Ramsey Road was narrow and highly deteriorated prior to FDR in 2008.

Ten miles from the main gate of Marine Corps Base Camp Lejeune, Full-Depth Reclamation (FDR) in Jacksonville, North Carolina has shown it has the grunt to endure the test of time. Over a decade ago, in 2008, the North Carolina DOT (NCDOT) decided to give the badly deteriorated pavement on Ramsey Road the boot and rebuild and widen using FDR with Cement. Ten years later, the decision has paid off with a road still in excellent condition.

Development Wears Out Existing Pavement
Ramsey Road carries approximately 5,500 vehicles per day and is heavily used for logging, construction, and aggregate hauling, as well as commercial trucking and commuting. By 2007, the pavement on Ramsey had deteriorated to the point that simple patching and overlay would not prepare it for future loads. Additionally, residential development was bringing many new loads to the road. NCDOT looked to FDR to rebuild the entire length of roadway, approximately 6.5 miles, as the most cost-effective solution available.

FDR Proceeds Rapidly
NCDOT chose to reclaim the existing pavement to a depth of 12 inches, using 5 percent cement. Widening was accomplished by trenching approximately 12 inches deep alongside the existing pavement, then spreading the pulverized mixture of mainline asphalt, base and subgrade uniformly across the new cross section. This provided deep strength across the new 28-foot width of the roadway as well as reducing the change in final grade from the original elevation.

Barnhill Contracting Company of Rocky Mount, North Carolina was the prime contractor for the project, with Slurry Pavers of Richmond, Virginia as the reclamation subcontractor. Reclamation was completed in approximately four weeks of work, with the FDR being kept continuously moist until covered with the first lift of asphalt. The road was kept open throughout the project with single lane closures, flaggers, and a pilot car while work was in progress. Traffic was allowed on the reclaimed base once the FDR was compacted and no nighttime closures were needed. The first lift of asphalt paving followed a week or less behind the FDR operation, sometimes moving in as soon as the next day.

Ten Years Later, Pavement Quality Remains Excellent
After ten years of heavy truck traffic, the pavement still rides well and has no significant load-related distress. Unlike traditional widening, there is no crack between the mainline and paved shoulder.

Not All Cracks Are Created Equal
“When cement reacts with water, the resulting product is lower in volume after curing,” said Slurry Pavers’ Sales Manager of Business Development David Stowell.
“When properly designed, this can result in tight cracks in the FDR base that reflect through the asphalt overlay. Good mix design and careful control can minimize the number of these cracks and ensure that they remain tight and solid over the long term.” Selection of cement content is a “Goldilocks” scenario, where the aim is to get the “just right” amount of cement to achieve a solid, competent base, but minimize the shrinkage that causes cracking.

After a decade of perfect service to the motoring public, the few shrinkage cracks on Ramsey Road show no significant deterioration. Most motorists will never notice the minor cracking, and careful attention is needed to spot them from a moving vehicle ten years later. Experience at other sites has shown this cracking will not deteriorate or hasten further overlays that will inevitably occur due to asphalt aging. “When considering repairs to deteriorated pavement, the proper question to ask is not whether it will crack, but which treatment will crack the least, provide the most value, and serve the best. Almost always, the answer is FDR with Cement,” said Stowell.

See For Yourself…
From sub-zero cold to broiling hot temperatures, FDR with Cement is a proven solution for restoration of worn-out pavement. Projects of all sizes, from parking lots to interstate highways can be made ready for future traffic in an economical, sustainable manner. Ramsey Road will continue to carry traffic for decades to come, while saving taxpayers money over other paving options. If you have pavement needing repair, FDR with Cement should be on your list of paving options.

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