

# I&I Micro Detection

**DOUBLE GUARANTEED**

SOLUTION FOR  
PINPOINTING I&I

**iTracking<sup>®</sup>**

**I&I DETECTION SERVICES**



# iTracking® Services

## I&I Detection Reinvented

The EPA/625/6-91/030 Handbook “Sewer System Infrastructure Analysis and Rehabilitation” was developed over 30 years ago to provide guidance on the evaluation and rehabilitation of existing sewers. When it was initially conceived, it included within its 3-Phase Program for identifying I&I intensive CCTV camera work, confined space flow monitoring, nighttime flow isolation and labor-intensive smoke testing procedures.

### CCTV Camera



*Does not detect inactive I&I*  
*Time consuming*  
*Requires expensive equipment*

### Flowmeters



*Time consuming to install*  
*Results not pinpointed*  
*Requires expensive equipment*

### Nighttime Flow Isolation



*Requires confined space entry*  
*Long setup times*  
*Subject to measurement error*

### Smoke Testing



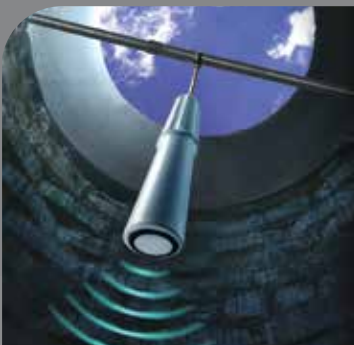
*Less than 30% Effective*  
*Requires Chemical Safety (MSDS)*  
*Can propagate smoke inside homes*

**30 YEARS  
LATER**

*With iTracking's ability to quickly pinpoint major contributors of I&I to between 3-4 manholes, 80% of the costs associated with prior I&I investigative methods are eliminated.*

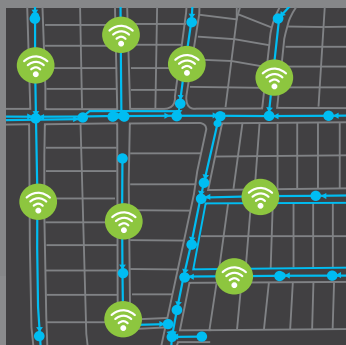
iTracking® I&I Detection Services is a “first of its kind” outsourced solution providing customers with a “Double Guarantee” that not only pinpoints areas of I&I to between micro-basins consisting of just 3-4 manholes but also eliminates all time constraints regarding the success of the project. If we do not precision detect I&I issues residing within your collection network, your money is refunded.

### Smart Sensing



*Our crews install iTracker smart sensors in 15 minutes without confined-space entry*

### Micro Detection



*A high resolution network of iTracker sensors micro-detect I&I to 3-4 manholes*

### Auto-Analysis



*With the click of a button, cloud-based algorithms analyze the resulting data*

### Video Animation



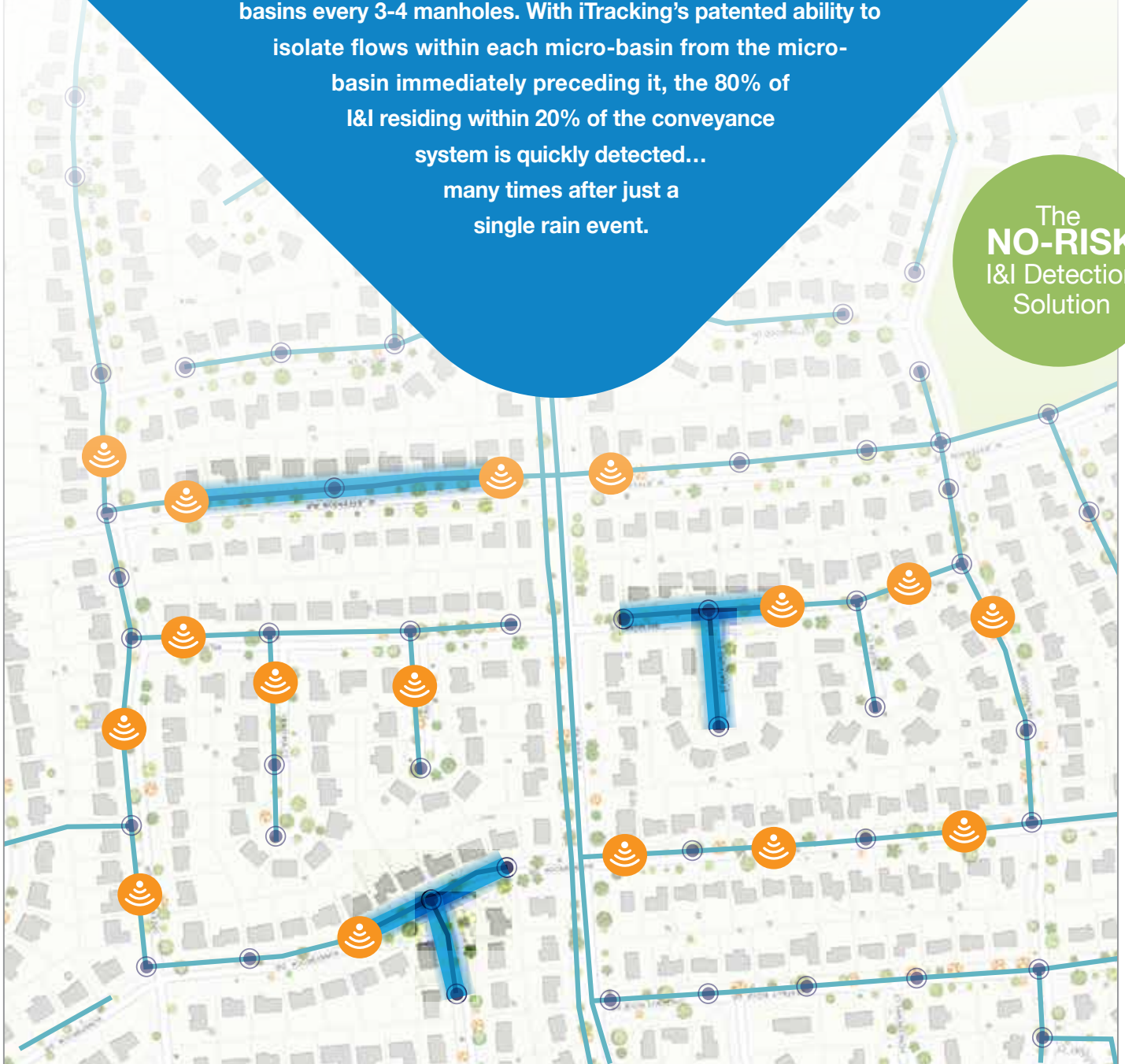
*Animated videos combine location, weather, data and results on a single platform*



# Pinpointing I&I to Within 3-4 Manholes

iTracker sensors are strategically employed throughout the collection system (7 sensors/mile) creating an intelligent series of independent micro-basins every 3-4 manholes. With iTracking's patented ability to isolate flows within each micro-basin from the micro-basin immediately preceding it, the 80% of I&I residing within 20% of the conveyance system is quickly detected... many times after just a single rain event.

The  
**NO-RISK**  
I&I Detection  
Solution



This is what iTracking Services is all about. Whether it rains on the first day of the Study or it takes 9 months for the Rain Derived I&I to appear, iTracker sensors monitor the collection network on a 24/7 basis and are not removed until the greatest contributors of I&I are discovered to within micro-basins consisting of just 3-4 manholes.

# Pinpointing Your I&I Has Never Been Easier!

- Round-the clock collection system performance analysis
- Advanced algorithms isolate I&I within each micro-basin from the one directly above it
- I&I pinpointed after a single major rain event
- Location, weather, data, and I&I presented in “instantly understood” animated videos

## Pre-I&I Study Analysis

Prior to placement of an order, at no cost to the client, a Project Manager will be assigned to your account to review a map of the area selected for I&I investigation, recommend placement of iTracker® sensors and provide a detailed cost estimate for the proposed study.



## iTracker® Sensor Installation

Immediately following order placement, a Project Manager will coordinate a mutually agreeable time for our field techs to arrive at the site to begin the iTracker® smart sensor installation process plus familiarize local utility personnel with the basics of the iTracking® hardware and methodology.



## Delivery of Study Results

Upon completion of the I&I Detection Study, your assigned Project Manager will set up an initial meeting to fully review each deliverable relating to the results of the investigation. Deliverables (to remain in the possession of the customer) will include animated videos, scattergraphs, hydrographs and visualization tools including bar, pie, and level charts.



# GUARANTEED RESULTS!

## PRECISE I&I DETECTION OR MONEY REFUNDED

High resolution smart iTracker® sensor placement is guaranteed to provide precise detection of I&I to between every 3 to 4 manholes and many times after a single rain event. If iTracking® does not perform as promised, your money is refunded.

## STUDY COMPLETED REGARDLESS OF TIME

iTracking studies are guaranteed to be completed regardless of the time required. Since successful studies can sometimes take anywhere from a few weeks to “until it rains”, our guarantee totally eliminates that concern.



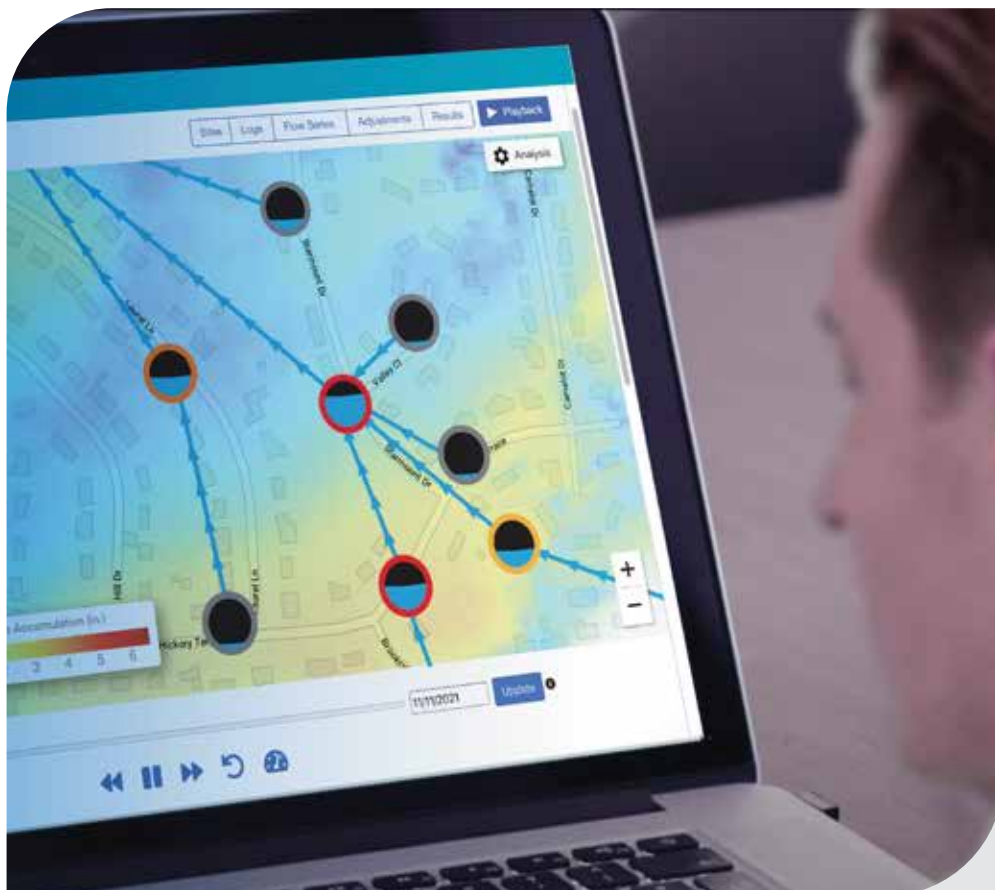


# Clear and Actionable Results

## Watch I&I Develop Right Before Your Eyes

Through a totally unique feature called Playback™, the I&I discovery process becomes as simple as watching an animated video of changes in collection system performance between normal and adverse weather conditions. On-demand, users can watch animated videos showing collection system volumes increasing in direct relation to storm intensity.

Updated every 5 minutes, sites responsible for the greatest increases of I&I are immediately brought to viewers attention by highly visible red rings. Within minutes of watching Playback™, utility personnel are armed with the ability to visually determine the effects and volume of I&I generated at each monitored site within their collection network.



# Data Visualization Reports Support the Conclusions

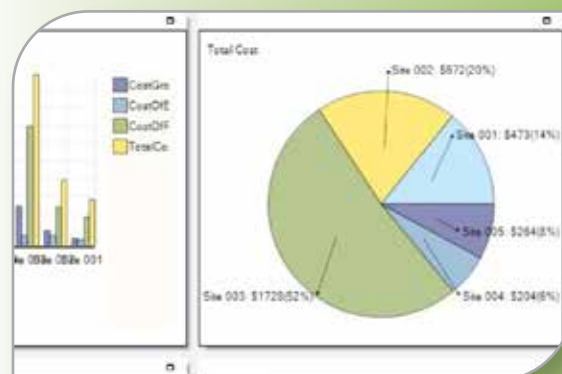
## Hydrographs & Bar Charts

Data visualization hydrographs and bar graphs not only support Playback™ videos but also detail exactly what is transpiring within the collection network on a 5, 10 or 15-minute incremental basis. Developed for each set of micro-basins under investigation, individual hydrographs along with stacked hydrographs instantly highlight which sites are responsible for the greatest influx of I&I. highly visualized bar charts showing Base flows, Groundwater Infiltration, RDII flows and Peak RDII flows provide a quick and complete understanding of collection system performance.



## At-A-Glance Pie Charts

Visual presentation tools include color-coded pie charts for instant identification of problematic areas related to the excessive contribution of I&I. I&I analysis reports in simplified pie chart form quickly detail the location, volume, and cost of each micro-basin within the collection network generating various rates of inflow and infiltration.



## Reports & Performance Mapping®

Concise reports are presented on a single page and detail all pertinent data related to each site under analysis. These reports provide valuable insights into the effects that both dry and wet weather have upon specifically designated areas within the collection system.

In addition to pinpointing specific areas of I&I, an exclusive Performance Mapping® feature also alerts utility personnel to areas in the network that are vulnerable due to impending blockages, capacity issues and the need for unscheduled cleaning.





## PRICING

iTracking® Services is a “one of a kind” solution. The goal was to develop a new technology capable of quickly, accurately, and cost-efficiently locating I&I within 3-4 manhole micro-segments of the collection network... all in a single operation. We are so confident of the capabilities embedded within the iTracking® technology that we have backed up our service contracts with a **DOUBLE GUARANTEE**: We either micro detect your areas of I&I or your money is refunded and regardless of the time it takes to achieve that goal due to a lack of wet weather events, our smart iTracker® sensors remain in place until satisfactory results are achieved.

**COST: ITRACKING® I&I MICRO DETECTION STUDY. . . . . \$1.32/ft (\$7,000/Mile)**



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