

LITTLE FALLS, MN USES SMARTCOVER TO TRACK I&I AND AVOID SPILLS

BACKGROUND

A community of approximately 8,600 residents in central Minnesota and former childhood home to renowned aviator Charles Lindbergh; Little Falls has small town charm with high quality of life and numerous opportunities to visit, shop and dine.

The city's Wastewater Department operates and manages the wastewater treatment facility, treating 2.6 million gallons per day of wastewater. They also oversee 19 lift stations and over 75 miles of gravity sewer lines. The city's Public Works Department is also responsible for the city water system, water treatment plant and distribution network.

THE CHALLENGE

Working together, staff from the wastewater, water and engineering departments collaborated on

new innovative approaches to help improve spill prevention, identify Inflow & Infiltration (I&I), manage stormwater and "right size" capital investments. During planning for a new wastewater treatment plant, they needed more accurate data to assure adequate expansion margin without over designing the system.

Due to a variety of factors, including aging infrastructure and high wet-weather seasonal flows, I&I was prevalent.

Previous use of flow meters caused problems with confined space entry, complex software, and hassles with moving the units between sites.

THE SOLUTION

Little Falls wastewater staff decided on SmartCover to provide remote flow monitoring, alerts, spill prevention, I&I mitigation and data driven capital planning.

Key advantages of SmartCover include:

- Flexible data collection options
- Robust satellite communications
- Web-based, easy-to-use software
- Data analytics identify trends and irregularities
- No confined space entry
- Portable for easy relocation

They started with four units and targeted them for the highest impact. They used their SmartCover system to create baseline measurements to inform the treatment plant design, track inflow hot spots, as well as assess stormwater impact levels during high-flow wet-weather events.

THE RESULTS

Little Falls has seen rapid return on their SmartCover investment. They have easily moved remote field units between 11 different sites, accumulating data across all the locations. The magnitude of seasonal flow variations, from rainfall to frost melt to dry weather, has been better characterized. Also, specific I&I risks have been identified and addressed. In addition to the I&I impact reporting, SmartCover provides an early warning for whenever a jetter truck is needed to vac a known sewer line that gets loaded with grease and backs-up frequently. During the deployment, they identified two catch basins connected to the sanitary sewer, potentially saving thousands of dollars on volume and pump times.

"The SmartCover units and software are easy to use and we get great value by quickly moving them from site to site."

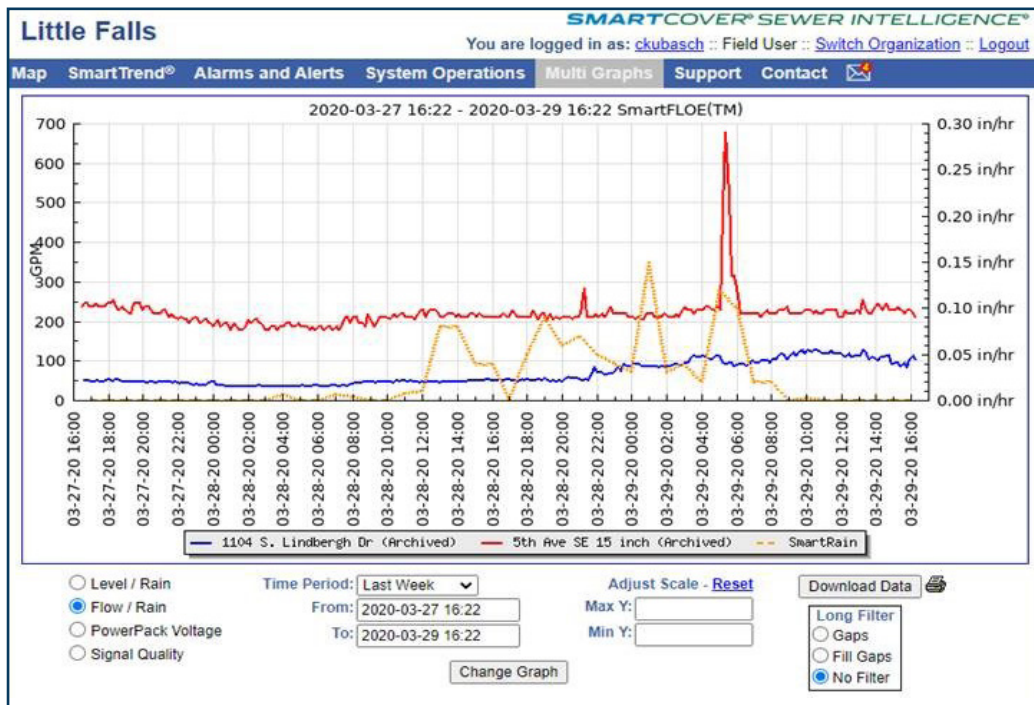
-- Matt Streit, Little Falls Wastewater Superintendent

RAPID IDENTIFICATION OF INFLOW IS KEY TO PREVENTING SPILLS

DURING SPRING FROST MELT, SMARTCOVER IDENTIFIED A JUMP FROM 400 GPM TO 800 GPM ON A MAIN TRUNK LINE IN LESS THAN TWO MINUTES.

Real-time monitoring is key to successful spill prevention

The west side of town, situated on the western shore of the Mississippi River, has a very high water table and considered a significant source of inflow, however, the magnitude was not easy to measure. With a SmartCover unit installed on the main trunk line, the readings from March 2020 immediately indicated a doubling of water flow coming from the west side sustained for over a month. The SmartCover analytics and multi-graph display enabled staff to clearly see specific inflow locations and the peak seasonal patterns when fused with local rain data.



SUMMARY:

Through their innovative use of SmartCover technology, the City of Little Falls, MN has quickly gained a broader and deeper understanding of key issues across all sections of the city collection system -- including water table diversity, sewer flow conditions and seasonal variations. Leveraging real-time monitoring and rich data analytics, the city staff have already addressed inflow challenges, avoided spills and improved system management while reducing costs. Over the longer term, it is anticipated that additional payback will come in the form of improved planning and better decisions on capital investments.