



Arkansas State Highway & Transportation Department

INTERIM MODIFIED CONNECTOR *(FUNCTIONING AS A ROUNDABOUT)*

Roundabouts

As traffic volume increases on local roadways, engineers are frequently turning to roundabouts as an efficient, cost-effective way to improve safety and traffic flow.

Roundabouts substantially decrease severe injury and fatality collisions and allow drivers to get through intersections more quickly. Roundabouts also provide a safer way for pedestrians and bicyclists to navigate traffic.

Safety benefits

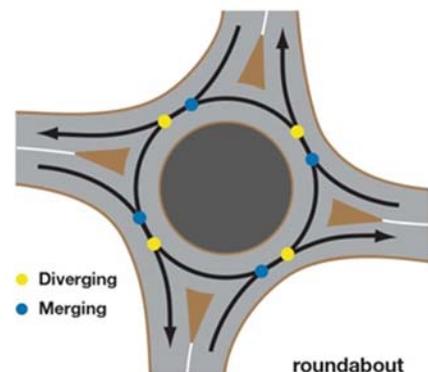
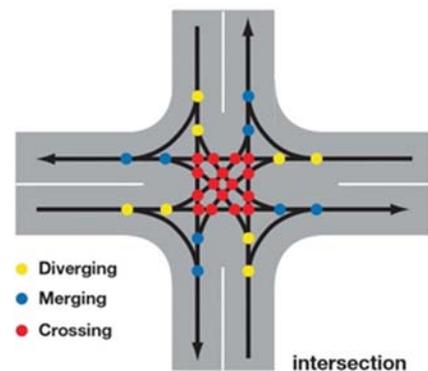
Intersection crashes are a common occurrence across the U.S. The following are non-roundabout intersection statistics for a one-year period in 2004 (compiled by the Federal Highway Administration (FHWA)):

- 2.7 million intersection-related collisions
- 900,000 intersection-related injury collisions
- 9,117 intersection-related fatalities
- \$96 billion in financial losses from intersection-related collisions

Many states, including Arkansas, are installing roundabouts in place of traditional intersections to reduce the likelihood and severity of intersection-related collisions. That's because roundabouts promote a continuous, one-way flow of traffic and have fewer points of conflict.

Studies by the FHWA and Insurance Institute for Highway Safety (IIHS) have shown that roundabouts typically achieve:

- A 37 percent reduction in overall collisions
- A 75 percent reduction in injury collisions
- A 90 percent reduction in fatality collisions
- A 40 percent reduction in pedestrian collisions
- 75 percent fewer conflict points than a traditional intersection



Intersection vs. roundabout conflict points

Navigating a roundabout

Many drivers, cyclists and pedestrians have never seen or used a roundabout and the thought of navigating one may be intimidating. But roundabouts are designed to facilitate travel for all of these groups.

Drivers choose either the left or right lane and travel around the center of the roundabout to their exit. The right lane is for right turns and straight ahead travel. The left lane is for straight ahead travel, left turns and U-turns.

Signs near the roundabout show drivers how to navigate the intersection



The lane choice sign shows drivers which lanes are used for right turns, straight through travel, left turns and U-turns.



The yield sign tells drivers to yield to traffic already in the roundabout.



Drivers should note that large trucks may take up both lanes in a roundabout.



Drivers should look for pedestrians or bicyclists in marked crossings before entering or exiting a roundabout.

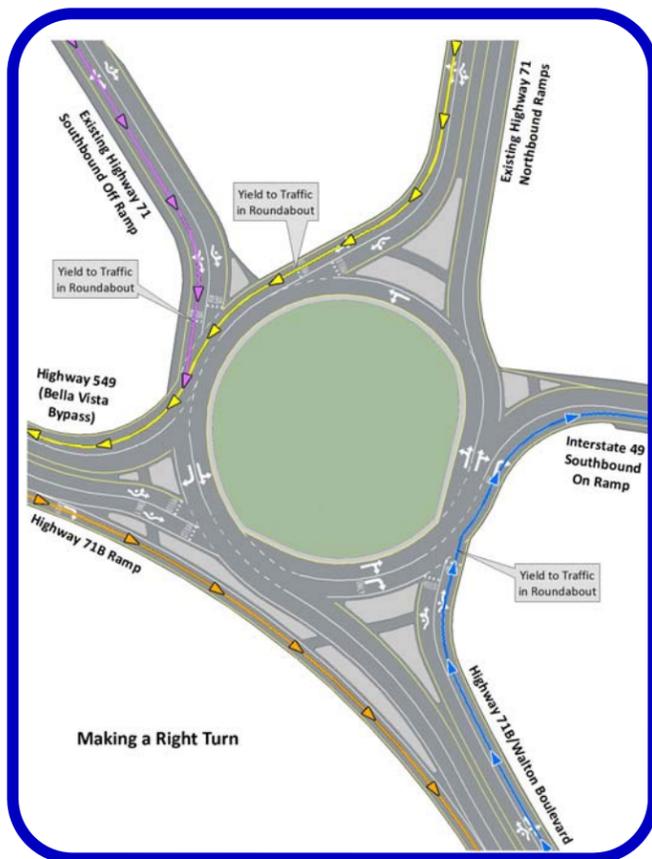


Roundabouts are designed for speeds between 15 and 25 mph.

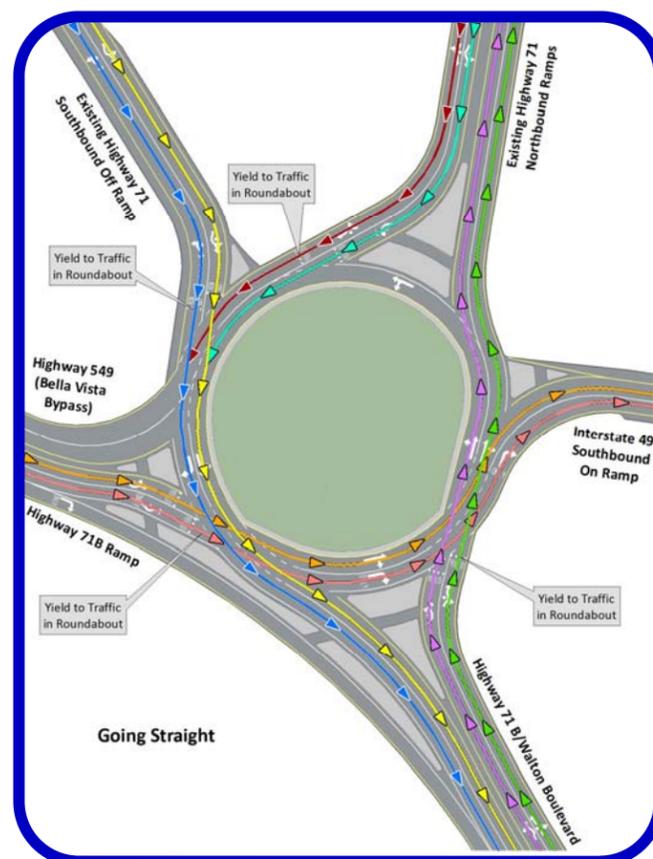


Some key points to note about driving a roundabout:

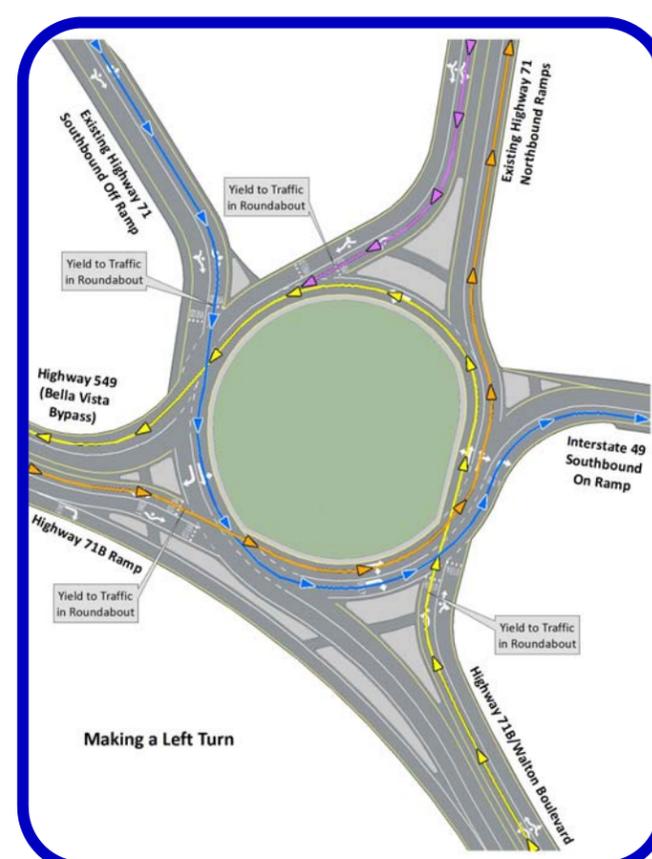
- Do not stop within the roundabout.
- Do not change lanes within the roundabout.
- Do not drive next to large trucks in a roundabout.
- If an emergency vehicle approaches, pull to the right before entering the roundabout. If you are in the roundabout, continue to your exit and pull to the right.



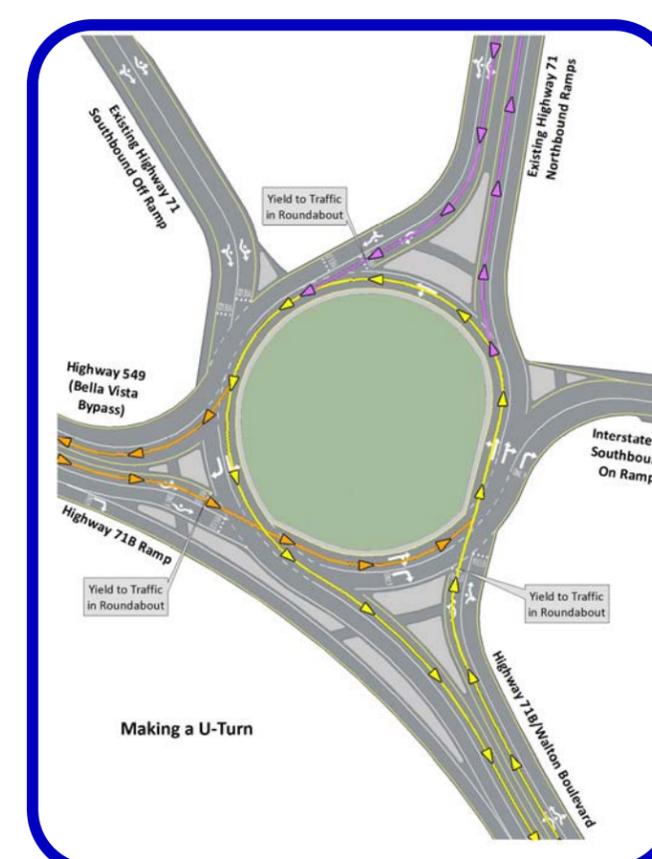
Use the right lane to make a right turn.



Use either lane to go straight.



Use the left lane to make a left turn.



Use the left lane to make a U-turn.

Traffic flow benefits

Contrary to a popular myth, roundabouts do not cause traffic delays. In fact, they can allow drivers to reach their destinations more quickly. At traditional intersections, drivers often have to wait for a green light before proceeding. At roundabouts, drivers will have to slow down and yield to traffic, but they are not required to stop, as they are at traditional intersections. Roundabouts promote a continuous, circular flow of traffic, which allow more vehicles to travel through an intersection at a time. The FHWA found that roundabouts increased traffic capacity by 30 percent to 50 percent compared to traditional intersections. The IHS studied intersections in three states, including Washington, where roundabouts replaced traditional signals and found:

- An 89 percent average reduction in vehicle delays.
- A 56 percent average reduction in vehicle stops.



Interim Modified Connector (Roundabout) will be used at Highway 71B, Highway 71 and I-49 Interchange in Bentonville, AR.

Environmental benefits

Roundabouts are better for the environment than traditional intersections. Drivers are not required to stop when approaching a roundabout, preventing excessive idling. This helps reduce fuel consumption and vehicle emissions. A study by the IHS showed that roundabouts can reduce fuel consumption by approximately 30 percent. Another IHS study measured vehicle emissions and found:

- At least a 29 percent reduction in carbon monoxide emissions.
- At least a 37 percent reduction in carbon dioxide emissions.

Roundabouts can also be constructed with trees and shrubs at the center. This provides another porous surface for water to filter into the ground. Roundabouts also require less maintenance than traditional traffic signals, and can result in savings of up to \$5,000 per year and a reduction in energy use and costs.

More information

More information about the benefits of roundabouts can be found on these Web sites:

- <http://www.wsdot.wa.gov/safety/roundabouts/>
- Roundabouts - What they are and what they aren't <https://www.youtube.com/watch?v=vsCoI7IERGE>
- Roundabouts - How do I drive a roundabout? <https://www.youtube.com/watch?v=MywmtskFiil>
- <http://safety.fhwa.dot.gov/intersection/innovative/roundabouts/>

- Roundabouts - Pedestrians and cyclists <http://www.youtube.com/watch?v=Y05qZ5B1Wg>
- Roundabouts - Safety benefits https://www.youtube.com/watch?v=LnT1HXo7p_4
- Roundabouts - What does this mean for me? <https://www.youtube.com/watch?v=NO1bi6inF60>

