



Forward Thinking and Strategic Planning: Keys to DuPage County's Successful CPP Sprayliner Rehabilitation Project

In December 2024, DuPage County Public Works Department completed a strategically executed infrastructure rehabilitation project that demonstrates how innovative partnerships and advanced materials can effectively address complex infrastructure challenges. The project, located in northeastern Illinois where DuPage County serves over 900,000 residents across 336 square miles, involved the rehabilitation of a critical lift station that had been facing significant deterioration.

To pursue more cost-effective solutions for this critical project, the forward-thinking utility department chose to leverage their recently executed OMNIA Partners contract with Insituform Technologies. This cooperative purchasing contract contains many trenchless rehabilitation methods including manhole/lift station rehabilitation and is available to be utilized by other public utilities nationwide.

Insituform Technologies, founded in 1971, is a global leader in trenchless pipeline rehabilitation. Specializing in cured-in-place pipe (CIPP) solutions, the company uses non-disruptive methods to renew pipelines for sewer, water, and other industries. With operations worldwide, Insituform's innovative processes minimize excavation, reducing costs and environmental impact.

For this DuPage County project, Insituform evaluated several potential technical approaches to ensure optimal results. After careful consideration, Insituform recommended Epoxytec's advanced coating system as the ideal technology solution for the lift station's specific challenges. With the decision to utilize this specialized system, the team focused on addressing two implementation requirements: specialized crew training and equipment deployment.

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Featured Products

Series 456 | CPP Sprayliner



Project Information

Location

DuPage, Illinois

Completion Date

December 14, 2024

Structure

Carbon Steel Lift Station

Owner

DuPage County

Applicator

Insituform Technologies

Top Image: Deteriorated lift station showing the initial condition of the steel structure before rehabilitation.

Bottom Image: Epoxytec equipment trailer on site.



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123 West 23rd Avenue, North Kansas City, Missouri 64116 USA +1 816-483-3400 epoxytec.com



DuPage County's CPP Sprayliner Rehabilitation (cont.)

Epoxytec, a subsidiary of Tnemec Company with over a century of protective coating expertise, offers product training through its ECAN (Epoxytec Certified Applicator Network) certification program. Three Insituform technicians—John Compton, Brad Schwartz, and Michael Hart—completed this professional training in Kansas City under the guidance and expertise of Epoxytec's Director, Vaughn O'Dea. The training's timing aligned perfectly with the project schedule. Additionally, the team arranged access to the specialized spray application equipment needed for the high-performance coating system.

The rehabilitation process began with a thorough site survey to assess conditions and develop appropriate methodologies. The team identified several technical challenges including active flow management requirements, an existing failing coating system, potential through-wall deterioration in the substrate, and potential cold weather application conditions with ambient temperatures below 10°F.

A comprehensive plan was developed.

The plan included strategic bypass pumping with flow-through plugs and cam locks, which required 24/7 monitoring. The preparation process involved abrasive blasting to achieve SSPC-SP10/NACE No. 2 Near-White Metal cleanliness standard with a 4.0 mil angular anchor profile, with contingency planning for substrate repairs using pre-rolled steel pieces and on-site welding capabilities if through-wall deterioration was discovered. Fortunately, these contingency measures proved unnecessary, but their inclusion demonstrated the thoroughness of the planning process. DuPage County took responsibility for removing pipes, structural elements, and pumps from both the 20-foot-deep carbon steel wet well and 8-foot-deep valve vault. This division of responsibilities reduced the project scope while maintaining high quality standards for the rehabilitation work.

Despite challenging winter conditions and temperatures below 10°, the Insituform crew created a controlled application environment by enclosing the work area to minimize wind and cold exposure and deploying indirect-fired heaters to achieve approximately 85°F ambient temperature. This allowed sufficient pre-heating time to bring the substrate temperature to approximately 75°F and maintain a controlled temperature

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Top Image: Insituform technicians with the enclosed worksite structure that provided critical environmental control during cold weather application, helping maintain optimal temperature for the Series 456 CPP Sprayliner curing process.

Bottom Image: Technician applying the CPP Sprayliner in the wet well.





DuPage County's CPP Sprayliner Rehabilitation (cont.)

throughout the application and cure phases.

Epoxytec CPP Sprayliner (Series 456) was selected for this project based on several critical performance attributes. Its superior bonding in high-humidity, high-condensation environments typical of sanitary sewer systems made it ideal for this application. The material's high film strength is capable of withstanding hydrostatic pressure and rapid cure technology—achieving water resistance in less than an hour under optimized conditions— which proved essential for the project's success. The ultra-high build capability allowed for efficient application in a single coat, while its chemical resistance ensures long-term performance in the aggressive environment of wastewater infrastructure. Furthermore, the material creates a seamless barrier against inflow and infiltration (I&I), effectively addressing one of the primary concerns for the lift station.

The high-performance Epoxytec CPP Sprayliner was applied using plural component spray equipment to ensure even distribution. Applicators focused on proper overlap techniques, consistent application speed, optimal spray distance from substrate, and regular wet film thickness measurements to ensure specification compliance.

Another unique challenge encountered during application was infiltration at submersible pump anchor bolt locations. The client requested that the anchor bolts remain uncoated for future maintenance access. The rapid cure properties of CPP Sprayliner allowed the team to effectively seal these areas while accommodating the client's requirements. During project execution, the team demonstrated the value of experience-based decision making. Upon completing the surface preparation of the valve vault, inspection revealed that the upper portion did not require rehabilitation. The team adjusted the scope, accordingly, applying CPP Sprayliner only to the bottom 3-4 feet of the 8-foot-deep valve vault. This flexible approach preserved resources by avoiding unnecessary coating of surfaces and demonstrated value-conscious decision making, enhancing client satisfaction by responding to actual field conditions.

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Close-up view of the completed coating application in the wet well, showing the seamless protective barrier.





DuPage County's CPP Sprayliner Rehabilitation (cont.)

Michael Lovell from Tnemec's Technical Services and local representatives Joshua Otten from Tnemec/Epoxytec were on site throughout the project, bringing valuable experience with manhole rehabilitation and similar equipment. When the abrasive blasting equipment experienced issues with a plugged metering valve—a common challenge when operating without water separators on the compressor—Mike quickly jumped in to assist the team in clearing the metering valve and getting the project back on track with minimal delay.

The rehabilitation was completed successfully, delivering significant cost savings while extending service life for this critical infrastructure with minimal service disruption. The high-quality, warranted rehabilitation was achieved despite challenging conditions, demonstrating the capabilities of both the application team and the material system.

DuPage County Public Works Department expressed high satisfaction with the project's execution and outcomes. Their positive response to the quality of work and professional implementation stands as a strong testament to the success of this infrastructure rehabilitation effort.

This collaboration between DuPage County, Insituform, and Epoxytec exemplifies how strategic partnerships between forward-thinking utilities, experienced contractors, and innovative material manufacturers can transform infrastructure challenges into opportunities. By combining their respective expertise, the project was completed efficiently while achieving excellent results—creating a sustainable infrastructure management model that delivers lasting value to the communities served.

