

# NCDOT Traffic Safety Unit Programs

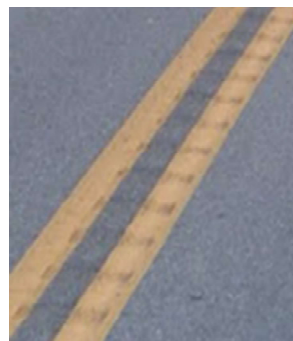


## Rumble Strips

Rumble strips on rural, 2-lane roadways are a proven safety countermeasure to reduce roadway departure crashes based on robust research at the national level. Rumble strips create noise and vibration inside the vehicle that alerts a driver as they cross the center or edge line. The countermeasure can target drowsy or distracted drivers.

## Background

NCDOT completed an internal, preliminary safety study on 35 rural 2-lane roadways where rumble strips were applied between 2006 - 2018. Applications were “standard” profile and included placement on the edge line, shoulder, and/or centerline.



Edge Line or Shoulder Rumble Strips (Left Two Images) – 10 Study Sites

Centerline Rumble Strips (Right Image) – 11 Study Sites

Edge Line or Shoulder AND Centerline Rumble Strips Combination – 14 Study Sites

## Results

**Lane Departure Crashes were reduced** for all treated groups, showing statistically significant safety benefits for rumble strips:

- **30% Reduction** for all Sites
- **23% Reduction** for Edge Line or Shoulder Application
- **28% Reduction** for Centerline Application
- **36% Reduction** for Edge Line or Shoulder AND Centerline Application

Other Considerations:

- Rumble strips can demonstrate significant safety improvements but there are two main concerns that mean rumble strips cannot feasibly be placed everywhere. Some mitigation options can help alleviate concerns.
- **Noise** – Sinusoidal rumble strips can be used to help minimize noise impacts.
- **Bicyclists** – Several options are available for adjusting rumble strip dimensions, location and offset to better accommodate bicyclists.

