CASE STUDY:

MEDORA, ND

CLIENT

Medora CMP

PROBLEM

A 90-inch corrugated steel plate culvert, commonly known as CMP, which extends for 700 linear feet beneath Interstate 94 near Medora, had severely deteriorated.

SOLUTION

The solution design specified a 500-mil application, with the decision made to apply it exclusively to the initial 130 feet, starting from the inlet end's point of entry.

Situated 130 miles west of Bismarck along the I-94 highway, Medora stands as a renowned gem nestled within the Badlands, drawing a substantial influx of tourists. This charming town serves as a strategic entry point to the southern sector of the Teddy Roosevelt National Park, functioning as a pivotal hub for visitors with an array of historical, educational, and entertainment establishments that enrich the tourist experience. Moreover, Medora is a well-recognized pit stop for travelers en route to Yellowstone National Park, solidifying its status as one of North Dakota's premier tourist hotspots.

The property owner made a disconcerting discovery about a 90-inch corrugated steel plate culvert, often called CMP, running beneath Interstate 94, close to Medora. This culvert, spanning 700 linear feet, had deteriorated significantly. Adding complexity to the situation, the culvert features two 45-degree bends and traverses a fill section exceeding 50 feet in depth. Given the pronounced deterioration of the CMP, the design team opted for a conventional open-cut replacement approach for the initial 130 feet. However, this presented a challenge as it necessitated the installation of sheet piling by a contractor, within the context of a broader project encompassing highway enhancements, bridge decking, and grading. This traditional open-cut method for the CMP culvert replacement would not only divert substantial budgetary resources away from the development of above-ground structures with direct public utility but also entail a considerable extension in construction time and associated risks.

SOLUTION

Just days before the asset owner was set to solicit bids for the I-94 project, they became interested in a trenchless technology solution – specifically, Sprayroq's spray-applied polyurethane liner SprayWall. They engaged Sprayroq's Director of Technical Services for a presentation and an engineering proposal. The proposed solution entailed a 500-mil application, with the decision to apply it solely to the initial 130 feet, commencing at the inlet end.

RESULTS

The Sprayroq Certified Partner (SCP) overcame equipment access difficulties and navigated through potential September weather obstacles. They accomplished the installation of SprayWall without affecting Medora's tourist traffic, all while minimizing construction expenses and maximizing the long-term return on investment (ROI) offered by SprayWall.