUD-03	Are utility-generated funds used for non-utility programs?	YES NO
BUD-04	Are costs for collection system operation and maintenance (O&M) separated from other utility services such as water, storm water, and treatment plants? IF NO, GO TO QUESTION BUD-07.	YES NO
BUD-05	What is your average annual (O&M) budget?	$ _____
BUD-06	What percentage of the utility's overall budget is allocated to maintenance of the collection system?	_____ %
BUD-07	Does the utility have a Capital Improvement Plan (CIP) that provides for system repairs/replacements on a prioritized basis?	YES NO
BUD-08	What is your average annual CIP budget?	$ _____

BUD-09 What percentage of the maintenance budget is allotted to the following maintenance?

Predictive maintenance (tracking design, life span, and scheduled parts replacements)	_____ %
Preventive maintenance (identifying and fixing system weaknesses which, if left unaddressed, could lead to overflows)	_____ %
Corrective maintenance (fixing system components that are functioning but not at 100% capacity/efficiency; for example partially blocked lines)	_____ %
Emergency maintenance (reactive maintenance, overflows, equipment breakdowns)	_____ %

BUD-10	Does the utility have a budgeted program for the replacement of under-capacity pipes?	YES NO
BUD-11	Does the utility have a budgeted program for the replacement of over-capacity pipes?	YES NO

Training (TR)

TR-01 Does the utility have a formal job knowledge, skills, and abilities (KSA) training program? YES NO

TR-02 Does the training program address the fundamental mission, goals, and policies of the utility? YES NO

TR-03 Does the utility have mandatory training requirements identified for key employees? YES NO

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

TR-05 Does the utility provide training in the following areas? *(Check all that apply)*

- ☐ Safety
- ☐ Traffic control
- ☐ Public relations
- ☐ Routine line maintenance
- ☐ Record keeping
- ☐ SSO/Emergency response
- ☐ Confined space entry
- ☐ Electrical and instrumentation
- ☐ Pump station operations and maintenance
- ☐ Other
- ☐ Pipe repair
- ☐ CCTV and trench/shoring
- ☐ Bursting CIPP

TR-06 Are operator and maintenance certification programs used? IF NO, GO TO QUESTION TR-08 YES NO

TR-07 Are operator and maintenance certification programs required? YES NO

TR-08 Is on-the-job training progress and performance measured? YES NO

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

☐ None ☐ Periodic testing ☐ Drills ☐ Demonstrations

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

Manufacturer training _____ %

In-house classroom training _____ %

On-the-job training _____ %

Industry-wide training _____ %

Safety (SAF)

SAF-01 Does the utility have a written safety policy? YES NO

SAF-02 How often are safety procedures reviewed and revised? *(e.g. Semiannually, Annually, etc.)* YES NO

SAF-03 Does the utility have a safety committee? YES NO

SAF-04 Are regular safety meetings held with the utility employees? YES NO

SAF-05 Does the utility have a safety training program? YES NO

SAF-06 Are records of employee safety training kept up to date? YES NO

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

- ☐ Lockout/tagout
- ☐ Material safety date sheets (MSDS)
- ☐ Chemical handling
- ☐ Confined spaces permit program
- ☐ Trenching and excavations safety
- ☐ Biological hazards in wastewater
- ☐ Traffic control and work site safety
- ☐ Electrical and mechanical systems
- ☐ Pneumatic and hydraulic systems safety

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

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

- ☐ Rubber/disposable gloves
- ☐ Confined space ventilation equipment
- ☐ Hard hats, safety glasses, rubber boots
- ☐ Antibacterial soap and first aid kit
- ☐ Tripods or non-entry rescue equipment
- ☐ Fire extinguishers
- ☐ Equipment to enter manholes
- ☐ Portable crane/hoist
- ☐ Atmospheric testing equipment and gas detectors
- ☐ Oxygen sensors
- ☐ H_2S Monitors
- ☐ Full body harness
- ☐ Protective clothing
- ☐ Traffic/public access control equipment
- ☐ 5-minute escape breathing devices
- ☐ Life preservers for lagoons
- ☐ Safety buoy at activated sludge plants
- ☐ Fiberglass or wooden ladders for electrical work
- ☐ Respirators and/or self contained breathing apparatus
- ☐ Methane gas or optical vector (OVA) analyzer
- ☐ Lower explosion limit (LEL) metering

SAF-10 Are safety monitors clearly identified? YES NO

Customer Service (CS)

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

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

- ☐ Schools and universities
- ☐ Local officials
- ☐ Media
- ☐ Building Inspector(s)
- ☐ Community gatherings
- ☐ Businesses
- ☐ Citizens
- ☐ Public utility officials

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

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

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

- ☐ Door hangers
- ☐ Newspaper
- ☐ Fliers
- ☐ Signs
- ☐ Other
- ☐ None
- ☐ Public radio or T.V. announcements

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

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

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

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

- ☐ Personnel who received the complaint or request
- ☐ Name, address, and telephone number of customer
- ☐ Nature of the complaint or request
- ☐ Location of the problem
- ☐ To whom the follow-up action was assigned
- ☐ Date the follow up action was assigned
- ☐ Date of the complaint or request
- ☐ Cause of the problem
- ☐ Date the complaint or request was resolved
- ☐ Feedback to customer
- ☐ Total days to end the problem

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

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

Equipment and Collection System Maintenance (ESM)

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

ESM-02 Do equipment maintenance records include the following information? *(Check all that apply)*

- ☐ Maintenance recommendations
- ☐ Maintenance schedule
- ☐ Instructions on conducting the specific maintenance activity
- ☐ A record of maintenance on the equipment to date
- ☐ Other observations on the equipment

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

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

ESM-05 What percent of repair funds are spent on emergency repairs? _____ %

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

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

Equipment Parts Inventory (EPI)

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

Management Information System (MIS)

MIS-01 Does the utility have a management information system (MIS) in place for tracking maintenance activities? *(Either electronic or good paper files)* IF NO, GO TO PAGE 15. YES NO

MIS-02 Are the MIS records maintained for a period of at least three years? YES NO

MIS-03 Is the MIS able to distinguish activities taken in response to an overflow event? YES NO

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

- ☐ Complaint work orders
- ☐ Scheduled work orders
- ☐ Customer service
- ☐ Scheduled preventive maintenance
- ☐ Scheduled inspections
- ☐ Sewer system inventory
- ☐ Safety incidents
- ☐ Scheduled monitoring/ sampling
- ☐ Compliance/overflow tracking
- ☐ Equipment/tools tracking
- ☐ Parts inventory

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

- ☐ Accessing data and information
- ☐ Instructions for using the tracking system
- ☐ Updating the MIS
- ☐ Developing and printing reports

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

- ☐ Immediately
- ☐ Monthly
- ☐ Within one week of the “incident”
- ☐ As time permits

System Mapping (MAP)

MAP-01 Are "as built" plans (record drawings) or maps available for use by field crews in the office and in the field? YES NO

MAP-02 Is there a procedure for field crews to record changes or inaccuracies in the maps and update the mapping system? YES NO

MAP-03 Do the maps show the date the map was drafted and the date of the last revision? YES NO

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

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

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

- ☐ Size
- ☐ Shape
- ☐ Invert elevation
- ☐ Material
- ☐ Separate/combined sewer
- ☐ Installation Date

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

- ☐ Shape
- ☐ Depth
- ☐ Age
- ☐ Type (e.g., precast, cast in place, etc.)
- ☐ Material

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

Internal TV Inspection (TVI)

TVI-01 Does the utility have a standardized pipeline condition assessment program? YES NO

TVI-02 Is internal TV inspection used to perform condition assessment? IF NO, GO TO PAGE 17. YES NO

TVI-03 Are there written operation procedures and guidelines for the internal TV inspection program? YES NO

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

- ☐ Pipe size, type, length, and joint spacing
- ☐ Distance recorded by internal TV
- ☐ Results of the internal TV inspection (including a structural rating)
- ☐ Internal TV operator name
- ☐ Cleanliness of the line
- ☐ Location and identification of line being televised by manholes

TVI-05 Is a rating system used to determine the severity of the defects found during the inspection process? YES NO

TVI-06 Is there documentation explaining the codes used for internal TV results reporting? YES NO

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

Failed coatings or linings	____ %	Line deflection	____ %
House connection leaks	____ %	Joint separation	____ %
Illegal connections	____ %	Crushed pipes	____ %
Pipe corrosion (H_2S)	____ %	Collapsed pipes	____ %
Fats, oil, and grease	____ %	Offset joints	____ %
Broken pipes	____ %	Root intrusions	____ %
Debris	____ %	Minor cracks	____ %
Other	____ %		

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

Sewer Cleaning (CLN)

CLN-01 What is the system cleaning frequency? (the entire system is cleaned every "X" years) _____

CLN-02 What is the utility's plan for system cleaning (% or frequency in years)? _____

CLN-03 What percent of the sewer lines are cleaned, even high/repeat cleaning trouble spots, during the past year? _____ %

CLN-04 Is there a program to identify sewer line segments, with chronic problems, that should be cleaned on a more frequent schedule? YES NO

CLN-05 Does the utility have a root control program? YES NO

CLN-06 Does the utility have a fats, oils, and grease (FOG) program? YES NO

CLN-07 What is the average number of stoppages experienced per mile of sewer pipe per year? _____ %

CLN-08 Has the number of stoppages increased, decreased, or stayed the same over the past 5 years?

☐ Increased ☐ Decreased ☐ Stayed the same

CLN-09 Are stoppages plotted on maps and correlated with other data such as pipe size and material or location? YES NO

CLN-10 Do the sewer cleaning records include the following information? *(Check all that apply)*

☐ Date and time	☐ Method of cleaning	☐ Identity of cleaning crew
☐ Cause of stoppage	☐ Location of stoppage or routine cleaning activity	☐ Further actions necessary/initiated

CLN-11 If sewer cleaning is done by a contractor are videos taken of before and after cleaning? YES NO

Manhole Inspection and Assessment (MAN)

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

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

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

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

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

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

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

Pump Stations (PS)

PS-01	Are Standard Operation Procedures (SOPs) and Standard Maintenance Procedures (SMPs) used for each pump station?	YES	NO
PS-02	Are there enough trained personnel to properly maintain all pump stations?	YES	NO
PS-03	Is there an emergency operating procedure for each pump station?	YES	NO
PS-04	Is there an alarm system to notify personnel of pump station failures and overflow?	YES	NO
PS-05	Percent of pump stations with back up power sources	_____ %	

PS-06 Does the utility use the following methods when loss of power ocurs? *(Check all that apply)*

☐ On-site electrical generators ☐ Portable electric generators ☐ Alternate power source ☐ Other
☐ Vacuum trucks to bypass pump station

PS-07	Is there a procedure for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows?	YES	NO
PS-08	Are wet well operating levels set to limit pump start/stops?	YES	NO
PS-09	Are the lead, lag, and backup pumps rotated regularly?	YES	NO
PS-10	Are operation logs maintained for all pump stations?	YES	NO
PS-11	Are the original manuals that contain the manufacturers recommended maintenance schedules for all pump station equipment easily available?	YES	NO
PS-12	On average, how often were pump stations inspected during the past year?	YES	NO
PS-13	Are records maintained for each inspection?	YES	NO
PS-14	Average annual labor hours spent on pump station inspection	_____	
PS-15	Percent of pump stations with pump capacity redundancy	_____ %	
PS-16	Percent of pump stations with dry weather capacity limitations	_____ %	
PS-17	Percent of pump stations with wet weather capacity limitations	_____ %	
PS-18	Percent of pump stations calibrated annually	_____ %	
PS-19	Percent of pump stations with permanent flow meters	_____ %	

Capacity Assessment (CA)

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

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

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

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

CA-09 Do the flow meter checks include the following? *(Check all that apply)*

- ☐ Independent water level
- ☐ Velocity reading
- ☐ Downloading data
- ☐ Checking the desiccant
- ☐ Cleaning away debris
- ☐ Battery condition

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

CA-11 Do the flow monitoring records include the following? *(Check all that apply)*

- ☐ Descriptive location of flow meter
- ☐ Frequency of flow meter inspection
- ☐ Type of flow meter
- ☐ Frequency of flow meter calibration

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

Tracking SSOs (TRK)

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

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

TRK-03 Does the utility document and report all SSOs regardless of size? YES NO

TRK-04 Does the utility document basement backups? YES NO

TRK-05 Are there areas that experience frequent basement or street flooding? YES NO

TRK-06 Approximately what percent of SSOs discharges were from each of the following in the last 5 years?

Manholes _____ %
Main and trunk sewers _____ %
Structural bypasses _____ %
Pump stations _____ %
Lateral and branch sewers _____ %

TRK-07 Approximately what percent of SSOs discharges were caused by the following in the last 5 years?

Debris buildup _____ %
Root intrusion _____ %
Excessive infiltration and inflow _____ %
Collapsed pipe _____ %
Capacity limitations _____ %
Fats, oil, and grease _____ %
Vandalism _____ %

TRK-07A What percentage of SSOs were released to:

Soil _____ %
Basements _____ %
Paved area _____ %
Surface water (rivers/lakes/streams) _____ %
Coastal, ocean, beaches _____ %

TRK-07B For surface water releases, what percent are to areas that could affect:

Contact recreation (beaches, swimming, areas) _____ %
Drinking water sources _____ %
Shellfish growing areas _____ %

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

TRK-09 Are pipes with chronic SSOs being monitored for sufficient capacity and/or structural condition? YES NO

TRK-10 Prior to collapse, are structurally deteriorating pipelines being monitored for renewal or replacement? YES NO

Overflow Emergency Response Plan (OERP)

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

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

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

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

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

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

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

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

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

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

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

- ☐ Date and time
- ☐ Location
- ☐ Any remediation efforts
- ☐ Cause s)
- ☐ How it was stopped
- ☐ Estimated flow/volume discharged
- ☐ Names of affected receiving water(s)
- ☐ Duration of overflow

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

Smoke and Dye Testing (SDT)

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

Hydrogen Sulfide Monitoring and Control (HSMC)

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

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

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

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

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

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

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

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

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

☐ Aeration ☐ Chlorine ☐ Potassium permanganate
☐ Iron salts ☐ Sodium hydroxide ☐ Biofiltration
☐ Enzymes ☐ Hydrogen peroxide ☐ Other
☐ Activated charcoal canisters

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

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

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

Infrastructure Security

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