

Using CIR, SCDOT increases treated pavement area by 700% without increasing cost.

No change order or increase in cost compared to proposed approach

50% total project time savings vs traditional methods

700% increase in the amount of road treated and repaired to full depth vs patching

Increased structural value

BACKSTORY:

US 123 out of Pickens, South Carolina is a well traveled road, running directly between Clemson University and Greenville. On an average day, US 123 is traveled by more than 20,000 vehicles, including 15% truck traffic, with the already high volume nearly doubling on game days during the university's football season.

PROBLEM:

Over time, heavy traffic took its toll on US 123. In 2019, the four lane divided highway was showing severe deterioration. It required patching, shoulder widening, milling and overlays-- and it had to be done without disrupting game day traffic. The initial project proposal included 8" of full depth patch & pave on nearly 40% of the project-- with shoulder widening, 2" milling and paving on the remainder. Needless to say, this complex approach was expensive. Not to mention, even with the patching and widening, the initial approach still wouldn't strengthen or repair the structure of the road.

“ The project went from patching troubled spots to a complete procedure for a consistent road. ”

— Kimbel Stokes, General Manager, Miller Group

SOLUTION:

In response to the initial proposal, chemical stabilization engineer Laura Kline brought her knowledge of Cold In-place Recycling to bear as an alternative solution. Kline's value-engineered plan consisted of 8" of bituminous foam stabilized CIR, extending all the way to the road's shoulder. This meant SCDOT would be able to widen the road without adding a joint in the pavement. Based on an existing Virginia DOT spec, the new approach would shorten construction schedules, and increase the structural value of the road without increasing cost. In the end, SCDOT was able to reconstruct and improve the existing road at a reduced cost by leveraging their existing assets through in-place recycling.

SCDOT considers US 123 as a successful first experience with Cold In-place Recycling. The long term sustainability of the process has opened the state to further use of alternative reclamation treatments, and will allow US 123 to withstand the continued high volume of traffic for years to come-- even on game days.

[See the SCDOT pdf presentation here.](#)

PHOTOS:



Before construction



Before construction



Before construction