

Asset Management for Wastewater Utilities



Module 2
Conducting
Asset Inventories
of Wastewater
Facilities

At the conclusion of this module, the participant will be able to:

- List the benefits of maintaining good asset inventories
- Explain how to establish asset hierarchies
- Discuss what asset information to assemble

Benefits of Asset Inventory

- Lets the Utility know what it owns and where it is located
- Establishes lifecycles of all assets
- Provides the backbone of maintenance programs
- Helps establish replacement schedules

Asset Inventory Questions

- What assets do we have and where are they located?
- How do we capture the information?
- What do we include?
- How do we compile the data?

What Assets Should Be Included?

- When deciding to include an asset consider the following:
 - The cost to repair/replace the asset
 - How would the asset's failure impact the goals of the utility?
 - Will failure affect health & safety?
 - Will failure affect regulatory requirements?
 - How will failure affect public relations?

These points do not need to be quantified at this stage, but will be identified during the ensuing steps

The Information Audit

- Gather inventory data from various departments
- Look for existing inventories in
 - Finance
 - O&M
 - Engineering
 - Planning
- Perform a “gap analysis” to determine what else is needed

How do we Organize the Inventory?

- Allow for additions in future
- Assets should be organized in a “hierarchy”
- Asset hierarchy uses categories to link similar assets

Examples of Asset Categories

- Headworks
- Pump Stations
- Preliminary Treatment
- Equipment
- Building and Grounds
- Panels – Alarm/Electrical
- Collection Basin
- Collection Pipe
- Collection Pump Station
- Unit processes

Plant Asset Hierarchy

Headworks

- Building
 - Structure
 - HVAC
 - Plumbing
- Screening
 - Bar Screens
 - Screens
- Grit Removal
 - Blower
 - Auger
 - Grit Pumps
 - Pipes/Valves
- Electrical
 - Motor Control

Plant Asset Hierarchy

Raw Sewage Pumping

- Building
 - Structure
 - HVAC
 - Plumbing
- Pumps
 - Pump #1
 - Pump #2
 - Pipes / Valves
- Instrumentation
 - Flow Meter
 - Level Sensors
- Electrical
 - Motor Control Center
 - Generator

Typical Collection System Asset Categories

- Collection Structure
- Collection Pipe
- Collection Pump Station

Collection System Hierarchy (Example)

- Collection Structure
 - Manhole
 - Grinder Pump
- Collection Pipe
- Pump Station
 - Building
 - Structure, HVAC, Plumbing, Lighting
 - Pumps
 - Pump 1, 2, 3 etc
 - Valve and Piping
 - Instrumentation
 - Flowmeter
 - Electrical
 - Motor Control
 - Standby generator

The Line Segment (Building Block of the System)

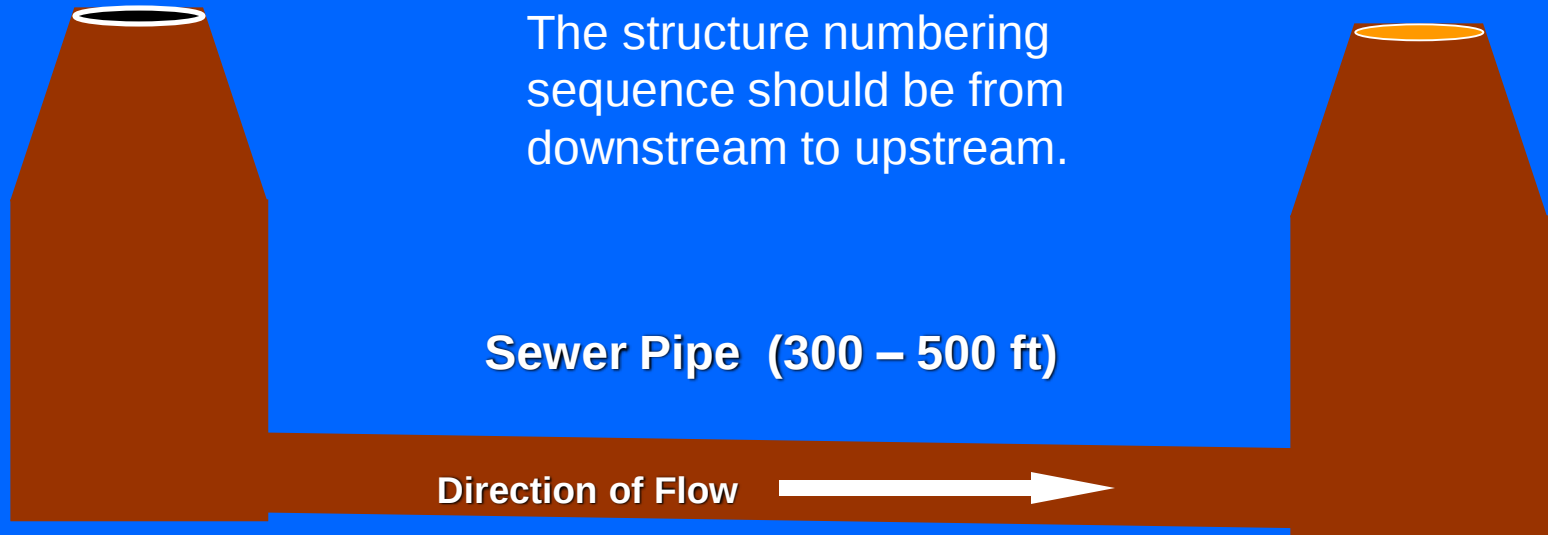
Upstream
Manhole or
Structure

Downstream
Manhole or
Structure

The structure numbering
sequence should be from
downstream to upstream.

Sewer Pipe (300 – 500 ft)

Direction of Flow



What Asset Data Should Be Collected?

- Name and Location
- Functional purpose
- Size/Capacity/Length (pipes)
- Construction materials
- Construction / Installation date
- Condition*
- Manufacturer
- Service life

* noted for use under condition assessment

Data Management

- Inventory data should be entered into a computerized program with the ability to:
 - Organize the assets
 - Value the assets
 - Store condition/criticality information
 - Provide maintenance management functions
 - Incorporate GIS information
 - Import data from other sources
 - Produce useful reports for decision-making

TEAMS - AM Software

Microsoft Office© 97/2000/2003

Software uses MS Access©

Export to Excel for financial analyses

Linked Help files in Word

Advantages of TEAMS

- Cost effective
- Level of effort for start-up is flexible

Advantages of TEAMS

“One asset at a time”

- Gets smarter with use
- Meets CMOM & GASB requirements

Questions