

K.

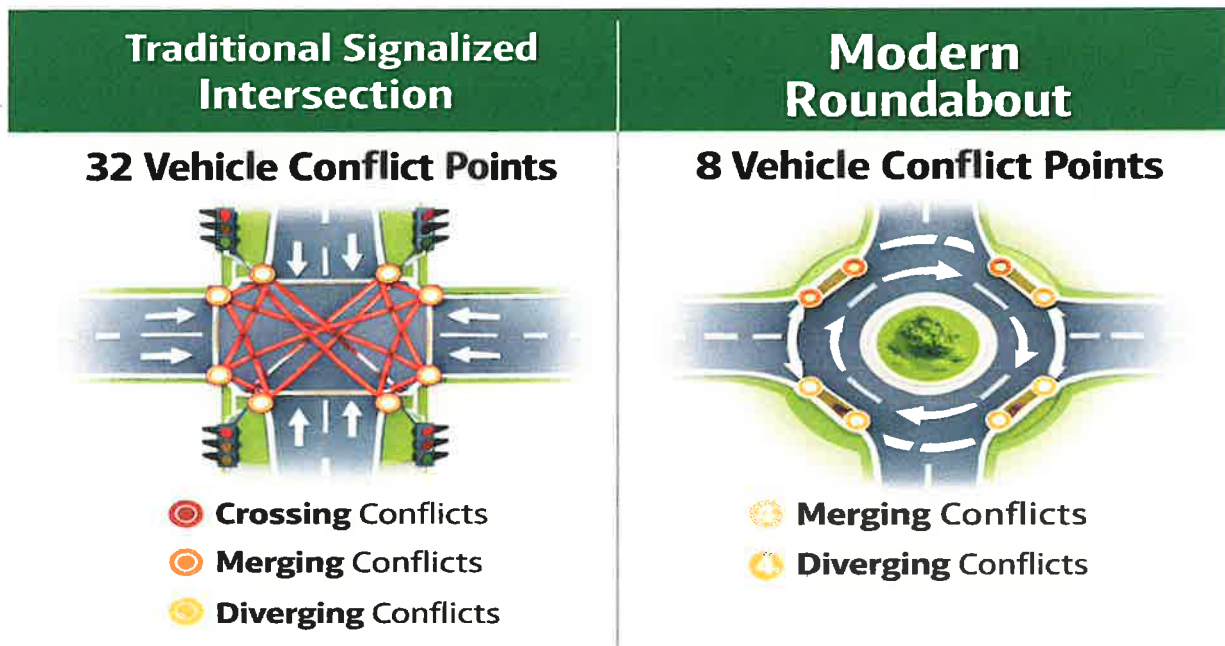
Roundabouts Improve Safety, Traffic Flow, and Reduce Pollution

Key Facts for County Transportation Planning

A modern roundabout is one of the most effective intersection designs available to improve roadway safety, reduce congestion, and lower environmental impact. Transportation agencies across the United States and Florida have adopted roundabouts because they consistently produce better safety outcomes and smoother traffic flow.

Key Benefit	Proven Result
Safety	90% reduction in fatal crashes (Federal Highway Administration)
Safety	75% reduction in injury crashes
Crash Reduction	37% reduction in total collisions
Traffic Flow	30–50% improvement in intersection capacity
Environment	20–30% reduction in fuel consumption and vehicle emissions

A traditional signalized intersection has **32 vehicle conflict points** where crashes can occur. A single-lane roundabout has only **8 conflict points**, and eliminates high-speed crossing collisions entirely. This fundamental design difference is why roundabouts dramatically reduce severe crashes.



Roundabout Safety Benefits



- ✓ Reduced Conflict Points
- ✓ Slower Speeds
- ✓ Continuous Traffic Flow

[Home](#) / [agencyresources](#) / [roundabouts](#)

Benefits of Roundabouts

Roundabouts are increasingly becoming more popular due to the benefits that they provide. These benefits include dramatic reductions in serious injury and fatality crashes as well as reductions in delay for road users. Benefits of modern roundabouts have been shown to occur in both urban and rural areas under a wide range of traffic conditions.

The Federal Highway Administration designated roundabouts as one of nine proven safety counter measures. Roundabouts provide a number of benefits as described below:

Safety

- Fewer crashes, 90% fewer fatalities and 75% fewer injuries
- Fewer severe crashes
- 10 to 40% fewer pedestrian/bicycle crashes
- Roundabouts are safer for beginner and elderly drivers
- Can be used in multiple road intersections

Time Savings

- 30 to 50% increase in traffic capacity for intersection, less delay waiting at stops and signals

Environmentally Friendly

- Reduces pollution (from cars not waiting at traffic signals), reduces noise, reduces fuel consumption
- Roundabout islands can be landscaped with native plants and trees
- Roundabouts generally take less land than traditional intersections as they don't require turning lanes

Saves Money

- Without traffic signals, no cost for traffic signals and yearly maintenance
- Intersection still operates in power outages, no need for police to direct traffic
- Roundabouts can help improve sales at nearby businesses across the country as more people can walk or easily drive to locations compared to traditional intersections
- Can act as a marker to a business or downtown district



Search



Roundabouts

Learn about roundabouts, including how to travel through them as a pedestrian, cyclist or driver.

What is a roundabout?

A modern roundabout is a circular intersection where drivers travel counterclockwise around a center island. There are not traffic signals or stop signs in a modern roundabout. Drivers entering the roundabout yield to traffic already in the roundabout, then enter the circulating roadway and exit at their desired street, so they function differently from older circular intersection types.

Studies by the Federal Highway Administration (FHWA) have found that roundabouts can increase traffic capacity by 30 to 50 percent compared to traditional intersections.

Types of circular intersections

There are more circular intersections than just roundabouts, and many differences between each type.

Neighborhood traffic calming circles are much smaller than modern roundabouts and often replace stop signs at four way intersections. They are typically used in residential neighborhoods to slow traffic speeds and reduce collisions but generally are not designed to accommodate larger vehicles.

Modern roundabouts



Modern roundabouts are designed to accommodate vehicles of all sizes, including emergency vehicles, buses, and truck and trailer combinations. In a modern roundabout, drivers enter the intersection by navigating a gentle curve. Drivers yield at entry to traffic already in the roundabout, then proceed into the intersection and exit at their desired street.

A main feature of the modern roundabout is a raised central island. The circular shape is designed to control the direction of traffic and reduce speeds to 15 to 20 mph. It also reduces the likelihood of t-bone (right angle) or head-on collisions.

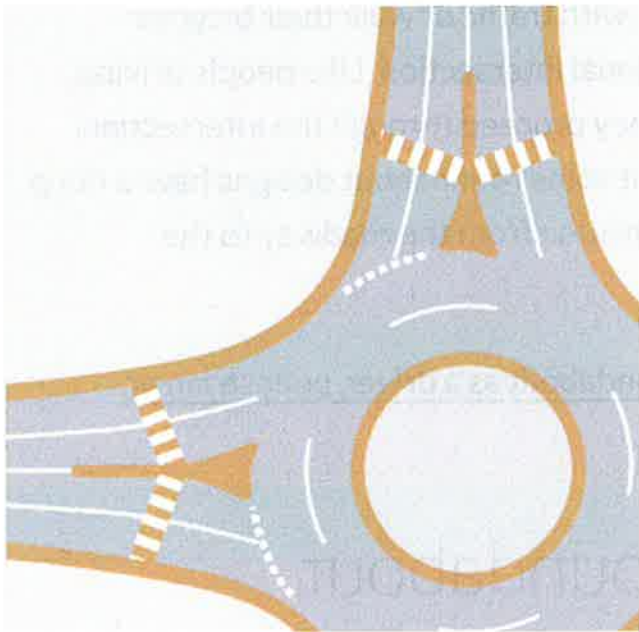
- [How to drive a roundabout - YouTube](#) 

You can also download our Rules of the Roundabout brochure in English and Spanish:

- [Rules of the Roundabout \(PDF 408KB\)](#)
- [Español - Reglas de la Rotonda \(PDF 379KB\)](#)

Pedestrians and bicycles in roundabouts

Modern roundabouts are designed to be safer than traditional intersections for people walking or using mobility assistance devices. Vehicles are moving at a slower rate of speed in roundabouts - typically 15 to 20 miles per hour (MPH).



Crosswalks (shown above in brown and white) are set further back from vehicle traffic, allowing more time for drivers to react to people in the roadway before merging into or exiting the roundabout. Triangular islands between lanes of vehicle traffic provide pedestrians moving through the roundabout a safe place to wait if they choose to cross only one direction of traffic at a time.

People using the crosswalk should look for approaching vehicle traffic, then move through the crosswalk to the triangular island. Before continuing, they should look for traffic entering or exiting the roundabout. When it is safe, they can continue through the crosswalk.



Slow down as you approach the roundabout, and watch for pedestrians in the crosswalk. Continue towards the roundabout and look to your left as you near the yield sign and dashed yield line at the entrance to the circulating roadway. Yield to traffic already in the circulating roadway. If there is no traffic in the roundabout, you may enter without yielding.

Once you see a gap in traffic, enter the circle and proceed to your exit. Make sure to stay in your lane as you navigate the roundabout, and look for pedestrians before you exit.

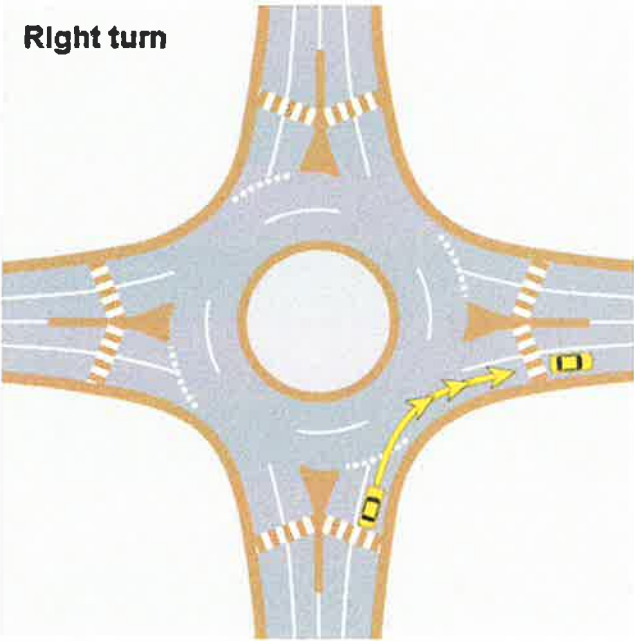
[Watch a video about driving through a roundabout.](#) 

Driving multi-lane roundabouts

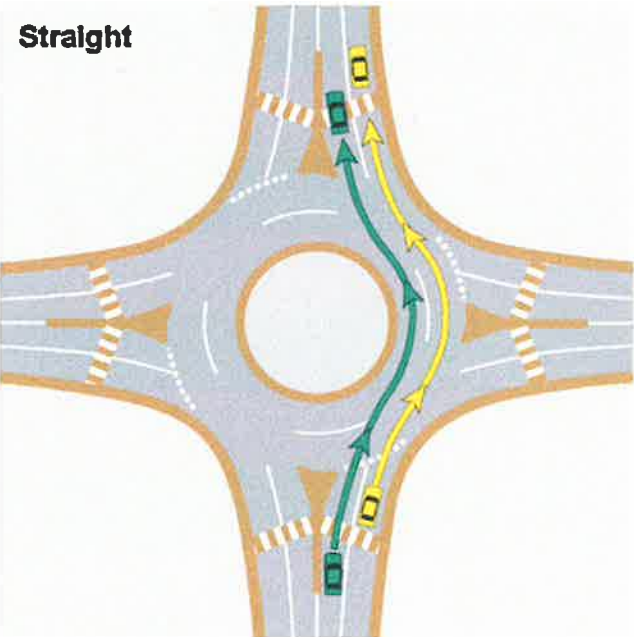


In a multi-lane roundabout, you will see two signs as you approach the intersection: the same yellow "roundabout ahead" warning sign and speed signs used for single-lane roundabouts, and a black and white "lane choice" sign. This second sign is to help you choose the

Right turn



Straight



Left turn

Trucks, oversize vehicles, and vehicles with trailers in roundabouts

Roundabouts are designed to accommodate vehicles of all sizes, including emergency vehicles, buses, farm equipment, and semi-trucks with trailers.



Depending on the size and type of the roadway, the vehicle and/or its trailer may use specially designed truck aprons - raised sections of pavement around the central island that acts as a temporary lane for large vehicles. The back wheels of the large vehicle can ride up onto the apron due to its rolled curb, allowing the rear of the vehicle or trailer to off-track and successfully complete the turn. The truck apron is raised, and often a different color or material than the roadway, to discourage use by smaller vehicles and emphasize that it is not a normal travel lane.

In multi-lane roundabouts, large vehicles may straddle both lanes to make their turn. Because the rear of the vehicle or trailer is likely to off-track into the other lane while making a turn, other drivers should never drive next to large vehicles in a roundabout.

Benefits of roundabouts

Roundabouts have many important benefits over other intersection control types.

flowing through the intersection, drivers do not have the incentive to speed up to try and "beat the light" as they might at an intersection with a traffic signal.

- **One-way travel.** Roads entering a roundabout are gently curved to direct drivers into the intersection and help them travel counterclockwise around the roundabout. The curved roads and one-way travel around the roundabout eliminate the possibility for "T-bone" and head-on collisions.

Reduce delay and improve traffic flow

Contrary to many peoples' perceptions, roundabouts actually move traffic through an intersection more quickly, and with less congestion on approaching roads. Roundabouts promote a continuous flow of traffic. Unlike intersections with traffic signals, drivers don't have to wait for a green light at a roundabout to get through the intersection. Traffic is not required to stop – only yield – so the intersection can handle more traffic in the same amount of time.

Studies by Kansas State University measured traffic flow at intersections before and after conversion to roundabouts. In each case, installing a roundabout led to a 20 percent reduction in delays. Additional studies by the IIHS of intersections in three states, including Washington, found that roundabouts contributed to an 89 percent reduction in delays and 56 percent reduction in vehicle stops.

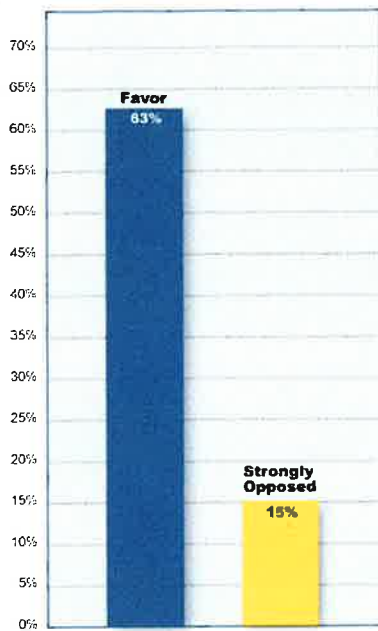
Lower cost

The cost difference between building a roundabout and building a traffic signal is pretty comparable. Where long-term costs are considered, roundabouts eliminate hardware, maintenance, and electrical costs associated with traffic signals, which can cost between \$5,000 and \$10,000 per year.

Less space

A roundabout may need more property within the actual intersection, but often take up less space on the streets approaching the roundabout. Because roundabouts can handle greater volumes of traffic more efficiently than traffic signals, where drivers may need to line up to wait for a green light, roundabouts usually require fewer lanes approaching the intersection.

Appropriate locations



The reasons most cited for concern were fear of the unknown. People initially prefer traffic signals and stop signs until they realize roundabouts allow them through the intersection safely without having to stop. Other concerns about safety and possibly being confused about where to go also dissipate with use.

Contact information

Scott Davis

Assistant State Traffic Design Engineer

scott.davis2@wsdot.wa.gov

[\(360\) 705-7342](tel:(360)705-7342)

Sections in Traffic safety methods

- Collector-
distributor