SMARTCOVER

SAN DIEGO SUBURB AVERTS MAJOR SEWER SPILL DURING STORMS

THE CHALLENGE

Escondido, CA, one of the oldest incorporated cities in San Diego County, has an extensive sewer collection system: 375 miles of pipe, 14 lift stations, and the Hale Avenue Treatment Plant. The city has a population of 150,000 and a collection system with pipes as old as 100 years.

In January 2017 an"atmospheric river" brought significant rain to Escondido, placing undue stress on portions of the collection system due to inflow and infiltration (I&I) and local subsidence. Escondido received nearly five inches of rain - - half of their typical annual rainfall amount -- in four days.

A section of steel reinforced concrete pipe spanning 173 feet collapsed sometime shortly before 1:47am on the morning of January 21st during a high flow I&I event.

THE SOLUTION

Over recent years, the City of Escondido has expanded their SmartCover™ monitoring system to 33 locations, including all of their lift stations. Data from the monitoring units had already provided Escondido with many early warnings of potential spills.

The pipe collapse took place in a 24 inch line about 700 feet downstream from a SmartCover monitored location.

Water pooled upstream at a time of day when flows were low, but I&I from the recent storms was high. As the water pooled upstream, the real-time monitor picked up the rise that took place over about 20 minutes prior to triggering an alert.

THE RESULTS

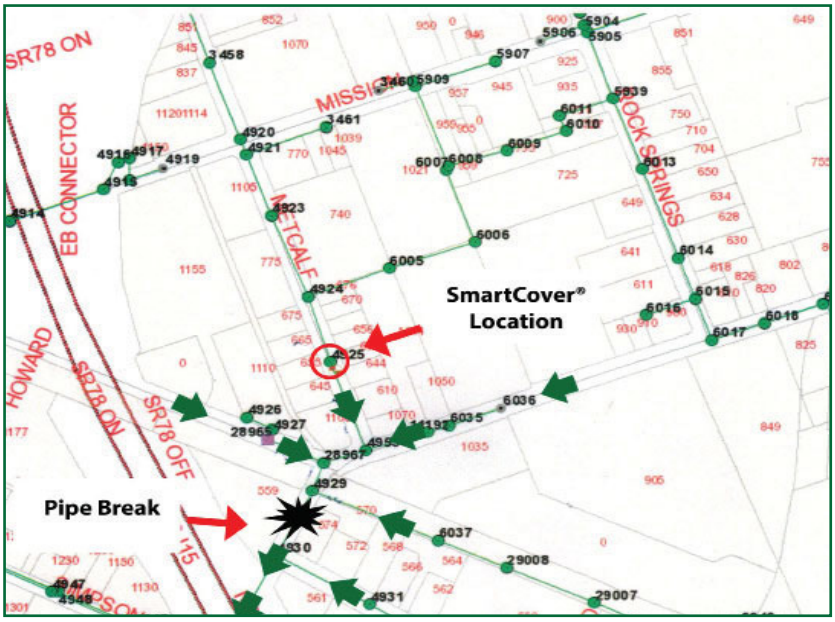
Within 20 minutes of the real-time alert, Escondido staff were onsite searching for the reason for the backup. They quickly discovered the 24 inch collapsed pipe downstream. There was no spill and the city estimates the early notification saved millions of dollars in fines and repairs.

According to Utilities Director Chris McKinney, real-time, early warning provided by the SmartLevel system was key. "The SmartCover system performed extremely well for us and helped us avoid a much larger problem."

> *"The SmartCover system performed extremely well and helped us avoid a much larger problem."*
>
> *- Chris McKinney, Utilities Director*

FLOW MONITORING IS KEY TO I&I DETECTION AND QUICK RESPONSE

THE 24 INCH PIPE COLLAPSE OCCURED AT THE LOCATION SHOWN BELOW. PRIOR TO A SPILL OCCURING, WATER BACKED UP TO THE SMARTCOVER SITE AND A SPILL WAS AVERTED.



Inflow and Infiltration (I&I) is a high impact cost for utilities. It occurs when groundwater or storm water flows into the wastewater collection system, through cracked pipes, leaky manholes or unauthorized connections.

Excessive I&I can overwhelm a collection system's capacity creating overflows. I&I also increases wastewater treatment plant flows unnecessarily driving up processing costs.

Camera work performed after the spill and prior to repair shows the extent of the collapse and the blockage caused by decaying concrete.

SUMMARY:

Through the combination of continuous real-time monitoring using well-placed SmartCover systems and fast response by Escondido wastewater field staff, the City was able to quickly pinpoint the collapsed pipe location.

Repairs commenced immediately, thus avoiding a major spill, minimizing property damage and avoiding potentially millions of dollars in fines, lawsuits, and the prospect of more extensive repair and remediation costs.

SMARTCOVER®

WE'VE GOT IT COVERED™

SmartCoverSystems.com