






The Lewisville Fire Department needed to rehabilitate the asphalt paved areas and expand the parking lot of its fire house. By electing to use the Full Depth Reclamation (FDR) process, the department saved time, money and transformed the deteriorated parking area into one that will last for years to come!

-  29% savings as compared to traditional remove & replace method (Savings realized by reduced pavement sections)
-  Existing materials stay on site eliminating unnecessary trucking and disposal costs
-  Reuses 100% of existing materials in-place
-  Project completed 50% faster by using FDR process
-  Now that a stabilized base has been established, the reconstructed area is stronger than original
-  Full depth process eliminates concerns of reflective cracking

BACKSTORY:

The Lewisville Fire Department, located in the western edge of Winston-Salem, had plans to rehabilitate the asphalt paved areas and expand the parking lot of its fire house. The reconstruction process was critical as the new pavement structure had to support the normal vehicle traffic along with the 35-ton fire trucks that averaged 10 trips per day.

PROBLEM:

The Lewisville Fire Department, located in the western edge of Winston-Salem, had plans to rehabilitate the asphalt paved areas and expand the parking lot of its fire house. The existing asphalt pavement surface had cracked and deteriorated over time. Based on an engineer's report, the pavements contained severe alligator cracking and were at the end of their useful life. Distress observed included fatigue or alligator cracking, exposed aggregate, previously repaired potholes, and isolated surface water ponding. The reconstruction process to be chosen was critical as the new pavement structure had to support the normal vehicle traffic along with the 35-ton fire trucks that averaged 10 trips per day.

“ Full Depth Reclamation process can not only be used on heavy highway projects but can be used on commercial /industrial projects that will save the end user time and money and provide a higher quality finished product. ”

SOLUTION:

The rehabilitation could be accomplished in one of two ways:

1. Conventional remove and replace.
2. Full Depth Reclamation, FDR.

The conventional approach would involve demolition of the existing asphalt pavement, evaluation and remediation of the existing subgrade materials (as appropriate), then placement of new stone and asphalt.

Full Depth Reclamation (FDR) involves pulverizing and mixing the existing asphalt and underlying subgrade materials (stone

and/or subgrade soils) to a predetermined depth, adding cement (as required), and then placement of new asphalt.

Ultimately, the FDR process was chosen, which led to a 29% savings as compared to a traditional remove & replace method. The bulk of this savings was realized from the reduced trucking costs and required asphalt pavement sections. Other benefits included:

- Project was completed in half the time as compared to traditional methods
- The elimination of material disposal concerns
- Full depth process eliminates concerns of reflective cracking
- In-place recycling means no hauling away or importing of new material
- Future maintenance costs are reduced by improving product performance

PHOTOS:



Before



Pulverize



Rough grading



Applying and mixing Portland cement



Asphalt Paving



Finished project