

Reduced Conflict Intersections



Reduced Conflict Intersections in North Carolina
NCDOTcommunications



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Corridors with growing traffic volumes and high crash rates are good candidates for a reduced-conflict intersection.

A reduced conflict intersection – sometimes referred to as a superstreet, a synchronized street or a median U-turn – is a general term used to describe several types of designs that can be used to improve safety and traffic flow on a highway.

There are variations to the designs, but they all function the same by reducing by almost half the number of potential locations, or conflict points, where drivers and pedestrians

can collide. As this [short video](#) explains, the N.C. Department of Transportation built its first reduced conflict intersection around 2000 in Jackson County, west of Asheville.

Simplifying How Traffic Moves

The most common type of reduced conflict intersection design eliminates left turns from side roads onto busy main roads.

Raised medians direct traffic from the side road into turning right. When there is a safe opening in traffic, drivers enter the flow of traffic on the main route. To go the other direction, or cross the highway, they pull into a dedicated lane – typically less than 1,000 feet away – and make a U-turn. There might be a traffic signal at this location.

In cases of dual right-turn lanes from the side road at a signalized intersection, drivers should stay in the left lane, if they intend to make the U-turn once on the main corridor.

Reducing the Risk of Crashes

A traditional four-way intersection has many potential conflict points. Because drivers can go in any direction from all four approaches, the likelihood of a crash is increased.

In 2023, NCDOT's Traffic Safety Unit completed a safety study of 31 reduced conflict intersections that were constructed without traffic signals in North Carolina between

Examples of Reduced Conflict Intersections



2009-17. The overall results were:

- 50 percent reduction in total crashes.
- 80 percent reduction in frontal impact crashes, which are associated with serious injuries and head-on or T-boned collisions.

A 2017 study by the Federal Highway Administration found that reduced conflict intersections with traffic signals reduced crashes 15 percent compared to conventional intersections.

Traveling More Quickly

An intersection with a traffic signal requires several phases to move drivers through the intersection, increasing travel time.

A 2010 study by North Carolina State University conducted for NCDOT found there was an average 20 percent time saving – for all drivers and at any time of the day – using a signalized reduced-conflict intersection compared to a conventional corridor.

Drivers on the minor street who need to turn right and then make a U-turn to travel in their intended direction will require on average 20 more seconds of travel, so side-street drivers receive the benefits of a safer corridor with only a minimal increase in their commute.

Economic Impact of Reduced Conflict Intersections

Economic researchers for the University of North Carolina at Wilmington spent over two years studying more than 400 reduced conflict intersections around the state for a report sponsored by NCDOT and published in 2022.

Below are some key findings of the 2022 economic impact study:

- While some locations showed a positive and significant increase in economic activity, many others had neither a negative nor positive effect, suggesting the traffic safety benefits gained by the design do not generally harm a business.
- Businesses with a large number of customers and that are busiest later in the day are more likely to believe the design makes it easier for customers to reach them.
- Reduced conflict intersections have the potential to support home values.

Residents and homeowners tended to value the improved traffic flow and traffic safety that result from a reduced conflict intersection, even if they experienced longer wait times to enter the main corridor from a side street without a traffic signal.

Frequently Asked Questions

- ✓ Why construct reduced conflict intersections and raised medians?

- ✓ Why not just build a traditional traffic signal with full movements in all directions?

- ✓ Why make me travel out of my way to make a U-turn? Isn't that unsafe, and doesn't that increase travel time?

- ✓ Why not just add more lanes to widen the roadway and intersection?

- ✓ Are we a guinea pig? Where else has NCDOT constructed reduced conflict intersections?

- ✓ How does a reduced conflict intersection make a roadway safer?

- ✓ How will a reduced conflict intersection help me reach my destination more quickly?

- ✓ How do commercial trucks, pickups with trailers and farm vehicles navigate a reduced conflict intersection?

- ✓ How will this design affect emergency vehicles and their response times?

- ✓ How will a raised median and reduced conflict intersection affect my business? Won't my customers have a harder time reaching me?

- ✓ What kind of economic impact studies have been done?

- ✓ How do pedestrians and bicyclists navigate a reduced conflict intersection?

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