When They Said We Could Repair Our Asphalt Roads with Portland Cement, We Laughed!

Like most counties, Houston and Choctaw Counties in Alabama have their share of older asphalt roads that are failing due to age and lack of proper engineering. Additionally, skyrocketing fuel, asphalt and labor costs represent a larger share of their budgets.

Traditional road repair methods were quickly becoming a financial burden to the counties. Peeling up stretches of deteriorated asphalt, loading it onto trucks, hauling it off to dump it and hauling in new base was costing them not only money but precious time and labor.

They needed to find a better, faster, cheaper solution to their county road repairs. And, that solution needed to include longer-lasting roads

That's when county engineer, Mark Pool and assistant engineer, Barkley Kirkland, discovered full-depth reclamation (FDR) with portland cement.

These engineers were already familiar with the benefits of FDR where the road surface is blended with a portion of the base. They learned that by adding portland cement to the surface of the road before reclaiming, they could make a better, longer lasting repair.

Key to making this process economical was the purchase of an Asphalt Zipper, a portable asphalt reclaimer that mounts on the bucket of a front-end loader. The model they chose features a 4-foot cutting head and a 185 hp diesel engine.

At first, the county applied cement from bags from the back of a truck. They soon realized that they needed a faster and more accurate and efficient way for the cement application. This was resolved by using a spreader box that fits on the rear of their dump truck. It allowed them to accurately meter the amount of cement they need–usually about 1/2 inch for 6"-8" of depth.

After spreading the portland cement on the road surface, they pulverize the old asphalt with the Asphalt Zipper and mix the portland cement and asphalt with an inch or two of the base. Water is injected from a water truck through the Asphalt Zipper's onboard spray bar during the reclamation process. The road is then graded and compacted and left to cure for a day or two.

The finished road base is very solid and will continue to strengthen for years to come. A wear course of asphalt or chip seal can then be applied for a beautiful, smooth road that will last for many years.

But does this process save Houston County the time and money they were hoping for? Assistant engineer, Barkley Kirkland smiled and said, "Oh, yeah, we can get a lot more done now. What used to take us 2 days to do, we can now get done in 1/2 a day! And we get a better road."

Garry Grantham of Choctaw County, has discovered that FDR with cement is the best way to repair their older, damaged roads, too. Once the cement has cured they have found great success simply paving the reclaimed road with chip seal instead of asphalt.

When asked why chip seal instead of an asphalt surface, Grantham answered, "After we do full-depth reclamation on the road and compact it well, the road base is often so solid that chip seal is all it needs. But the biggest reason is savings. With the high cost of asphalt, we can do more roads using chip seal. We find we save over $10,000 per mile using chip seal instead of asphalt!"

"We're saving at least 50% in material costs and doing it all in one third of the time. When you can get the same or even better results in only a couple of days compared to what would have taken us a couple of weeks. Everyone is better off."

Grantham sums it up, "We can only put off projects so long. The work has to be done. We've got to be looking for ways to be more productive and efficient, and right now full-depth reclamation is an affordable long-term solution that really works."