

# A Sinking Feeling

## Collapsed Pipe, Deplorable Manholes Put EIPI to the Test

By Mike Kezdi

**W**hen the workers at the Waste Management landfill serving the Dallas-Fort Worth Metroplex noticed a hole forming at the landfill, they knew there was a problem.

A call was made to the City of Lewisville Utility Line Maintenance Division, the department tasked with the maintenance and repair of water and sewer mains in Lewisville, Texas where the landfill is located. The problem was so severe that James Wallingsford, the utility line maintenance manager, was called to decide on how to handle the emergency repair.

Wallingsford, who has since retired from the City of Lewisville and now works for the Texas Rural Water Association, says he knew the problem was severe if he was being called to the field to decide, noting that his position as maintenance manager was mostly an office position. What he saw was a sinkhole and an exposed 7-ft section of reinforced concrete pipe (RCP).

"I made the decision that this was an emergency because - with all of the earth that washed into the sewer line - there could be a clog, causing a backup and an eventual overflow going into a Waterway

of the United States, which is about 500 ft away from the collapse," Wallingsford recalls. "You never want sewerage to get into a creek or lake or any waterway because of the environmental impact. I called my direct supervisor; I gave him the specific of the job and recommended that we called a contractor that was already working in Lewisville on a job and piggyback off that contract."

The initial idea was that the contractor - Western Municipal Construction of Texas LLC - who was working elsewhere in the city would be able to core into the two manholes on either side of the collapsed section and then direct bury a new section of PVC. While assessing the situation, the contractor noted that he could do the work, but was aware of a newer technology that could line the pipe trenchlessly. This, the contractor told Wallingsford, would be less expensive and likely a quicker repair. Two things not commonly associated with an emergency repair.





Wallingsford, based on his many years in the sewer and water sector, was aware of cured-in-place pipe (CIPP) and other trenchless rehab methods, but none he knew of would work on a pipe as deteriorated as this. “In my experience, CIPP would blowout when it got to the collapsed section of pipe, but he [the contractor] was persistent on getting the company [with the new technology] out to look at the pipe,” Wallingsford said.

### The Trenchless Solution

The call was made to Fort Worth-based Resinating LLC. In less than hour, Ed Rau, general manager, and Jim White, CEO, of Resinating and Applied Fiberglass Enterprises (AFE) were on scene. Rau and White knew that the Resinating Expand-in-Place Integration Technology (EIPI) would work on this project. Both co-invented and patented the EIPI Technology at AFE. Resinating LLC was created to own the patent and expand the use of EIPI in the trenchless marketplace.

“Ed told me that Resinating could do this,” a skeptical Wallingsford recalls. “Well, I must be from Missouri because it’s the ‘Show Me State.’ I told Ed that he would have to prove it because I didn’t believe it. But we gave it a shot.” Rau and his team were so confident that he told Wallingsford that if the product did not fix the repair, the city wouldn’t owe Resinating LLC a dime.

Two days later, Resinating LLC was back at the landfill with its patented Fiberglass Expansion Liners ready to reline the 80-ft length of 30-in. diameter reinforced concrete pipe. Wallingsford was still skeptical that the flexible fiberglass would be able to make the needed repair without deflections or other issues. Rau reassured him that once Resinating’s proprietary primer and bonding agent were applied and the Resinating Fiberglass Expansion Liners in place, the city would have a perfectly round, structurally sound and leakproof pipe. The project was complete in one day, and to Wallingsford’s surprise and delight, with zero deflections. “Knowing the other methods available, even if there was a slight deflection, I would have been okay, but to have a smooth and leakproof pipe

was amazing,” he recalls.

However, everything wasn’t smooth sailing. To help Resinating’s five-man crew access the pipe, the city removed the above-surface corbels for the two manholes on either side of the collapsed pipe. What they found was a severely deteriorated structure, the likes that Wallingsford had never seen before, he was surprised the manhole structures were still standing.

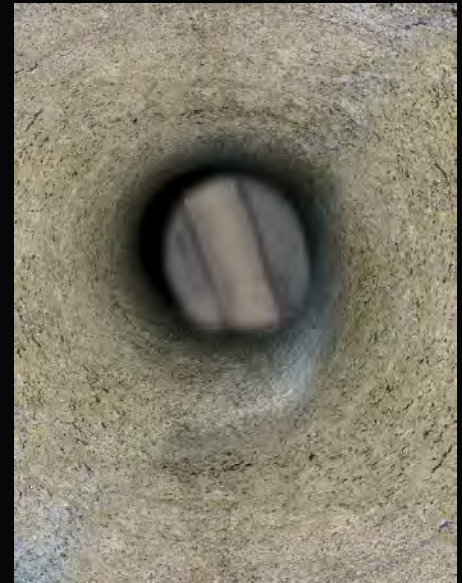
“When we went to clean the manhole, about half of the concrete in the cast-in-place manhole was gone to the rebar, and about one-third of the rebar was gone,” says Rau.

Again, an emergency presented itself, and Rau reassured Wallingsford that the manholes could be repaired using the EIPI Technology. The manholes were cleaned and prepped, and the work took place two days later.

Both the manhole and pipe rehab processes are the same. The surface is properly cleaned with a pressure washer or jetter truck, the proprietary primer is applied followed by the bonding agent and the fiberglass liners are put in place. If there is a void present, it is identified, and the void is filled using the bonding agent after the fiberglass liner is in place. The emergency repair was complete using 6-ft liners, though liners can be up to 18 ft in length if needed. These lengths will increase when Resinating’s new manufacturing plant opens.

“The cost of manhole replacement vs. relining as they did is significant. To be honest, from everything I’ve researched, I’d rather have the fiberglass than a pour-in-place manhole. The job itself tuned out to be way better than I had ever expected,” Wallingsford says. “The workmanship was incredible. We ended up having them complete a repair on the 600 ft section downstream of the last manhole they did. We TV’d that section and the line was in horrible shape with pieces of metal hanging inside of the pipe from top to the bottom.”

This discovery also gave the department a clue as to what led to the decay and collapse of the pipe and the two deteriorated manholes. Wallingsford and Rau point the blame at a build-up of hydrogen



sulfide (H<sub>2</sub>S). Debris would get stuck on the exposed metal creating an increase in the H<sub>2</sub>S and the two manholes were at the high points on the sewer and the gas would get trapped in the chimney section.

“The city has TV’d that section of pipe three times since the install in the summer of 2020 and there are no signs of I&I,” Wallingsford says. “It still looks exactly as it did when it was installed. I’m impressed with the product and Resinating LLC. It’s a new product, but I think in 20 years, Resinating will be a leader in this industry.”

**Mike Kezdi** is managing editor of *Trenchless Technology*.