

# **City of West Allis, Wisconsin Capacity, Management, Operations, and Maintenance (CMOM) Program**

## **Management Plan and Asset Management Program**



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Engineering Department  
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West Allis, Wisconsin 53214**

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Department of Public Works  
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## **1. INTRODUCTION**

In preparation of the impending Sanitary Sewer Overflow (SSO) rule and the Capacity, Management, Operations and Maintenance (CMOM) component of the proposed rule by the United States Environmental Protection Agency (USEPA) and the State of Wisconsin Department of Natural Resources (WDNR), the Milwaukee Metropolitan Sewerage District (MMSD) developed a CMOM Program for its wastewater collection system. The USEPA's proposed SSO regulation goal is to reduce health and environmental risks by reducing SSO occurrences. MMSD, recognizing the interdependency between its system and the satellite municipality systems for successfully meeting the USEPA SSO regulation goal, developed a regional CMOM approach and is cooperatively working with the 29 satellite municipalities to develop their CMOM Programs.

The Management Plan describes the means and methods the City of West Allis has in place to ensure complete execution of a CMOM Program. This is the general format of the Management Plan and is derived from the proposed USEPA SSO regulations. The municipal systems served by MMSD developed a Management Plan that will support CMOM Program development and implementation. Specifically, the City of West Allis Management Plan satisfies the following requirement of the Stipulation Agreement, signed with the State of Wisconsin in May 2002:

*7.A. Management Plan.* A plan that outlines the goals of the CMOM, the organizational structure to manage it, the legal authority to control Infiltration and Inflow (I/I), design criteria, benchmarking data and performance measures to attain the goals. A significant effort associated with the Management Plan was the development of an asset management (AM) Program that provides for both programmed maintenance and tracking of the asset condition to enable early recognition of expansions or major rehabilitation necessary to avoid capacity limitations.

There are four objectives the Management Plan satisfies. First, it satisfies the requirements stated in the Stipulation Agreement. Second, it satisfies MMSD Rules & Regulations pertaining to CMOM Programs of all MMSD satellite municipalities. Third, it satisfies Wisconsin Department of Natural Resources (WDNR) requirements of the WPDES Permit. Fourth, it serves to achieve the larger CMOM Program goals that the City of West Allis has established.

## 2. DESCRIPTION OF THE CITY OF WEST ALLIS

### 2022 ORGANIZATIONAL CHART CITY OF WEST ALLIS

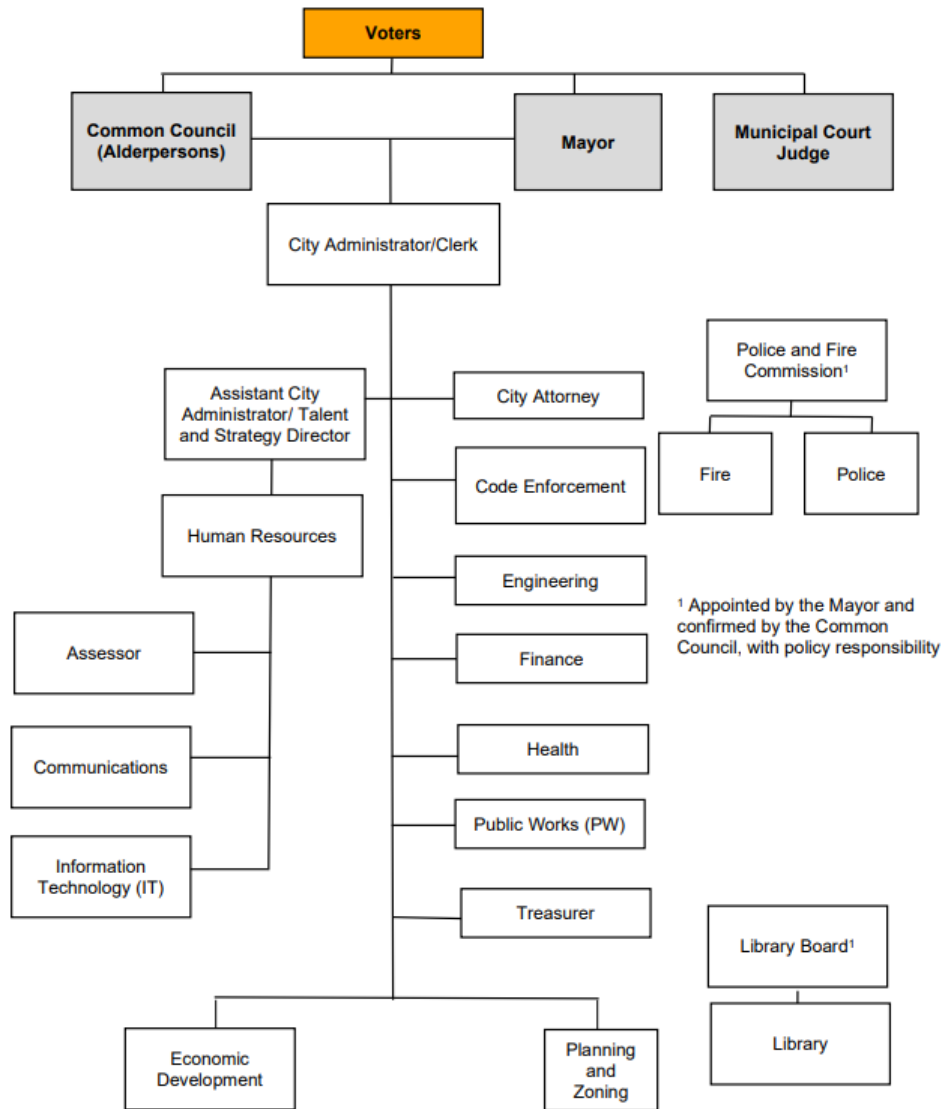


Figure 1: City of West Allis' Organizational Chart

The Public Works Department is principally responsible for the operation and maintenance of the sanitary sewer collection system. The Engineering Department assist the Public Works Department by providing cleaning and inspection schedules, monitoring and evaluating infrastructure condition, and improving the sanitary sewer system for inflow/infiltration (I/I) reduction. The Department of Public Works strives to ensure WDNR permit compliance as it applies to sanitary sewer overflows (SSOs).

Sewer services are funded by user rates that are based on operational and capital needs. The City of West Allis reviews budgets and rates annually, making adjustments as necessary to ensure adequate funding exists for the needs identified by staff. Presently the City plans for capital needs annually for storm and sanitary sewers, and five years into the future for street paving during each budget/rate cycle. The annual capital budget for the Sanitary Sewer System is approximately \$3.7 million. The annual sanitary operation budget for the sanitary system is approximately \$6.8 million.

2022 ORGANIZATIONAL CHART CITY OF WEST ALLIS  
PUBLIC WORKS – STREETS & SANITATION DIVISION

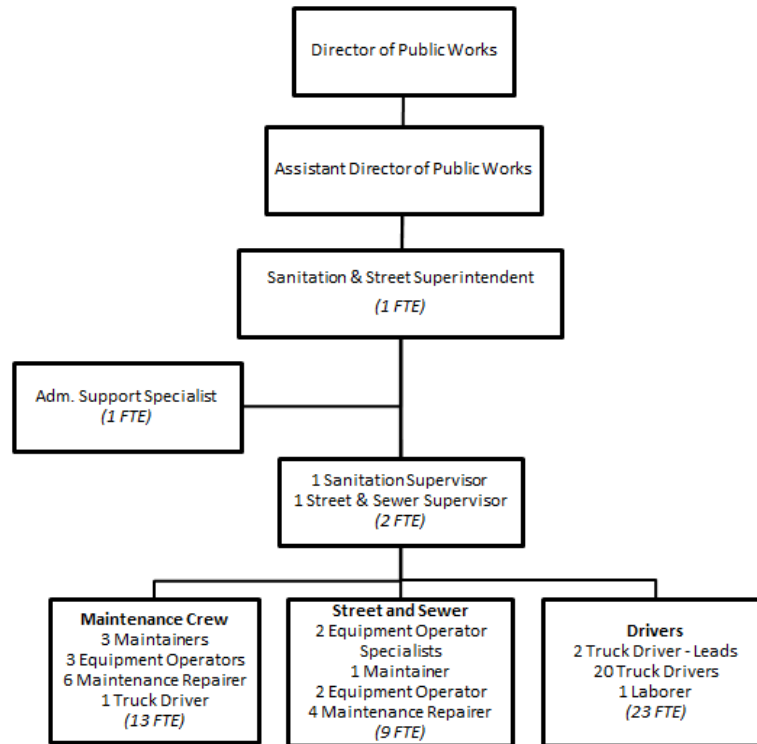


Figure 2: City of West Allis Public Works - Sanitation & Streets Division Organizational Chart

The Director of Public Works leads the Public Works Department. There are six divisions of Public Works including: Building and Electrical Services, Fleet Services, Forestry & Grounds, Inventory Services, Sanitation & Streets, and Water. The Sanitation & Streets Division is responsible for sewer operation and maintenance, which is headed by the Superintendent of Sanitation & Streets. There are a total of 49 full-time equivalent positions in the Sanitation & Street Division, of which approximately 9 are related to the collection system.

Two Sanitation & Streets Division crews are assigned the responsibility for cleaning sewers and inspecting manholes. The City is on a 24 month cycle for sanitary sewer cleaning and a 48 month cycle for manhole inspection. Closed circuit televising (CCTV) of sewers is contracted out with approximately 100,000 - 130,000 feet televised annually, which represents about 12.5% of the City's sanitary sewers. The CCTV information is retained in digital format and linked to our sanitary system map in the City's Geographic Information System. (GIS) The inspections are reviewed by Engineering staff, who then prioritizes infrastructure repair and rehabilitation. Repairs are handled by means of a work order system and are prioritized relative to urgency, need and funding. The Sanitation & Streets Division performs as many repairs and rehabilitations of manholes as can be handled by city forces. Sewer main work and the remainder of the manhole repairs are contracted out through the Engineering Department.

Within the City's Geographic Informational System (GIS) all of the data for the sanitary system is maintained. The maintenance of the sanitary system, such as cleaning and inspecting, is tracked and scheduled using both the City's GIS and a newly implemented program called AssetWorks.

West Allis conducts flow-monitoring in conjunction with MMSD and temporary flow meters are / have been located throughout the City. Flow monitoring is completed when required for special studies.

# Satellite Municipality CMOM Management Plan

City of West Allis

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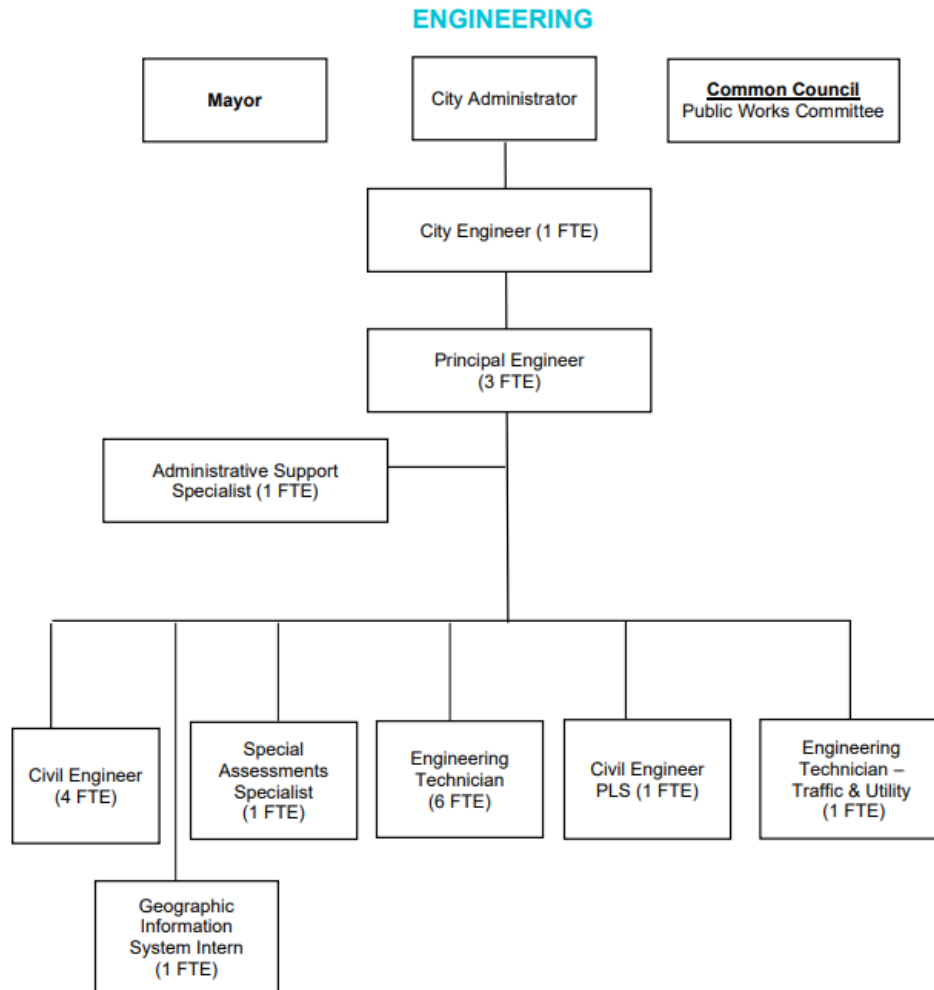


Figure 3: City of West Allis Engineering Department Organizational Chart

The Engineering Department is headed by the City Engineer who manages the Principal Engineers. One of the Principal Engineers provides oversight of the CMOM program. The Engineering Department provides sewer scheduling to the Sanitation & Streets Division for main cleaning and manhole inspections. Engineering also manages the City's televising program and evaluates all of the post-televising work.

These positions, as shown above in Figure 3, are supported by a staff of engineers and technicians including a special assessment clerk and a traffic utility specialist. There are a total of 19 full-time equivalent positions within the City of West Allis Engineering Department.

Position descriptions exist for all employees and are reviewed regularly and updated as necessary.

### **3. REGULATORY REQUIREMENTS FOR CMOM IMPLEMENTATION**

In May 2002, MMSD entered into a stipulation agreement with the Wisconsin Department of Natural Resources (WDNR). Among other items, the Stipulation Agreement requires MMSD and satellite municipalities to implement a CMOM.

CMOM became a requirement of the City's WDNR Wisconsin Pollutant Discharge Elimination System (WPDES) permit as of October 01, 2013.

#### **3.1 Stipulation Agreement and WPDES Permit References to CMOM**

The Stipulation Agreement refers to CMOM in two locations: a section titled "Capacity, Management, Operation and Maintenance (CMOM) Program" which are items 6 and 7 of the agreement, and a section titled "Satellite Municipalities" which is item 9 of the agreement. These items are described in Appendix A.

Section 2.4 of the City's WPDES permit requires that all permittees shall implement a capacity, management, operation maintenance program by August 1, 2016.

#### **3.2 CMOM Regulations Requirements for Management Plan**

In accordance with federal and state regulations, this Management Plan addresses the following issues pertaining to wastewater conveyance in the separated sewer system of the City of West Allis:

- Goals and objectives of CMOM
- Organizational structure to manage CMOM
- Legal authority required to control I/I
- Existing design criteria
- Benchmarking data for utility performance
- Performance measures to attain CMOM goals
- Reporting methods for CMOM Compliance reviews

Each of these items is described in detail in this Plan. In addition, this Management Plan for the City of West Allis contains a CMOM Program Summary.

## **4. GOALS OF THE CMOM PROGRAM**

Goals and objectives for the City of West Allis CMOM Program have been established in order to provide justification for activities and proof of compliance. The program goals and objectives include those that are required by regulations or other legal constraints and those making the program consistent with other City of West Allis projects and programs. This Management Plan documents these goals in such a way that they are transparent, produce direct results, and are quantifiable. Sections 4.1 through 4.3 present goals and objectives that have been developed by regulatory agencies and MMSD. Section 4.4 presents the goals and objectives that are specific to the City of West Allis.

### **4.1 Regulatory and Legal Considerations for Goals and Objectives**

Regulatory considerations come from three key sources: the draft USEPA SSO regulations, the WDNR CMOM regulations, and the Stipulation Agreement.

- Regulatory compliance
- Schedule for completion
- SSO elimination
- CMOM Program definition, implementation, evaluation, and improvement
- Satellite municipality involvement

Specifically, the draft federal and state regulations express five general standards that indicate CMOM compliance for a wastewater utility:

1. Properly manage, operate and maintain, at all times, all parts of collection system that the utility owns or over which the utility has operational control
2. Provide adequate capacity to convey base flows and peak flows for all parts of the collection system the utility owns or has operational control
3. Take all feasible steps to stop and mitigate the impact of SSOs in portions of the collection system the utility owns or have operational control
4. Provide notification to parties with a reasonable potential for exposure to pollutants associated with the overflow event
5. Develop a written summary of the City's CMOM Program and make the program and its audit available to any member of the Public upon request

These five general standards serve as a minimum set of objectives for the City of West Allis' CMOM Program.

### **4.2 MMSD Wastewater Collection CMOM Program Goal**

The goal statement for the overarching metropolitan collection system reflects MMSD desired outcomes that are either more specific than the regulations or better address local issues that threaten CMOM compliance. MMSD has stated their organization's CMOM goal as follows:

In order to comply with federal and state regulations, by 2007, MMSD implemented a CMOM Program with the intent of eliminating all SSOs except those caused by circumstances beyond the reasonable control of MMSD (as defined by CFR 122.42 (f)), and minimizing combined sewer overflows in accordance with the operating permit.



This CMOM goal statement was amended to MMSD Rules & Regulations, Chapter 3 on December 17, 2007. MMSD also developed objectives for achieving this goal as stated in Section 4.3.

### **4.3 MMSD Objectives for CMOM Compliance**

The following objectives were established by MMSD in its Management Plan strategy, published as a component of the CMOM Compliance Strategic Plan in June 2007. The City of West Allis also established CMOM Program Goals, Objectives, and Strategies in its Draft Strategic Plan, completed in November 2007. For each MMSD objective, the City of West Allis correlates the relevance between the MMSD objective and the City of West Allis' objective for their sanitary collection system.

*“Establish an organizational structure which serves the goals of SSO elimination and CMOM compliance.”* Achieving this objective will require dedicating and organizing human resources around activities that reduce SSOs. Leadership and group participation will be key features. The working members will need a mission and must be assigned group and individual responsibilities. This organization would ideally be linked or at least heavily coordinated with the organization and individuals involved in the Asset Management Program.

The City of West Allis has established an organizational structure, as indicated in Figures 1-3 for the management, operation and maintenance of the City's sanitary sewer collection system. The Director of Public Works/City Engineer facilitates coordination and communication with departments of the City of West Allis, especially the Development, Code Enforcement, and Zoning and Health Departments. The City of West Allis has established goals for their CMOM program which include SSO minimization and other items as included in Section 4.4:

*“Establish legal authorities in MMSD rules that address the flows in MMSD and satellite systems, including I/I and industrial discharges that may impact system operation.”* Presently, MMSD uses the most recently adopted Facilities Plan to manage satellite municipality flows via a basin capacity allocation process which considers base and peak flows. The current process for administering capacity is articulated in MMSD Rules & Regulations. This process will be under review during the ongoing 2050 Facilities Plan. It will be important for supporting strategies to recognize activities undertaken by municipalities to reduce I/I in their systems.

The City of West Allis is subject to WDNR standards and MMSD Rules and Regulations regarding the regulation of base and peak sewer flows, I/I, and construction standards. The WDNR has established regulations, incorporated into the Administrative Code of the State of Wisconsin, which regulate the construction, use and maintenance of public and private sewer systems. Most notably are:

- NR 110 – Sewerage Systems
- NR 120 – Priority Watershed and Priority Lake Program
- NR 151 – Runoff Management
- NR 152 – Model Ordinances for Construction Site Erosion Control and Post-Construction Storm Water Management
- NR 155 – Urban Nonpoint Source Water Pollution Abatement and Storm Water Management Grant Program
- NR 195 – River Protection Grants

## Satellite Municipality CMOM Management Plan

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- NR 210 – Sewage Treatment Works
- NR 216 – Storm Water Discharge Permits
- NR 328 – Shore Erosion Control Standards
- SPS 382 – Design, Construction, Installation, Supervision, Maintenance and Inspection of Plumbing

Some of MMSD’s rules and regulations, applicable to CMOM, are included in the following documents, which may be obtained from the MMSD website:

- Infiltration and Inflow Control
- System of Main and Intercepting Sewers, Extensions and Sewer Area Boundaries
- Connecting to District Sewers
- Approval of Sewer Plans
- Miscellaneous Provisions Applicable to Sewer Construction
- Inspection of Sewer and Drainage Construction
- Basic Data for Sewer Design
- Connections to Sanitary Sewers from Private Sewage Disposal Systems
- Disposal of Septic Tank and Holding Tank Wastes
- Surface Water and Storm Water Rules Guidance Manual.

In addition to the WDNR and MMSD requirements, the City of West Allis has a Sewer Use Ordinance and Plumbing Code which supersede the requirements of the WDNR and MMSD. The City also has the rights to operate and maintain Right-Of-Way and easements within the City. This ordinance, Rights-Of-Way and easements and their enforcement, give the City of West Allis the authority and jurisdiction to regulate, monitor, service and maintain the storm and sanitary sewers within the limits of the City.

*“Establish practices that serve to improve system performance, avoid preventable failures, and prioritize CMOM compliance activities.”* This objective is critical to achieving regulatory compliance with CMOM. As additional support, MMSD has established a Rapid Response team to review emerging situations in the system that could lead to sewer overflows and take action to prevent them. Already MMSD has or will be implementing strategies that certify standards for design, construction, operations, and maintenance; take employee and customer input on the CMOM Program; establish organizational performance measures; and assist satellite municipalities with CMOM compliance activities.

The West Allis Engineering Department reviews capacity in its sewersheds, and works with MMSD on its capacity criteria for redevelopment. Under normal situations, typical per capita and diurnal flow rates are used to determine design flows and the system is sized accordingly. In problem areas, flows are estimated based on observed surcharges or through the use of coefficients derived from sewershed flows as shown in MMSD’s Facilities Plan.

Information obtained from televising and manhole inspections is reviewed by the Engineering Department. Necessary actions and repairs of structural deficiencies are prioritized based on the severity of the problem and whether or not immediate action is necessary. The City of West Allis has implemented a standardized operating procedure for addressing sanitary sewer breaks.

*“Lower overall cost of wastewater collection system asset ownership while achieving defined service levels.”* This objective deals directly with a critical Asset Management concept. To achieve the objective, MMSD will need to follow the steps related to

establishing Asset Management as a core business practice. These steps include defining current activities, benchmarking them against industry best practices, identifying priority areas for improvement, and establishing a plan for implementing Asset Management. This process will both lower the cost of asset ownership and help to better define service levels for the systems MMSD owns and operates.

As part of the City's CMOM Strategic Plan, the City identified the following objectives and strategies to minimize the occurrence of overflows for their sanitary sewer collection system:

Those objectives and strategies are listed in the Draft CMOM Strategic Plan.

The City of West Allis has initiated the CMOM Program process and is familiar with the processes that measure performance. As part of the City's Strategic Plan, the City included the following objectives as part of their Communication and Audit Plan:

- Facilitate internal reporting on CMOM Program progress to employees.
- Provide information on CMOM Program progress to stakeholders and solicit suggestions and obtain stakeholder input.
- Report on short-term, long-term, and cyclical CMOM Program goal attainment.
- Coordinate with other municipality and MMSD communications initiatives.
- Satisfy CMOM regulatory requirements for program communications, including any requirements of the Satellite Stipulation.
- Allow for periodic review and changing of CMOM Program according to input and benchmarking data.
- Establish processes for changing the CMOM Program according to results of periodic review with respect to performance measures.
- Reflect CMOM implementation status within the audit process.
- Provide data to the Communication Plan regarding plan changes in order to demonstrate that the CMOM Program is being regularly updated.

#### **4.4 City of West Allis Goals and Objectives for CMOM Program**

The municipality-specific goals and objectives, developed by the Engineering Department, for the City of West Allis are listed below:

- Comply with the conditions of the WPDES permit
- Minimize the occurrence of overflows
- Improve or maintain system reliability
- Reduce the potential threat to human health from sewer overflows
- Provide adequate conveyance capacity during peak flow events
- Manage infiltration and inflow
- Protect collection system worker health and safety
- Operate a continuous CMOM Program

The Draft CMOM Strategic Plan (Chapter 2) provided the procedures and strategies for achieving these goals.

## **5. ORGANIZATIONAL STRUCTURE TO MANAGE CMOM**

A fully implemented CMOM Program will require participation on all levels within the City of West Allis. The amount of involvement will range from individuals dedicated to the program to those that are only peripherally or occasionally involved. The strategy for satisfying this stipulation objective considers whether the existing City of West Allis organizational structure is conducive to achieving CMOM compliance, and if not, what changes are warranted for effective deployment of the CMOM Program. Measures of compliance will evaluate whether administrative, management, and operations and maintenance staff are clearly identified, and whether lines of authority and chains of communication are delineated for planned and unplanned (emergency) events.

If maintenance activities are performed through contracted work, the selected contractor shall provide departmental organization charts that describe the functional nature of their organization.

Strategies to establish an organizational structure which serves the goals of SSO elimination and the CMOM compliance include:

- Assign CMOM Program Management responsibilities for overseeing the CMOM Program. Responsibilities include managing assigned staff, providing technical advice and guidance related to sewer projects, and reviewing program standards and specifications to ensure compliance with established regulatory requirements.
- Establish a CMOM work team consisting of key personnel within the Department of Public Works.
- Assign the CMOM work team the task of reviewing the CMOM responsibility in each Department on a periodic basis.
- Utilize the City of West Allis Mission Statement for CMOM, and its CMOM work team, that describes how it will sustain the CMOM Program for the City of West Allis and coordinate with MMSD.

The City of West Allis' CMOM Mission Statement is as follows:

“To efficiently collect and convey all of our customers’ wastewater in the most cost-effective manner while remaining in compliance with WPDES permits, Clean Water Act, Wisconsin Law, and MMSD Rules and Regulations.”

Each of these strategies is discussed in the following sections. The City of West Allis Department of Public Works organization chart is presented in Figure 2 on page 4.

### **5.1 CMOM Program Management Responsibility**

The City of West Allis has fulfilled the requirements for CMOM organizational structure by utilizing existing staff and redefining job responsibilities accordingly. Specifically, the designated underground Principal Engineer will serve as the CMOM Program Manager.

The full duties of the CMOM Program manager include:

- Oversee and direct the activities of the City’s CMOM Program
- Prepare all reports required of the Program
- Serve as custodian for all reports and records associated with the Program

## **5.2 CMOM Program Work Team**

Additional CMOM responsibilities are assigned as follows:

- Sewer System Operations: The Director of Public Works along with the Sanitation & Streets Superintendent are responsible for daily operation of the sanitary sewer system.
- Sewer System Maintenance: The Director of Public Works along with the Sanitation & Streets Superintendent are responsible for daily planned and corrective sanitary sewer system maintenance activities.
- Sewer System Capacity Assessment: The City Engineer along with a Principal Engineer are responsible for tracking the capacity of the sanitary sewer system relative to actual and planned base and peak flows.
- Sewer System Condition Assessment: The City Engineer along with a Principal Engineer are responsible for assessing the condition of the sanitary sewer system assets, including the I/I reduction program.

Figures 2 and 3, located on pages 3 and 4 respectively, present the organizational structure for each of the departments that contain these staff personnel. Both of these groups, the CMOM Program Manager and the Work Team, are supported by additional activities and personnel within their respective departments. However, when necessary, interdepartmental coordination between City forces occurs to provide further support.

## **6. LEGAL AUTHORITY TO CONTROL I/I**

Legal authorities established by the City of West Allis that address collection system flows, including I/I and industrial discharges that may impact system operation, include the following:

- The City of West Allis Plumbing Code
- The City of West Allis Sewer Use Ordinance

Additionally, the MMSD legal authorities concerning I/I control are provided through its Rules & Regulations - Chapter 3, “Infiltration and Inflow Control.” The MMSD Rules & Regulations address I/I control, construction standards, satellite collection systems, and other issues that relate to its mission. MMSD regulations seek to: Conserve sewerage system capacity; establish a continuing duty for users of the sewerage system and governmental units to minimize I/I; reduce the exposure of the public to pathogens carried by wastewater; and minimize the probability, duration and magnitude of overflows. Within these rules, MMSD imposes no quantitative limits on I/I for existing sewer service areas.

## **7. DESIGN CRITERIA**

The City of West Allis has established design criteria for sewer facility construction in its service area through the Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition, December 22, 2003 with Addendum No. 1 (December 22, 2004) and Addendum No. 2 (April 22, 2008), with latest addition of City of West Allis Addendum. MMSD has developed additional design criteria presented in Chapter 2, “Planning, Design, and Construction of Sewers and Ancillary Facilities,” of the Rules & Regulations. These MMSD Rules pertain to “any person or governmental unit who is planning, designing, or constructing a sewer or ancillary facility within the MMSD’s planning area.” Specifically, the rules describe requirements for sewer system and construction plans, construction activity, direct connections to MMSD interceptor sewers, and design requirements for constructing sewers in the MMSD service area.

The City of West Allis has established practices that serve to improve system performance, avoid preventable failures, and prioritize CMOM compliance activities.

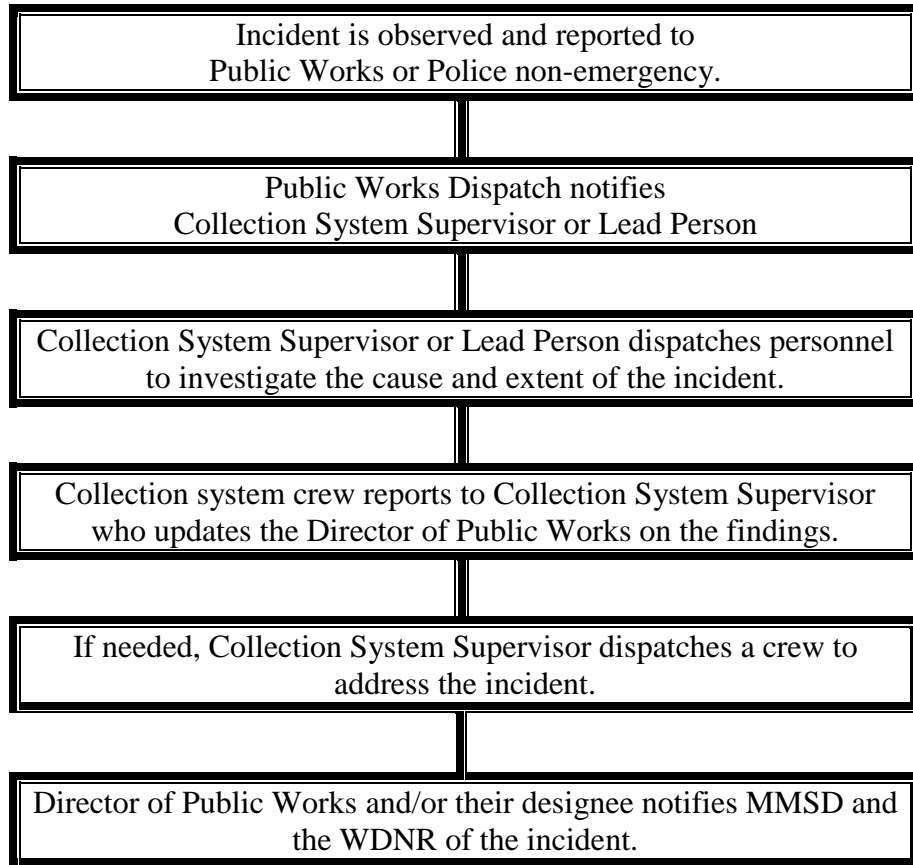
## 8. CMOM PROGRAM SUMMARY

This section describes the City of West Allis' CMOM Program in summary. The descriptions provided are in addition to previous sections regarding CMOM Program Goals, Organizational Structure to Support CMOM, and Legal Authorities.

### 8.1 Sanitary Sewer Overflow Response and Reporting

The City of West Allis currently has a Standard Operating Procedure (SOP) that addresses flood control and provides responses to both sanitary and storm sewer concerns. These SOP's are incorporated into the Overflow Response Plan (ORP).

The chain of communication utilized by the City of West Allis, as described in the Draft CMOM Strategic Plan, is as follows:





## **8.2 Maintenance Facilities and Equipment**

The City of West Allis has a documented sewer cleaning schedule. All sanitary sewers within the City of West Allis are cleaned on a bi-annual schedule. However, problem areas have been identified that require more frequent cleaning. These areas are prioritized and documented to facilitate a more aggressive cleaning schedule.

## **8.3 Collection System Mapping**

According to a review of the City of West Allis' system, the City owns over 908,250 feet of sanitary sewer collection system mains. The most critical elements of the gravity system are shallow manholes and pipes at elevations very close to those of nearby basements. The City does not own or operate any sanitary lift stations and has only one (1) SSO diversion location, at 70<sup>th</sup> Street and West Burnham Street. The City has one 8-inch diameter sanitary siphon and three in-line storage systems. The City has no overflow gates.

The City's storm and sanitary sewers are currently mapped in their geographic informational system (GIS). This information is distributed internally and available externally on The City of West Allis webpage. The mapping is used for CIP development and system maintenance. The City has achieved a "High Defined" level for their system mapping, as defined in the CMOM Strategic Plan.

## **8.4 CMOM Information Management**

At some point in the future, the City may determine that establishing I/I limits for areas within its system are necessary to prevent local system SSOs, basement backups, or restrictions to growth. In such a case, the City will develop an ongoing program to detect and reduce excessive I/I levels in its system. Currently, the City of West Allis does not have any areas of concern for SSO's, yet plans to develop an I/I reduction program to understand the current level of I/I in the system and to establish a program to reduce I/I in situations where I/I results in service problems. The City has utilized flow monitoring of the collection system in conjunction with MMSD to assist in the operation of the various components of the system. The City also uses flow data for analyzing system performance, including the sizing of conveyance system facilities. The City utilizes forms, GIS and frequent database updates to maintain and ensure the validity of the recorded information on the sanitary sewer collection system.

## **8.5 Collection System Preventive Operation and Maintenance Activities**

The City of West Allis, located in Milwaukee County, is a satellite municipality served by MMSD through 86 Metropolitan Interceptor System (MIS) connections. The City serves approximately 60,000 people through its collection system consisting of approximately 909,000 linear feet (172 linear miles) of 8- to 24-inch diameter sanitary sewers. The Public Works Department is responsible for sewer maintenance. Maintenance is conducted through the Sanitation & Streets Division. Sewer televising has historically been contracted out, but is expected to be completed in-house due to the procurement of new equipment. Approximately 114,000 feet per year (approximately 12.5% of the system) is televised, resulting in an 8 year televising cycle. The City also has procedures for conducting smoke testing and dyed water flooding when such action is warranted. The City inspects manholes on a routine basis and documents the findings in a database. The City does not have a history of corrosion problems.

The City of West Allis has a geographic informational system (GIS) database for its storm and sanitary sewer systems which includes information such as pipe material, size and year installed. The televised inspection and report form is also linked to the sewer in the GIS. Currently, the maintenance system is a combination of a computer-based and paper-based system. The City performs maintenance on the sanitary sewer collection system when warranted due to concerns addressed through visual verification from televising, manhole inspections, basement backups, SSO's and other means. The City does not own or operate any lift stations.

The City of West Allis has standardized operation and maintenance procedures to help facilitate the completion of the scheduled maintenance activities. The City has achieved a "High Defined" level for their preventative O&M activities, as defined in the Draft CMOM Strategic Plan.

## **8.6 System Evaluation and Capacity Assurance Planning (SECAP)**

The City of West Allis Engineering Department performs capacity analysis as part of the Capital Improvement Program. A capacity analysis is completed in areas of sewer replacements as well as in areas where a problem has been documented. The City does not have a comprehensive model of their entire collection system and does not plan to implement modeling in the near future. The City plans to understand the current level of I/I in the system through flow monitoring and will establish a program to reduce I/I in situations where I/I results in service problems. There are current areas of I/I concern within the sanitary collection system resulting in ten of the City's sewersheds being non-compliant with MMSD's wet weather peak flow requirements in 2022. The City's long term scheduled Capital Improvement Program (CIP) projects involve maintenance, repair and replacement of the collection system, as identified by the routine televising. Currently, the City's sanitary sewer CIP program is budgeted at approximately \$3,700,000 annually, based on 2022 figures.

## **8.7 Collection System Structural Deficiencies Action Plan**

Currently, the City's maintenance system is a combination of a computer-based and paper-based system. The City performs maintenance on the sanitary sewer collection system when warranted due to concerns addressed through visual verification from televising, manhole inspections, basement backups, SSO's and other means. The City addresses each structural deficiency when identified. Each deficiency is prioritized and scheduled for either open-cut or trenchless repair.

## **8.8 Collection System Personnel Training**

The Overflow Response Plan (ORP) identifies specific training activities that will be required of key individuals responsible for various aspects of the collection system. The City has completed preparedness training and sent all applicable managers to a specialized preparedness training course, NIMS – National Incident Management System. The City of West Allis requires initial and refresher technical training for employees and the City sends employees to conferences and seminars for additional training and to maintain current technical understanding. The City is at a "High Defined" level, per the 2015 CMOM Strategic Plan, for items regarding collection system personnel training.

## **8.9 Critical Equipment and Replacement Parts Inventory**

The City of West Allis has a computerized inventory of their equipment and spare parts, including information such as location, date of purchase, number of hours of use, lifetime and warranty information and expected replacement date. This information is extremely useful and critical when responding to emergency situations.

### **8.10 Sewer System Component Installation, Rehabilitation and Repair Requirements and Standards**

The City of West Allis has established design criteria for sewer facility construction in its service area through the Standard Specifications for Sewer and Water Construction in Wisconsin, Sixth Edition, December 22, 2003 with Addendum No. 1 (December 22, 2004) and Addendum No. 2 (April 22, 2008) along with the current edition of the West Allis Sewer Addendum. Engineering Department staff design and inspect all sewer extensions and rehabilitations completed within the City. System inspection reports are reviewed, prioritized and tied to the City's Capital Improvements Program (CIP).

### **8.11 Sewer System Component Installation, Rehabilitation and Repair Inspection and Testing Provisions**

The City assigns dedicated inspection staff to every construction project. In situations where City forces are unable to sufficiently inspect underground utility installations the inspection process is contracted out. The Inspectors prepare all required documentation and facilitate the necessary testing of the collection system improvements per the Standard Specifications for Sewer and Water Construction in Wisconsin.

### **8.12 Public Outreach Efforts**

The Communication Plan (CP) articulates the process for reporting to various stakeholders the implementation activities and performance of the CMOM Program. This Plan states the objectives for communications and describes a set of complementary strategies for achieving those objectives. Performance measures for communications strategy implementation are also provided in the Plan.

The recommended objectives of the CP have been achieved as follows:

- Facilitate internal reporting on CMOM Program progress to employees
- Provide information on CMOM Program progress to stakeholders
- Report on short-term, long-term, and cyclical CMOM Program actions
- Coordinate with other municipality and MMSD communications initiatives
- Satisfy CMOM regulatory requirements for program communications, including any requirements of the Satellite Stipulation

The City of West Allis has developed a CP, assigned staff responsibilities, and will provide and schedule CMOM briefings to regulators (WDNR and MMSD) as well as the City Common Council, Engineering Department, Public Works Department and Health Department. This information will also be available to the general public through the City's website.

## **9. PERFORMANCE MEASURES TO DETERMINE GOAL ATTAINMENT**

A critical aspect of CMOM implementation is establishing performance measures that are aligned with the goals and objectives of the Program. Properly worded goals can be supported by quantifiable objectives, with each objective constructed so that performance measures can be related back to them.

The CMOM Compliance Strategy proposed in this document states that for each goal, objective, and strategy, a sufficient number of performance measures should be tracked by the City of West Allis in order to establish progress toward achieving the stated program goal. This section outlines the process followed for identifying the performance measures, including any sources of potential benchmarking data (discussed further in Section 10).

Performance measures fit into a category of organization commonly referred to as “benchmarking.” Benchmarking enables an agency to conduct internal assessments of its programs, compare with other similar agencies, and attempt to answer questions such as:

- Where are we now?
- Where do we want to go?
- How are we going to get there?
- When are we going to get there?

Performance measures support the benchmarking process by describing the performance of the system and programs based on measurable data. The City of West Allis performance measures for the CMOM Program were selected based on the following criteria:

- Supports tracking progress toward achieving CMOM goals and objectives
- Data is readily available
- Data is useful for internal trending
- Data is useful for comparison to an external industry standard or data from similar organizations

### **9.1 City of West Allis CMOM Program Performance Measures**

Table 9-1, located on the following page, lists performance measures that have been established for the CMOM Program.

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City of West Allis

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**Table 9-1. CMOM Program Performance Measures**

| Program Element                                   | Performance Criteria/Standard  | Benefit   |
|---|--|---|
| <b>Practices</b>                                  |  |   |
| Preventive Maintenance                            |  | Establishes municipality's dedication to system maintenance through setting annual goals. Some utilities will justify needed PM expenses through this requirement                               |
| Cyclic Sewer Cleaning                             | Length performed annually  |   |
| CCTV Inspection                                   | Length performed annually  |   |
| Manhole Inspections                               | Number inspected   |   |
| Pump Station Inspections (Diversion Pump Station) | Frequency Performed  |   |
| I/I Reduction Program                             |  | Provides integration with current Chapter 2 requirements for I/I control plan updates.  |
| SSES  | Description of activities performed  |   |
| Rainwater Compliance Inspection                   | Description of activities performed  |   |
| Disconnect Clearwater Sources                     | Number disconnected  |   |
| Number of Manholes Repaired                       | Number repaired  |   |
| Length of Sewer Repaired or Replaced              | Length repaired  |   |
| System Map  | Data verified, QA/QC implemented, all facilities mapped and inventoried (completeness, accuracy and availability)                                    | Ensures accurate inventory of sewer collection assets and is fundamental to subsequent asset management activities.   |
| Skills and Safety Training                        | Certification/skills training identified, tracked, provided, and updated for applicable personnel  | Ensures and documents sewer worker safety training activities.  |
| Capacity Evaluation                               | Evaluation completed in priority basins as necessary for development of 2050 Facilities Plan alternatives analysis and level of service evaluations. | Identifies system at risk of surcharge from MMSD system. Identifies potential impact on MMSD system if municipality attempts to reduce I/I or construct relief capacity to eliminate overflows. |
| Information Management System                     | Periodically updated and set-up according to MMSD Standards  | Makes data collection more consistent and retrieval more cost-effective for the municipality.   |
| <b>Documents</b>                                  |  |   |
| Annual sewer financial reports                    | Document produced annually.  | Establishes a link between financial needs and funding.   |
| Annual CMOM Status Reports                        | Document produced annually.  | Would eventually satisfy state requirements for CMOM Program summary.   |
| Organizational Chart                              | Document produced and updated as necessary.  | Provides documentation of roles and responsibilities for CMOM activities.   |
| Design and Inspection Standards                   | Confirm MMSD and State of Wisconsin standards in place   | Provides clearer communication to designers and contractors on sewer construction projects.   |
| System Evaluation and Capacity Assurance (SECAP)  | Document produced if required.   | Establishes that municipality has evaluated potential linkage between system flows, system capacity, and overflows.   |
| Standard Operating Procedures                     |  |   |
| CCTV and manhole inspection                       | Document produced and updated as necessary, according to approved standard.  | Provides for clear training of new staff and communicates to public...  |

# Satellite Municipality CMOM Management Plan

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**Table 9-1. CMOM Program Performance Measures**

| <b>Program Element</b>   | <b>Performance Criteria/Standard</b>  | <b>Benefit</b>   |
|--|---|--|
| Standard Operating Procedures Cont.<br><br>Cleaning<br><br>Inspections (structures, pump stations) | Document produced and updated as necessary.<br><br>Document produced and updated as necessary.  | ...that standards exist and are followed for these activities.   |
| Overflow Response Plan (ORP)   | Document produced and updated as necessary.   | Provides for consistent training of new staff, communicates to public that an updated plan exists and is followed when responding to system overflows. |
| Capital Improvements Plan  | Major rehabilitation identified on 5-year planning horizon. Summary document produced and updated as necessary.   | Provides for better financial decision-making as it looks more than one or two years into the future.  |
| Condition Assessment   | Inspection results reviewed, defects identified and prioritized, repair/rehabilitation projects identified and incorporated into Capital Improvements Plan. | Ensures that inspection findings are assigned a priority and scheduled for correction.   |
| Legal Authority  | Appropriate ordinances identified and adopted.  | Clearly communicates the responsibilities of property owners with respect to eliminating sources of clear water from the sewer system.                 |

## **10. BENCHMARKING DATA**

This topic of the Stipulation Agreement involves comparing the City of West Allis to other similar municipalities with respect to utility performance. The following data will be collected and validated by the CMOM Program Manager:

- Number of Sanitary Sewer Overflows
- Number of Lateral Collapses (note that the lateral is owned by the Property Owner up to and including the connection to the mainline sanitary sewer)
- Number of Emergency Bypasses
- Number of Customer Complaints

Benchmarking data will be evaluated on an annual basis. Comparisons will be made with the Cities of Wauwatosa, New Berlin and the Village of West Milwaukee. Due to the differing experiences, capabilities, resources, sizes and status of each municipality in regards to CMOM, some communities will be further optimized than others and it is unreasonable to make assumptions that there is a standard to be set across communities for their progress in the closure of gaps.

Rather, a unified effort between communities to develop / increase relationships, and to standardize operating and maintenance procedures should be implemented. This is one of the items that the Technical Advisory Team (TAT) has addressed through their development of SOP's for the sanitary sewer system. Communities can assist each other to address the gaps in the benchmarking data, but the individual gaps for each community are their responsibility to address.

For the City of West Allis, gaps identified in benchmarking data will be addressed by the CMOM Work Team.

## **11. REPORTING METHODS FOR CMOM COMPLIANCE REVIEWS**

Draft federal and state regulations would require annual compliance reporting for CMOM Programs. Given Wisconsin's delegated authority, only annual reporting to WDNR would be required. This annual reporting includes the completion of an eCMAR (Compliance Maintenance Annual Report) through the WDNR and MMSD. Copies of these reports are kept on file in the Engineering Department and are available for viewing on the City's website.



# **Appendix A**

## **Stipulation Agreement References to CMOM**

### **CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM) PROGRAM**

6. Combined sewer overflows and sanitary sewer overflows present important concerns for public health and the environment. The State, through the Department of Natural Resources, acknowledges that the District has accomplished significant reductions in the number of overflows experienced within the District's Metropolitan Interceptor Sewer System through implementation of the Water Pollution Abatement Program (WPAP).
7. While sanitary sewer overflows in the District's system have been significantly reduced, there are still sanitary sewer overflows within the District's and its satellite municipalities' sanitary sewer systems. To continue the District's program to reduce with the goal of eliminating all non-permitted sanitary sewer overflows, the District shall implement a regional Capacity, Management, Operation and Maintenance (CMOM) program. The regional CMOM shall be comprised of four integrated components:
  - A. *Management Plan.* A plan that outlines the goals of the CMOM, the organizational structure to manage it, the legal authority to control I/I, design criteria, benchmarking data and performance measures to attain the goals. A significant effort associated with the management plan shall be the development of an asset management program that provides for both programmed maintenance and tracking of the asset condition to enable early recognition of expansions or major rehabilitation necessary to avoid capacity limitations.
  - B. *Overflow Response Plan.* An overflow response plan that identifies measure to protect public health and the environment. This plan will outline the public notification, permit reporting, measuring and monitoring steps to be taken during an overflow event.
  - C. *System Evaluation and Capacity Assurance Plan.* A plan for system evaluation and capacity assurance for peak flow conditions. This plan shall identify necessary capital improvements to meet the projected flows and an implementation plan that describes timing and responsibilities for implementing each capital improvement.
  - D. *Communication and Program Audit Plan.* On a regular basis the District shall report to the Department on the implementation and performance of the CMOM program. The communication and program audit plan shall allow for public input during the development and implementation of the CMOM.
  - E. The approach to be used by the District to initiate and maintain the CMOM program shall include the following steps.
    - 1) Retention of a consultant by no later than December 31, 2002, to provide program oversight and guidance.
    - 2) Review of existing operations and existing management and capital improvement plans.
    - 3) Development of an action plan to assess the required changes to existing plans and to develop a critical plan approach to a CMOM program.
    - 4) Concurrent with previous steps, review of existing information on asset management, including field verification as required, and software development to provide a simplified data base to manage the capital assets of the District.
    - 5) Open and maintain a CMOM dialog with the 28 satellite municipalities through the Technical Advisory Team<sup>1</sup> with the goal of assisting the satellite municipalities with developing individual CMOM programs. The District shall develop prospective measures for the satellite systems that will reflect the requirements of the District's regional CMOM program.
    - 6) This entire CMOM initiative will be coordinated with the ongoing facilities planning and shall be

### **SATELLITE MUNICIPALITIES**

9. Infiltration and inflow reduction efforts by the 28 satellite municipalities will continue to be required under District Rules, Chapter 3, Infiltration and Inflow Control. In addition, each satellite municipality shall be required, by District rules, to develop a local CMOM by no later than two years after completion of the District's regional CMOM Program. Prior to promulgation of the District rules, the Department may issue WPDES discharge permits to individual satellite municipalities, as necessary to require, inter alia, I/I reduction efforts by fixed dates. Following promulgation of the District rules, the Department may issue WPDES discharge permits to individual satellite municipalities, as necessary to require, inter alia, CMOM development and I/I reduction efforts by fixed dates.