



SEALING THE I&I THREAT

HOW THE CITY OF SPRINGTOWN AVOIDED PREMATURELY PAYING MILLIONS FOR WASTEWATER TREATMENT EXPANSION

BY JULIE CHESNA

Inflow and Infiltration (I&I) from leaking manholes is a serious and costly problem for wastewater treatment plants. Manholes can develop cracks or gaps over time, allowing rainwater and groundwater to seep into the sewer system. This infiltration dramatically increases during storms, overwhelming the wastewater infrastructure with large volumes of excess water that should not be treated. As a result, the plant's capacity is strained, leading to higher treatment costs, potential overflows, and increased wear on equipment. In severe cases, the plant may reach regulatory capacity limits, forcing municipalities to prematurely invest in costly expansions.

DEPLOYING A SOLUTION

ECM Holding Group (ECM), a subsidiary of EMCOR Group, Inc., is a solutions-based provider for Energy Service Companies (ESCOs). They saw a rise in Environmental Protection Agency (EPA) consent decrees targeting utilities for inflow and infiltration

issues and quickly acted to identify a solution they could provide ESCOs. They began to evaluate options to repair manhole leaks, looking at everything from cement liners to epoxy-based solutions, but found that nothing held up. After thorough testing, they landed on a polyurethane-based product manufactured by OBIC. The spray-applied, flexible lining systems are designed to meet the demands of municipalities and industrial wastewater systems, addressing concerns such as hydrogen sulfide corrosion and structural deterioration—extending the life of the manhole by 50 years. In 2021, they began offering the solutions to clients. The manhole lining technology was adopted by several ESCOs because they were already engaged in wastewater treatment projects, and this technology coupled well with smart meter projects that had budgeted for infrastructure upgrades. ECM has seen success utilizing demo sites to allow municipalities to experience the installation process and see the product.

BEFORE



Sewer manhole before rehabilitation
Photo provided by ECM Holding Group

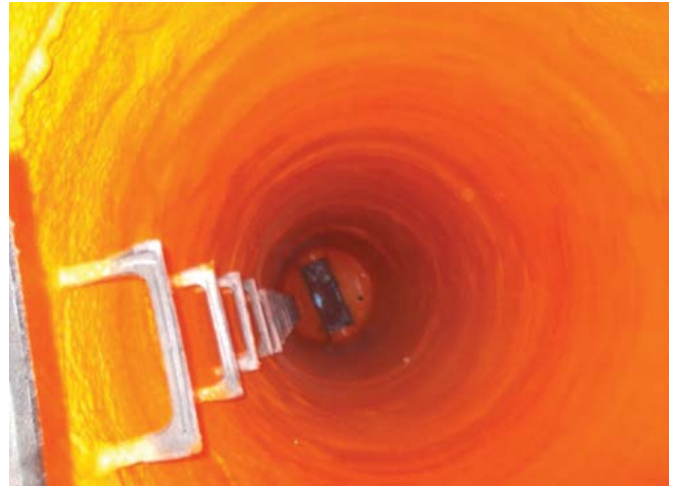
Shawn Hunsberger, Vice President of Business Development of ECM, explains how the innovative manhole lining solution can be part of a more comprehensive infrastructure project for smaller municipalities; “We can combine manhole lining with other infrastructure solutions, such as cure-in-place piping (CIPP) to line sewer pipes. At treatment plants, we can also help reduce chlorine costs with on-site sodium hypochlorite generators, which reduce the need for store-bought chlorine. For smaller cities, ESCOs sometimes hesitate to take on projects because of their size, but we’ve seen success in adding manhole lining projects to enhance overall infrastructure upgrades.”

SPRINGTOWN, TX

Springtown, TX—a rural community of 4,700 residents just outside Fort Worth—was facing a looming \$5-6 million expense to prematurely expand its wastewater treatment plant, as I&I issues were pushing the facility to its capacity limits. However, in 2023, the city took a proactive approach by selecting Ameresco through the TIPS Co-op, utilizing Texas Local Code 302, to rehabilitate their manholes as part of a comprehensive Energy Savings Performance Contract (ESPC). The project didn’t just stop at I&I repairs—it also included an Advanced Metering Infrastructure (AMI) system, meter replacements, and copper and lead surveying to meet stringent EPA requirements.

Ameresco enlisted ECM to provide the innovative manhole lining solution, addressing the city’s I&I problem and extending the life of its wastewater infrastructure. Chad Nobles, Sr. Account Executive at Ameresco, stated, “We were well aware of the timeline and construction schedule associated with the AMI system, meter replacements, and the lead and copper survey. We also knew the city had an inflow and infiltration issue in its wastewater system. That’s when we partnered with ECM to tackle the problem through manhole rehabilitation. The city had been addressing a few manholes here and there but had never taken a comprehensive

AFTER



Sewer manhole after rehabilitation
Photo provided by ECM Holding Group

approach until this project.” This cost-effective and timely intervention prevented an otherwise unavoidable multimillion-dollar expansion. Energy Services Media (ESM) spoke with David Miller, the City Administrator, and Christina Derr, the Assistant City Administrator, to dive deeper into the project’s impact and explore how they successfully financed the initiative.

ESM: What were the issues the city faced with the manholes and I&I problems?

Miller: We had a significant I&I issue at our wastewater treatment plant, primarily caused by rainwater and surface runoff entering our manholes. We had about 223 manholes identified as having a major impact on the plant due to leakage. The leakages were causing our capacity at the wastewater treatment center to spike, we were around 67% capacity. The Texas Commission on Environmental Quality (TCEQ) has regulations around wastewater treatment capacity; we could not exceed 70%, and if we did, we needed to expand the treatment plan quickly. We were approaching the point where we’d need to plan for an expansion, which would have cost us \$5–6 million. With this project, we expect a reduction of about 17–23% due to the manhole repairs, which buy us more time.

ESM: What was the city’s initial thoughts on the manhole lining solution presented by Ameresco?

Miller: We were impressed because the only other option would have been to rebuild 223 manholes, which would have cost millions. The lining provided a more affordable, long-term solution.

ESM: Why did you choose an energy savings performance contract to finance this project?

Miller: It’s a safeguard for the city. With performance contracting, if we don’t achieve the projected savings, the energy service company is responsible. It’s a win-win—improved efficiency in operations and guaranteed results.



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—Christina Derr,
Assistant City Administrator

ESM: Did you face any challenges getting the performance contract approved?

Miller: Not at all. We did a lot of groundwork, educating the council well in advance, so they were on board from the start.

Derr: We started educating the council at least six years before the project began. As the need for upgrades grew more urgent, it became clear to them that this was the best option. The availability of ARPA (American Rescue Plan Act) funds also helped us move forward.

ESM: What recommendations would you give to other city administrators considering a performance contract for upgrading water infrastructure?

Miller: Do your homework. If you are considering an AMI system, ensure that it meets the overall needs of your community. Take the time to carefully study the cost savings and evaluate whether the investment is worth it by determining how long the return on investment (ROI) will take. It’s also crucial to work with a reputable company that understands the business thoroughly rather than choosing a company offering cut-rate services.

Make sure you educate both your council and your citizens. Christina, for example, has done an excellent job of communicating the changes to our residents about the meter replacements, and as a result, we’ve only had about six or seven complaints out of nearly 1,700 utility customers. That’s a small number, considering many are adjusting from outdated meters that were less accurate to new ones that provide precise readings, which may cause some to see higher bills.

Derr: If I were talking to another city official, I’d stress not to be intimidated by the price tag. Take a hard look at the opportunity cost of not moving forward. There are plenty of creative funding mechanisms available, including grants and other options, especially for energy-saving projects.

When we approached the project with openness, we found ways to make both the AMI and manhole rehab happen. So, don’t be shocked by the initial price—look at the long-term savings over 10, 15, or 20 years, and you’ll likely see that the investment pays off.

Yes, it’s expensive, especially for a small city like ours with limited excess revenue. But with federal dollars playing a key role and other opportunities such as grants or low-interest loans, it’s possible to make it work.

Springtown’s manhole rehabilitation project stands as a powerful example of how municipalities can tackle urgent infrastructure issues while safeguarding their financial future. By leveraging performance contracting and cutting-edge technology, the city extended the life of its manholes, improved water infrastructure, and avoided premature expansion costs. For other cities facing similar challenges, Springtown’s strategy offers a clear lesson: don’t wait for the crisis to force your hand. Instead, take control by combining smart technology, flexible financing, and long-term planning. With federal funds like ARPA and other grants available, even small municipalities can undertake ambitious infrastructure upgrades that deliver substantial cost savings and operational improvements. ✨