



CASE STUDY: While widening Highway 401 to facilitate a new subdivision, KB Homes and Terrahawk contacted UMA regarding a 36-inch iron waterline that required stabilization. HDPR Injection was chosen for the project.

HIGH-DENSITY POLYURETHANE RESIN (HDPR) INJECTION

THE PROJECT

KB Homes and Terrahawk were widening Highway 401 to accommodate a new subdivision when they discovered an unstable 36-inch iron waterline. Located approximately 3 to 6 feet below grade, the customer wanted the pipe stabilized before driving heavy equipment over it. They chose UMA's HDPR process because it was the least invasive option as excavation and replacement was too risky due to the water line being in place.

THE CHALLENGE

The treatment area was approximately 617 linear feet long and along a busy highway so work hours were limited to comply with traffic control requirements. We also had to work cautiously around the existing water line.

The Customer

KB Homes and
Terrahawk

Location

Fuquay-Varina,
North Carolina

Type

Residential

Date of Project Completion

Fall 2021

Interesting Fact

UMA's HDPR process was chosen because excavation and replacement were too risky due to the water line being in place.



CASE STUDY

THE SOLUTION

We hired a testing agency to perform flat dilatometer testing before and after our HDPR injections to gauge bearing capacity progress. We needed confinement above our treatment area to create a durable HDPR/soil matrix to mitigate future settlement or disturbance. That meant utilizing a steel plate. We had two plates covering roughly 9 injection locations so an excavator operator had to constantly move the plate throughout the treatment area.

THE RESULTS

Our process to protect the treatment area was much different than what our crews were used to but they finished the job within the allotted timeframe. Based on the dilatometer test results, we were able to achieve the necessary bearing capacity needed for the project so that the client could actively drive machinery over the water line with no concern of damaging it due to weight. UMA's efforts allowed the contractors to safely return focus to the widening of Highway 41.



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