![DUKE'S ROOTED IN INNOVATION℠ logo]

The innovative provider of services for maintaining and improving the health of underground infrastructure.

I&I MicroDetection
Track Infiltration and Inflow quickly and cost effectively

Detecting I&I

Detecting infiltration and inflow (I&I) can be a challenging and expensive process. Wastewater collection systems are extensive with numerous pipes, manholes, and connections. The size and complexity make it challenging to pinpoint the exact location of infiltration or inflow sources which can lead to Sanitary System Overflows (SSOs), lack of adequate collection system capacity and increased treatment costs.

We know that finding I&I can be a daunting task, especially when most models only detect the problem within a few miles or a basin. We utilize cutting-edge micro-detection technologies and algorithms to quickly and accurately isolate the line segments that are causing excess I&I within a basin down to the street level.

We do it with instant feedback and pinpointing pipelines.

- Duke's micro-detection units and software identify specific areas to address for I&I management.

- Custom algorithms compare system characteristics during dry days to system characteristics during rain events to provide charts, graphs, and reports on I&I flows.

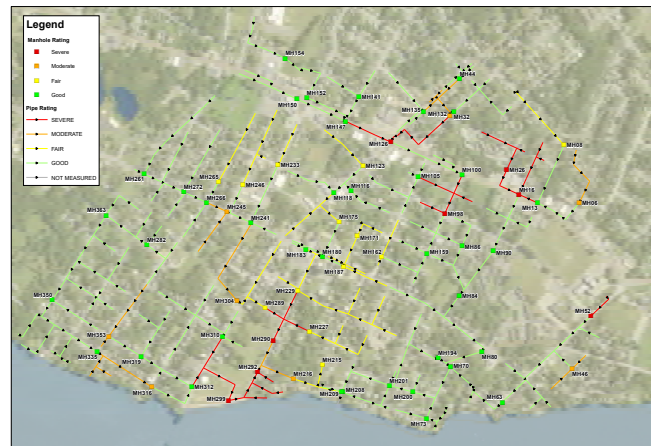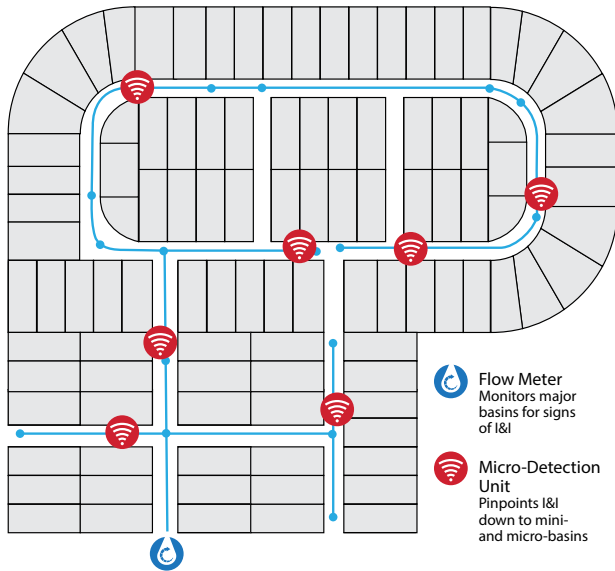- Deliverables are provided in Duke's Insight 360, an easy-to-use on-line digital platform.

By pinpointing these specific areas, we can reduce the time locating I&I and focus on prioritizing and fixing the source of I&I.
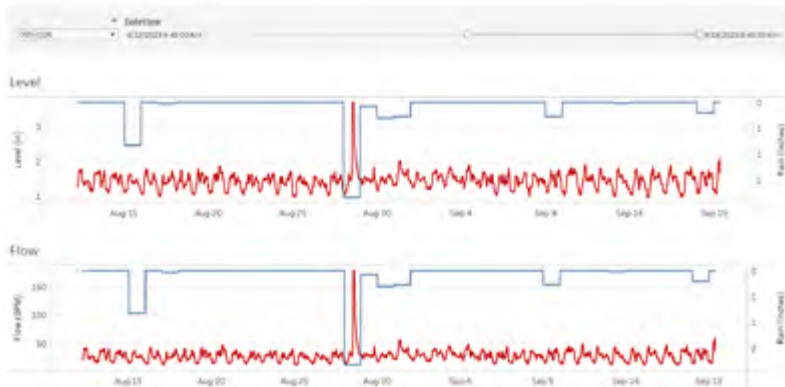
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Duke's has the added capability to combine traditional gravity area-velocity meters and Duke's Pump Station Flow Monitors.

Collection Basin: Multiple inline linked units are easier to compare accuracy.

Flow Meter
Monitors major basins for signs of I&I

Micro-Detection Unit
Pinpoints I&I down to mini- and micro-basins

Linked analytical tools show individual line segment RDII contribution in volume and dollars.

When flow meters are used they can be verified against each other.

- Severe
- Moderate
- Fair
- Good

18%
9%
18%
55%
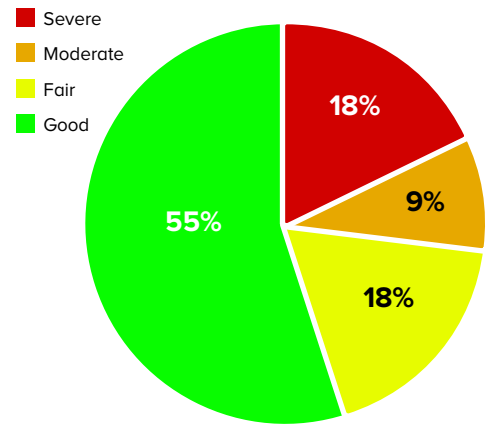
More precise studies that use flow monitoring (Area-Velocity) and or Pump Station flow monitoring are available.

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