

**OUTLINE**

**LONG TERM OPERATION AND MAINTENANCE PROGRAM**

**FOR THE**

**INFILTRATION / INFLOW CONTROL PROGRAM**

**PURPOSE:** The Long Term Operation and Maintenance Program (LTOMP) is implemented for the continuous inspection, maintenance and rehabilitation of the sanitary sewer system, as well as the identification and correction of infiltration/inflow (I/I) sources in the public and private sewer systems. The goal of the LTOMP is to reduce sanitary sewer overflows and basement backups, address system deficiencies, maintain system capacity, and prevent system failures.

**PROGRAM COMPONENTS:**

1. Sewer System Management: Adequately trained/qualified staff, consultants, and/or contractors are provided to implement all aspects of the LTOMP.
  - a. *Training*: Staff is periodically trained on sewer inspection, maintenance, and construction to ensure the sewer system is properly operated and maintained in a manner that optimizes resources.
  - b. *Safety*: Staff is provided with necessary safety equipment and training to perform work under the LTOMP.
  - c. *Customer Service*: Procedures are established to receive and respond to customer reporting of sanitary sewer overflows and basement backups, in addition to other customer inquiries, requests, and complaints. Customers are also provided information via brochures, newsletters, mailings, etc.
  - d. *Management Information System*: Records of all activities and work completed under the LTOMP, and information used to manage the sewer system is maintained in perpetuity by {a computerized maintenance management system} {hardcopy records}. These records are available for review upon request.
  - e. *Sanitary Sewer Overflow (SSO) / Basement Backups*: The following procedures are established to respond to SSOs and basement backups:
    - i. SSOs are investigated, contained, the cause is determined, and notification is provided, as necessary, to all appropriate parties (e.g., state/local, drinking water, and public health officials, and the general public). A record of the occurrence, cause, and corrective work is maintained.

- ii. Basement backups are investigated and the cause is determined. The customer is provided information on basement backup causes and methods that can reduce future basement backup occurrences. A record of the occurrence, cause, and corrective work is maintained.
  - f. *Emergency Preparedness and Response*: Procedures are established to respond to routine and catastrophic emergencies related to sewer breaks/collapse, {power outage or failure of pump stations and force mains}, SSOs, and basement backups 24-hours a day. Staff respond to the emergency and contractors may be used to assist in the response.
  - g. *Sewer Use Ordinance*: The {sewer use ordinance} {other} establishes the design and construction standards for all new sewer construction and rehabilitation work, controls the quantity and quality of wastewater, I/I source correction, and provides authority to inspect the sewer system.
  - h. *FOG Program*: The FOG program establishes requirements for buildings that produce fats, oils, and grease (FOG). Grease interceptors or grease basins are required for buildings that produce FOG, and they are required to be serviced to ensure FOG does not enter the receiving sanitary sewer.
2. Sewer System Map: A map of the sewer system is {maintained by a Geographical Information System (GIS)} {provided by a paper hardcopy} and is updated on an annual basis. The map contains all sewers, manholes, {pump stations, force mains,} connections to the MWRD, and other structures. Rim, invert, diameters, material, age, and other appropriate elevations, dimensions, or attributes are provided when possible.
3. Sewer System Inspection: New sewer is inspected during construction and must meet the design requirements prior to being placed in service. The existing sewer system is continuously inspected to assess the condition of the system, locate blockages, and to identify I/I sources. Historical information is used to prioritize the portions of the system for inspection. Inspection results are utilized to prioritize sewer system maintenance and repair work.
- a. *Frequency*: A minimum of two percent (2%) of the existing system is inspected annually.
  - b. *Methods*: Televising, smoke testing, dye water flooding, visual, and other methods.
  - c. *Standards*: Inspections are conducted and deficiencies are coded in accordance with NASSCO standards. When NASSCO does not provide standards for an inspection method, the inspection will be conducted in accordance with industry standards.
4. Sewer System Maintenance: The sewer system is continuously maintained to prevent and eliminate SSOs and basement backups, maximize service and reliability, and establish sustainability. Appropriate equipment is available to clean the sewer system, remove blockages, and conduct system maintenance.
- a. *Regular Maintenance*: Continuous maintenance is undertaken and prioritized to reduce corrective and emergency maintenance.

- b. *Emergency Maintenance*: Staff and/or contractors are available to conduct emergency maintenance activities 24-hours a day.
  - c. *Sewer Cleaning*: Routine sewer cleaning is performed and frequency is based on historical information. Sewer cleaning is also performed, as necessary, prior to conducting inspections and rehabilitation.
5. Sewer System Rehabilitation: Rehabilitation work is continuously performed to correct sewer system deficiencies discovered as a result of inspections. Priority is given to deficiencies that may result in system failure, reduce system capacity, or contribute excessive I/I. Deficiencies that cannot be immediately corrected are documented and are included as part of the Capital Improvement Plan (CIP) for future correction.
6. Sewer System Capacity Evaluation: The sewer system is designed to accommodate the dry weather flow of the service area. The capacity of the existing system will be evaluated to determine whether an increase in conveyance capacity is justified if either of the following circumstances occur:
- a. Dry weather SSOs and/or basement backups occur that cannot be attributed to maintenance issues or identified deficiencies; or
  - b. The service area is being redeveloped in a manner that the projected dry weather flow exceeds the existing sewer system capacity.
7. Material and Equipment: Adequate and proper material and equipment is provided to complete all work performed under the LTOMP. An inventory of all material and equipment is maintained. All equipment is properly maintained to ensure all work can be completed.
8. Capital Improvement Plan (CIP): All sewer system deficiencies identified during inspections that are not immediately corrected are included as part of the CIP. The CIP details the plan, schedule, and funding for the long-term correction of sewer system deficiencies. The CIP is updated annually and priority is given to projects that address deficiencies that may result in system failure, reduce system capacity, I/I sources, or have been known for the longest period of time.
9. Private Sector Program (PSP): A large portion of excessive wet weather flow originates from the privately-owned sector of the sewer system. The goal of the PSP is to reduce SSOs and basement backups by the identification and removal of internal and external private sector I/I sources.
- a. *Authority*: Inspection of private property and enforcement of I/I source correction are established by Ordinance {Resolution / bylaws / access agreement} {indicate reference}.

- b. *Inspection*: Private sector areas that are suspected to significantly contribute I/I to the system will be inspected to identify and document internal and external I/I sources and the location of all sewer connections. {If a portion of the sewer system experiences SSOs and/or basement backups during multiple wet weather events within a 12-month period and it is determined that the public system did not contribute to the SSO or basement backup (i.e., no unrehabilitated deficiencies, no blockage, etc.),} {other} then private property inspections will be conducted in the impacted area and any other area that is believed to be contributing to the occurrence. Results of the inspections will be used to provide the customer with a notice of non-compliance for I/I source correction.
  - c. *Non-Compliance Correction*: A notification and correction procedure is established to notify, assist, and educate customers of non-compliance. The notification describes the non-compliance condition (i.e., I/I source), the date by which the I/I source must be corrected, follow-up inspection, and description of enforcement actions.
  - d. *Long Term I/I Source Correction*: High-flow, high-cost I/I sources include footing drains, driveway drains, area drains, leaking laterals. When these sources cannot be immediately corrected, they are documented and tracked for long-term correction within an appropriate time frame depending on the correction method. Corrective action will occur prior to or during {property transfer} {tear down} {significant building improvement} {participation in a cost-share program} {other}.
  - e. *Enforcement*: A hierarchy of enforcement actions are established when a customer fails to comply with a notice of non-compliance. Enforcement actions include {fines / denial of service / denial of building permits / litigation}.
  - f. *Public Information*: Customers are provided information regarding basic I/I education, I/I contribution to SSOs and basement backups, I/I source correction, and any funding available to correct I/I sources.
10. Funding: The LTOMP is funded by {sewer and water usage} {water usage} {other} fees. Should grant or loan funding become available from state, regional, or federal agencies, those potential sources will be investigated to supplement the LTOMP.