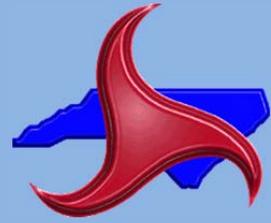


# NCDOT Traffic Safety Unit Programs



## Roundabout Evaluation

NCDOT completed a safety study of 30 intersections in North Carolina where a roundabout was installed. Many of the study locations were installed for operational or traffic calming purposes, although a handful were installed specifically for safety reasons.

## Background

The study includes a diverse group of intersections where a roundabout was installed in urban, suburban, and rural areas. Intersections with a range of volumes and approach speeds are included. The study is comprised of locations converted from two-way stop sign control to a roundabout, or from signalization to a roundabout. The roundabout size varies at the study locations, from an inscribed circle diameter of approximately 50 feet to over 130 feet. The study focuses on single lane roundabouts; only one site uses a multi-lane configuration.

The purpose of the evaluation is to measure changes in total intersection crashes; fatal and injury crashes; and frontal impact crashes after intersections were converted to roundabouts.

## Results

The overall results from all study locations indicate a:

- 46% Reduction in Total Crashes,
- 75% Reduction in Fatal and Injury Crashes, and
- 76% Reduction in Frontal Impact Crashes.

Other key points of the study:

- There appears to be an even greater reduction in Total Crashes at the higher speed (45-55 mph) treatment sites.
- The reductions in Total Crashes were similar regardless of whether the intersection has three legs or four legs.
- The reductions in Total Crashes were similar regardless of whether the before control was a two-way stop or a traffic signal.



Top: Aerial View of a rural roundabout included in the study

Middle: Roundabout located near North Carolina's coast

Bottom: Roundabout located in downtown Charlotte