



## Toho Water Authority, FL

*Optimizes Operations, Long-term Planning and Cost Savings  
Using Smart Technology*

The Tohopekaliga Water Authority (Toho) was formed in 2003 by a special act of the Florida Legislature to provide better sewer system management and to be the regional steward over water resources throughout Osceola County. When Toho was formed, several communities had facilities that needed improving and they also did not adequately try to minimize spills or treat wastewater flows, which posed a threat to residents and the environment and created problems of compliancy with state and federal laws and regulations regarding clean water issues.

In two decades, Toho’s sewer service area has grown significantly, and its customers increased by 280%, to more than 160,000 in the cities of Kissimmee, St. Cloud and Poinciana and in the unincorporated areas of Osceola, Polk, and Orange counties. Toho maintains 1,338 miles of gravity mains in a separate sewer system, 627 lift stations, 31.756 manholes and 10 wastewater treatment plants.

### The Challenge

Hurricane Ian pounced on the Toho area in 2022, damaging much of the sewer infrastructure. As inflow and infiltration (I&I) increased significantly, so did the backups, flooding, and citizens’ complaints.

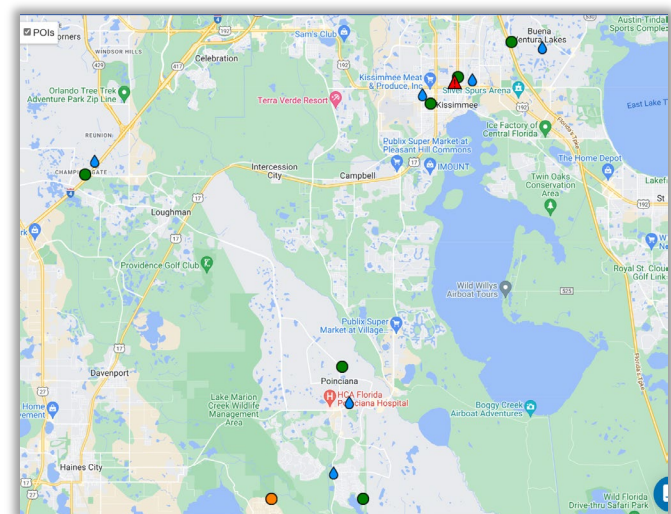
Toho already faced a long list of challenges which were compounded by Hurricane Ian. They had to combat the long history of sanitary sewer overflows (SSO), achieve regulatory compliance, reduce fines, plan for costly capital improvements, and protect public health, workers, and the environment.

“We needed early warnings for preventative maintenance (PM) cleanings so we could stay ahead of issues instead of always reacting to problems as they came,” said James Johnson, Senior Business Partner for Collection System Operations.

Toho’s mode of operation had been to clean 135 high-risk areas weekly, with no real knowledge of whether the cleanouts were warranted at that time. That consumed a lot of staff time and other resources. Still, when it rained spills continued to happen. Field Operations estimated that each cleaning cost about \$1,000.

### Highlights:

- Real-time collection system monitoring improved asset management, operations and long-term planning.
- Reduction in high-frequency cleanings.
- Financial savings preserved capital for necessary infrastructure improvements.
- Improved regulatory compliance.



SmartCover Coverage in the Toho Water Authority Service Area

## The Solution

In 2021, city officials tried a pilot program with SmartCover Systems using eight subsonic remote monitors to see into its collection system without confined entry. Toho officials were attracted by SmartCover's technology and use of software integrations as well as the company's use of the reliable Iridium Satellite Network instead of reliance on cellular transmissions that can be unpredictable during inclement weather.

## The Results

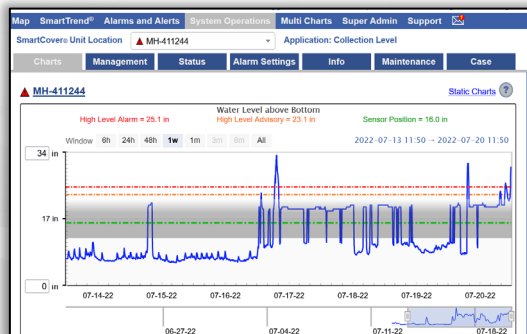
Toho currently uses 8 subsonic monitors to track I&I as well as for other applications that help protect public health and local waterways. SmartCover monitors have reliably helped Toho locate high-risk areas and solve the sources of its I&I issues. The SmartCover monitors are frequently moved to survey high risk areas and obtain data about flow and level accuracy, alarms and other things. That data is incorporated into SmartCover's software platform to enable overall trend analysis. Data about level, flow, or rain can be overlaid and integrated with local weather data from the National Oceanic and Atmospheric Administration (NOAA).



Hurricane Ian Rainfall



Lift Station Failure Alert



Cleaning Required Alert

## Conclusion

Toho's collection system operators now get actionable insights that allow them to make informed, proactive decisions regarding labor and service requirements and capital spending. The financial savings has preserved capital for necessary infrastructure enhancements and strengthened Toho's ability to uphold public health and environmental integrity and adhere to regulatory compliances.

The smart sewer technology's enhanced visibility and data-driven insights have empowered Toho to better facilitate the development and execution of short-term and long-term maintenance and capital improvement goals. A comprehensive operations management plan is nearing completion, with a goal of reducing spills by at least 50 percent in the next three years.

