

Why Roundabouts?

One of the Safest Intersection Options

High Capacity / Low Travel Delay

✓ Good for All Modes of Traffic

- Motorists
- Pedestrians
- Cyclists

✓ Geometric Flexibility



- Diameter typically ranges between 90 180 feet
- Designs often include an angled access point to slow entry and maintain speed (typically 15-20 MPH)
- Designs can reduce the number of turn lanes, help prevent drivers from traveling in the wrong direction and provide other benefits as compared with a

traditional intersection.

Aesthetics

• Unique landscaping or other features

Proven Performance in North Carolina

• North Carolina has more than 320 roundabout locations across the state.

Sources: NCDOT-Congestion Management Roundabout Presentation (April 2018), NCHRP Report 672 and https://drive.google.com/open?id=1td2bXCUNCQROX5 jK5f9D5EzZr1Y&usp=sharing



Roundabouts provide a newer and improved version of the old traffic circles. Roundabouts increase safety and capacity.

- The size is much smaller (you can usually see the entire intersection.)
- Entering traffic ALWAYS yields to the circulating roadway.
- Speeds are kept low (15-25 MPH), both by signing and by physical (geometric) design features.
- With lower speeds, traffic needs smaller gaps to enter the circle
- Smoother entering (not merging) increases capacity, reduces stops, which reduces air emissions.
- Roundabouts always have a physical splitter island to direct traffic around the center island.
- Once in the circulating roadway (center) you have no interruptions. You do not have to yield to entering traffic, and there's no conflict with pedestrians, bus stops, or



Sources: NCDOT-Congestion Management Roundabout Presentation (April 2018) and Google Maps.



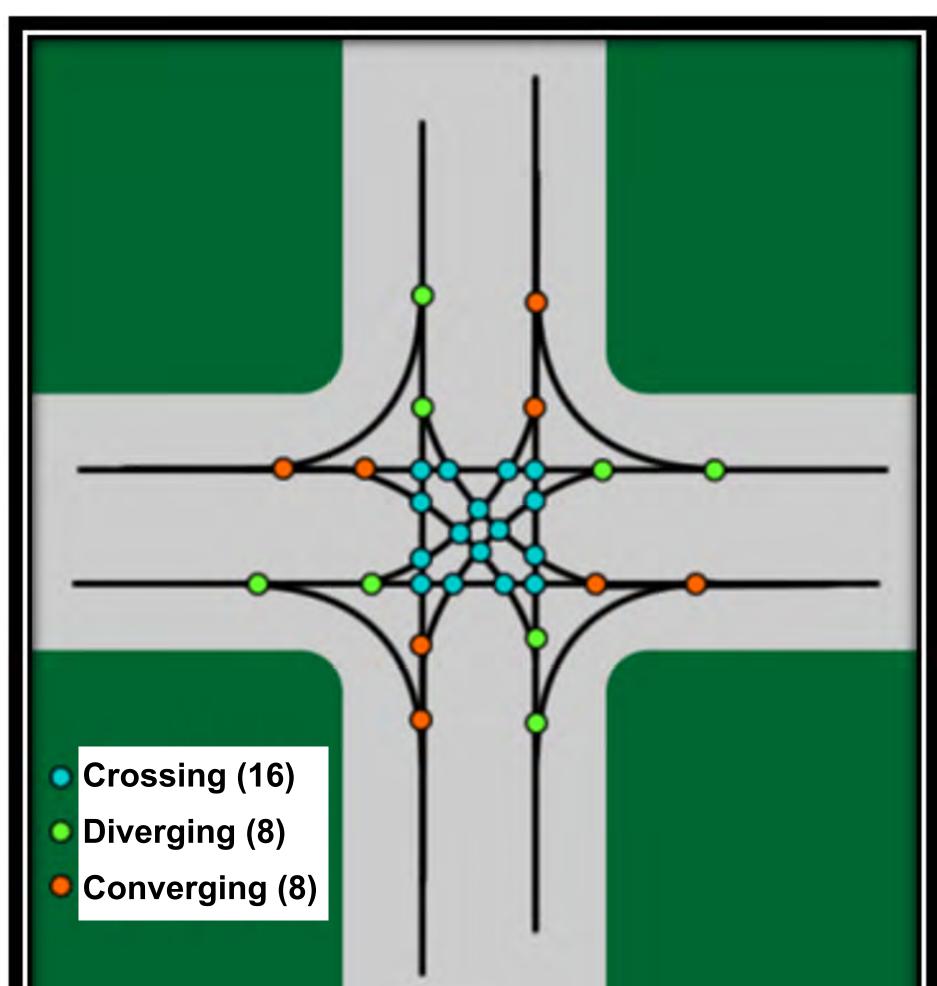
Roundabouts Reduce Crashes

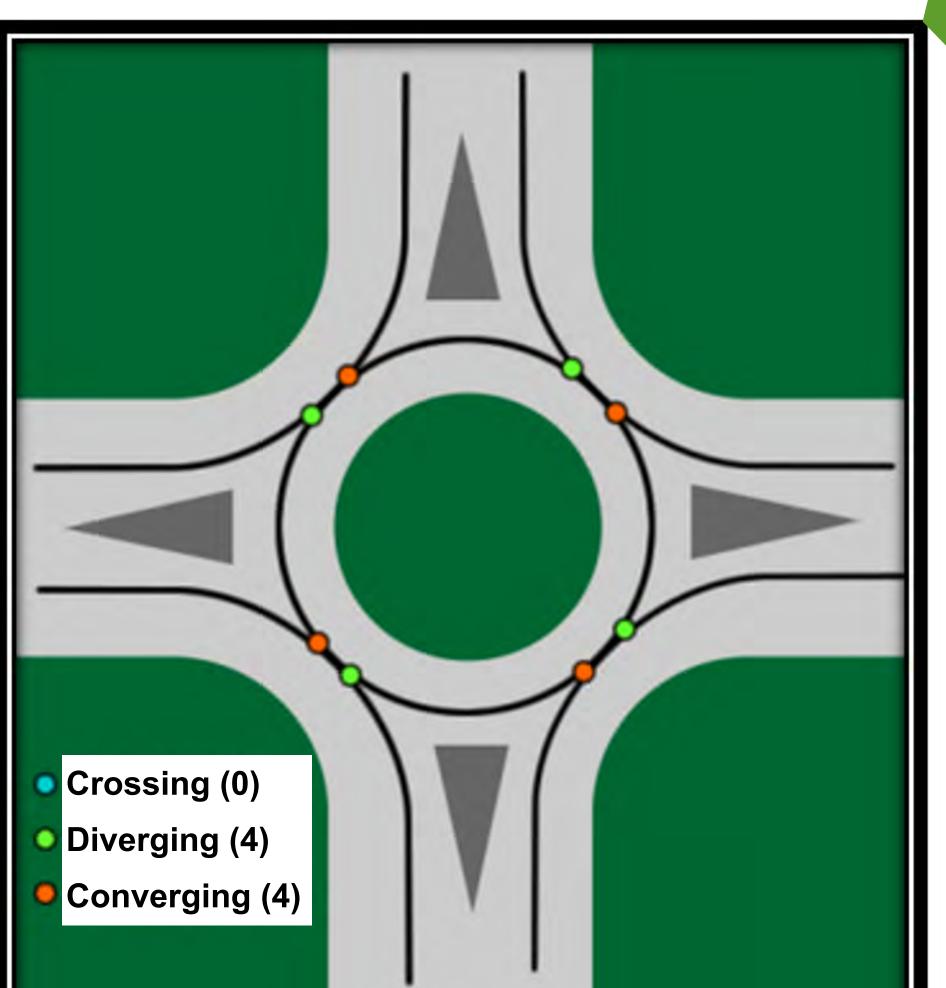
Reduced speed in the intersection

Reduced number of conflict points

Conventional intersection

Roundabout







There are **32 conflict points** at a conventional intersection. There are only **8 conflict points** at a modern roundabout.

A conflict point is the point at which a roadway user crossing, merging with, or diverging from a road or driveway conflicts with another roadway user using the same road or driveway. It is any point where the paths of two through or turning vehicles diverge, merge, or cross.



Crash <u>Reductions</u> Following Installation of Roundabouts

In the United States

- Total Crashes, ↓48%
- Fatal/Injury Crashes in Rural Areas, ↓78%
- Fatal/Injury Crashes in Urban Areas, 160%

In North Carolina

- Total Crashes, ↓46%
- Fatal/Injury Crashes, ↓76%

• Frontal Impact Crashes, 175%

Roundabouts significantly reduce crashes compared to stop-controlled and signalized intersections.

Sources: NCDOT-Congestion Management Roundabout Presentation (April 2018), Insurance Institute For Highway Safety (www.highwaysafety.org), NCHRP Report 572 (onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_572.pdf) and NCDOT Safety Evaluation Group (https://connect.ncdot.gov/resources/safety/ TrafficSafetyResources/Roundabouts.pdf)



How do you drive in that?

- Driving rules are consistent. Traffic entering the roundabout always yields to traffic already in the roundabout.
- With less conflict points and a reduction in crash potential, a roundabout is much simpler to drive through than any other intersection.
 - A driver needs to look to their left when entering the roundabout to select a gap in traffic to access the roundabout. The driver then has a clear, uninterrupted path to their exit. Of course, drivers should always look out for other motorists, bicyclists and pedestrians.
- A roundabout is designed to accommodate large vehicles (including fire trucks) that require greater turning radii as they travel through the circular portion of the roundabout.
- Motorists at roundabouts are expected to observe the same laws and courtesies as the do on other roadway facilities.
 - When an emergency vehicle approaches the roundabout, drivers are expected to pull Thru Traffic Traffic moves Motorists yield over to provide sufficient counterto pedestrians room for the emergency clockwise and bicyclists in vehicle to pass. to exit or crosswalks. continue circling, • If there is not enough room for this to occur, the driver is expected to clear the way U-Turn for the emergency vehicle. Left Turn (This may involve proceeding through the roundabout Vehicles must Clear the way and then pulling over to the yield to traffic to allow inside the side, or yielding priority to emergency roundabout and vehicles to the entering emergency Turn wait for a safe pass. vehicle. Right gap to enter.

Source: NCDOT-Congestion Management Roundabout Presentation (April 2018) and https://www.facebook.com/cityofspringfieldil/photos/ a.1455108681392023.1073741830.1455059011396990/2027570157479203/?type=3&theater