

# NCDOT Traffic Safety Unit Programs



## Long-Life Markings & Wider Edge Lines on Rural 2-Lane Roadways

NCDOT completed a safety study of long-life pavement markings on rural 2-lane roads. The pavement marking material used on this project are what NCDOT considers “long-life markings” because they are generally more durable materials. The Department’s primary interest in the long-life marking initiative was the anticipated improved safety performance on the treated corridors. Other benefits for long-life markings include long-term cost savings associated with material durability, reduced exposure of workers applying pavement markings, and planning for the use of autonomous vehicles.

### Background

The new markings were installed on over 400 miles across 11 of 14 Divisions between 2014 - 2017. Four variations of center line and edge line pavement markings were studied:

- Standard Width (4” Wide) with Highly Reflective Elements
- Standard Width (4” Wide) with Standard Beads
- Wider Width (5”–6” Wide) with Highly Reflective Elements
- Wider Width (5”–6” Wide) with Standard Beads



6” Wide Markings with Standard Beads  
SR 1004/ Island Creek Rd in Jones County



6” Wide Markings with Highly Reflective Elements  
SR 1306/Beautancus Rd in Duplin County

### Results

- ✓ **13% reduction in lane departure crashes** after long-life markings (statistically significant)
- ✓ All groups saw crash reductions, but **best safety results for wider markings** with standard beads, which saw a 19% reduction in lane departure crashes (statistically significant)
- ✓ Long-life markings maintained adequate levels of retro reflectivity for years and are expected to **provide 5 to 7 years or more of enhanced roadway delineation**
- ✓ The significant safety results inspired a **statewide safety initiative** to invest millions of dollars to systemically apply long-life markings to thousands of miles of rural 2-lane roadways in North Carolina.
- ✓ **Wider long-life markings are being deployed as a low-cost safety countermeasure** on select secondary roads with concentrations of lane departure crashes.