

## Defining the I/I Problem

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Dear Reader:

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We hope this information will be useful to you; reference to it will assist you with many of the questions that will arise in your tenure with municipal government. However, the *Tennessee Code Annotated* and other relevant laws or regulations should always be consulted before any action is taken based upon the contents of this document.

Please feel free to contact us if you have questions or comments regarding this information or any other MTAS website material.

Sincerely,

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To help decide whether you should use the traditional way or the operator's way to solve I/I problems, you must first define the problem.

**Document and be as specific as possible.** Use complaint records. Does sewage back up in Mr. Johnson's basement every time it rains? Use influent biochemical oxygen demand (BOD) and suspended solids (SS) data. Weak (or low) BOD and SS influent readings usually indicate dilution of sewage by extraneous water. Use rainfall records. It is easier to see the impacts if the data is plotted on a graph. At the wastewater plant, post a running record of these parameters.

**Identify and Document Problem Areas.** Operators generally know the manholes that surcharge, pump stations that overflow, and lines that run full during rainfall events. Document the information.

**Discuss the Information.** Using the map, operator's knowledge of the system and data you've collected, ask the following:

- Do influent flows spike up during a rainfall event then go down quickly? If so, suspect roof leader, storm sewer or surface drain cross-connections. If flow jumps up and declines slowly, suspect stream inflow and/or groundwater infiltration.
- Where do lines cross creeks? Do the creeks stay up about the same length of time as the flow in the lines?
- Where are likely cross-connections with drainage lines or roof downspouts?
- Do lines pass through swampy areas or near springs?
- What color is the plant influent during a heavy rainfall? Normal raw wastewater is gray. If the influent is muddy, you may have an inflow source.
- Are grinder pumps located in depressions or near down spouts?

**Look, Listen, Document and Analyze.** Take a close look at the system. Walk the lines, open manholes, and make notes of the following:

- Surface depressions, cave ins, or road collapses;
- Debris in inverts;
- Broken manhole lids;
- Brick manholes showing active I/I;
- Clear flow in lines;
- Unusual flows; and
- Sluggish flow.

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