

## Common Problems/Concerns

Crashes at rural intersections often involve high speeds, which tend to result in severe injuries or fatalities. Roughly  $\frac{1}{3}$  of annual intersection fatalities in the U.S. occur along rural, two-lane highways.

In many rural environments, drivers can miss a stop sign or traffic signal, leading to running through a stop sign or red light and resulting in an angle crash.

For a driver turning left across oncoming traffic, it can sometimes be difficult to judge the speed of the approaching vehicle, resulting in misjudged gaps, and potentially severe crashes.

It doesn't seem like people would slow down for a roundabout along rural highways. Motorists will just drive right into or over the roundabout because they won't be able to slow down in time.

In the northeastern U.S., circles are being signalized or removed because they do not work.

Why build something "different", when all that is needed is either stop signs or a traffic signal?



## Why Consider a Roundabout

Roundabouts are geometrically designed for drivers to negotiate the intersection at speeds in the range of 15-25 mph, regardless of the posted speed limits on approaches.

Because roundabouts require vehicles to yield and then navigate around a raised, circular island, the possibility of an angle crash is significantly reduced.

With roundabouts, there is no need to make a turn across opposing traffic. Entering vehicles yield to traffic already in the circle, and proceed when there is a safe gap.

High-speed approaches to roundabouts include advance signing, pavement markings and raised channelization. With proper design, drivers adjust their speeds, slow on approach, and navigate the roundabout safely.

The old traffic circles and rotaries that are common in the northeastern U.S. are not modern roundabouts.

Improvements like stop signs and signals, while very familiar, aren't always the safest choice. With intersections representing about one-quarter of annual U.S. traffic fatalities and roughly half of all injury crashes, safer designs are needed that improve mobility while saving lives.



## Real World Results\*

Roundabouts constructed at intersections along high-speed, two-lane rural highways reduced overall crashes by up to 68% and reduced injury crashes by up to 88%.

Roundabouts constructed at intersections along high-speed, two-lane rural highways eliminated 83% of angle-type crashes.

There were 11 fatal crashes in the 5 year "before" period and ZERO fatal crashes in the 5 year "after" period at 19 roundabouts constructed along high-speed, two-lane rural highways in six different states (KS, MD, MN, OR, WI, and WA).

Researchers compared traffic speeds of approaches to roundabouts and stop-controlled intersections. At 100 feet before the yield or stop lines, the speed of traffic at the roundabouts was 2.5 mph lower than at the stop-controlled locations.

Roundabouts are designed for slower speeds, require entering traffic to yield to vehicles already in the circular roadway, and to eliminate the need to weave or change lanes to exit.

Since the late 1990s, an ever growing number of State DOTs and local road agencies are finding that roundabouts work in their jurisdictions. Their potential for saving lives is too significant to ignore.

### \* Sources:

Isebrands, H., S. Hallmark, N. Hawkins. "Effects of Approach Speed at Rural High-Speed Intersections" Transportation Research Record: Journal of the Transportation Research Board, Volume 2402, Transportation Research Board, National Research Council, Washington, DC, 2014

Isebrands, H. and S. Hallmark. "Statistical Analysis and Development of a Crash Prediction Model for Roundabouts on High-Speed Rural Roadways" Transportation Research Record: Journal of the Transportation Research Board, Volume 2389, Transportation Research Board, National Research Council, Washington, DC, 2012