

ACTION ITEM 7.1 – SEWER SYSTEM INVENTORY AND MAPPING

ACTION ITEM

Maintain a sewer system map based on a survey and inventory of the sewer system.

OBJECTIVE

The survey and inventory data determine attribute locations of the sewer system components to develop a map of the system. Wastewater system maps provide operators and maintenance personnel a better understanding of their system.

DESCRIPTION OF MEASURE

A comprehensive sewer system map is critical for developing a strong inspections and maintenance program. At a minimum, the sewer system map will include survey and inventory of the sewer system and horizontal and vertical locations of critical sewer system components. Without proper mapping of a sewer system, it is difficult to determine which parts of a sewer system need inspection, or to track ongoing, mostly unscheduled, maintenance work. Without proper documentation and tracking of inspection and maintenance work, it is difficult and time consuming to determine the amount of resources that should be allocated to sewer system inspection and maintenance on an annual basis.

The sewer system inventory and mapping is often the basis for a broader asset management program. Information collected as a part of sewer system mapping will vary based on the local wastewater system and may include:

- Pipe information: size; material; age; condition; direction of flow; and slope
- Manhole information: location; diameter; depth; material; age; condition; entering and exit line sizes; direction and elevation
- Pump station information: location; capacity; number of pumps; condition; method of alarm indication and method of back-up power

At a minimum, local wastewater providers must compile system information on a paper map. Most wastewater providers, especially communities with a significant level of new development, will elect for a GIS-based collection system map. While a GIS based map is not required, the Metro Water District recommends this approach for inventorying wastewater collection systems. Collection system maps should be kept current and any system changes should be made to the system map in a timely manner.

Owners of sewer systems can either commit sufficient funding to complete the survey, inventory, and mapping of their system during one budget period, or commit to funding the program over a period of time. Although most local wastewater providers have completed initial mapping of the wastewater system, map maintenance will be an ongoing activity. Once the initial survey, inventory, and mapping are complete, data on new sewers and associated appurtenances can then be added on an ongoing basis.

Responsible Party

- Local Government
- Local Wastewater Provider
- Other: _____

In Coordination With

- Site Plan Review Staff
- Community Development/ Zoning
- Local Stormwater Program
- Local Water Providers
- County Board of Health
- Other: Local GIS Department

Specific Sub-Tasks

Sub-Task	Description
Determine sewer system mapping strategy	Outline a plan, schedule, and budget for sewer system mapping.
Collect field data for sewer system database development	Complete sewer system inventory and mapping for critical sanitary sewer components.
Create a sewer system map	Create a sewer system map based on the database. This map may be a paper map or created using GIS from the sewer system database.
Update sewer system maps	Update sewer system maps periodically to include sewer system extensions and rehabilitation projects.

DATA COLLECTION (OPTIONAL)

Many local wastewater providers are purchasing electronic handheld devices for field personnel that allow for automatic updates to the wastewater system map. Using this technology, data collected in the field can be uploaded into the electronic map and made available to the entire staff. The handheld devices reduce the need for cumbersome printing of map books and the liability of having old, inaccurate maps in the field. While not required by this Wastewater Management Plan, these automatic data collection tools may be helpful for larger utilities as a tool for more efficient map maintenance. This procedure would allow operators and maintenance personnel to better understand their system, and would allow relatively easy retrieval of locational and attribute data when needed for operational, maintenance, and management purposes.