

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 IIHS 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.

Environmental benefits

Roundabouts are better for the environment than traditional intersections. Because drivers aren’t required to stop at a roundabout, vehicles spend less time idling. This helps reduce fuel consumption and vehicle emissions and is better for the environment. A study by the IIHS showed that roundabouts can reduce fuel consumption by approximately 30 percent. Another IIHS 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:

- www.wsdot.wa.gov/safety/roundabouts
 - Roundabouts - What they are and what they aren’t <http://www.youtube.com/watch?v=vsCoI7IERGE>
 - Roundabouts - How do I drive a roundabout? <http://www.youtube.com/watch?v=MywmtskFiil>
 - <http://safety.fhwa.dot.gov/intersection/roundabouts/fhwa08006/>
- Roundabouts - Pedestrians and cyclists <http://www.youtube.com/watch?v=Y05qGz5B1Wg>
 - Roundabouts - Safety benefits http://www.youtube.com/watch?v=LnT1HXo7p_4
 - Roundabouts - What does this mean for me?

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Roundabout installed at the intersection of Cordala Parkway and Westerly Road in Bellingham, WA



INTERIM MODIFIED CONNECTOR (FUNCTIONING AS A ROUNDABOUT)

Roundabouts

As traffic volumes increase on local roadways, engineers are more 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

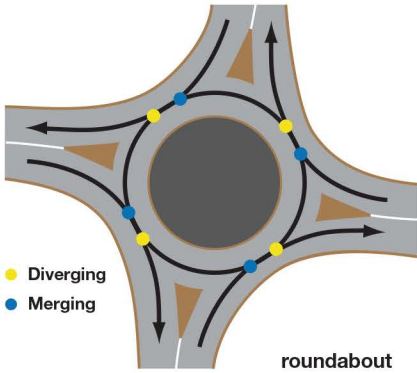
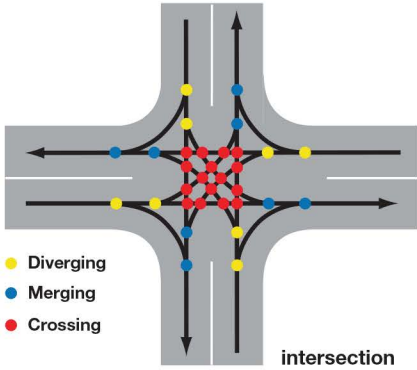
Intersection crashes are a common occurrence across the U.S. Note the following non-roundabout intersection statistics for a one-year period compiled in 2004 by the Federal Highway Administration (FHWA):

- 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 than a traditional intersection.

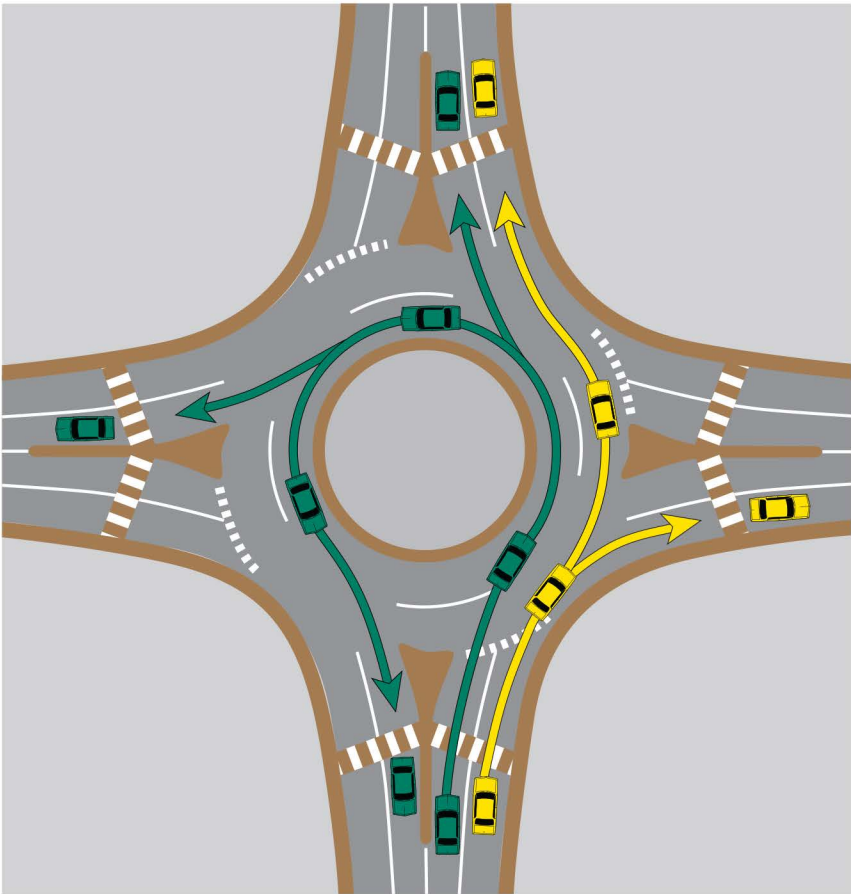
Studies by the FHWA and Insurance Institute for Highway Safety (IIHS) have shown that roundabouts typically achieve:

- 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 these groups.

Pedestrians can cross roundabouts using marked crosswalks (shown in brown and white). Triangular center islands between traffic lanes (shown in brown) allow pedestrians a safe place to wait if they cannot cross all traffic lanes at once.

Cyclists can travel through roundabouts with vehicles (shown with yellow and green arrows), or they can walk their bicycles through pedestrian crosswalks.

Drivers (yellow and green arrows) 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.

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

Roundabouts are designed for speeds between 15 and 25 mph.

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

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

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 in the roundabout, continue to your exit and pull to the right.
- Use your turn signal before exiting the roundabout.

A diagram of a roundabout showing a vehicle entering from the top and using the right lane to make a right turn, exiting to the right. A yellow arrow indicates the path.

Use the right lane to make a right turn.

A diagram of a roundabout showing a vehicle entering from the top and using either the left or right lane to go straight, exiting to the bottom. A yellow arrow indicates the path.

Use either lane to go straight.

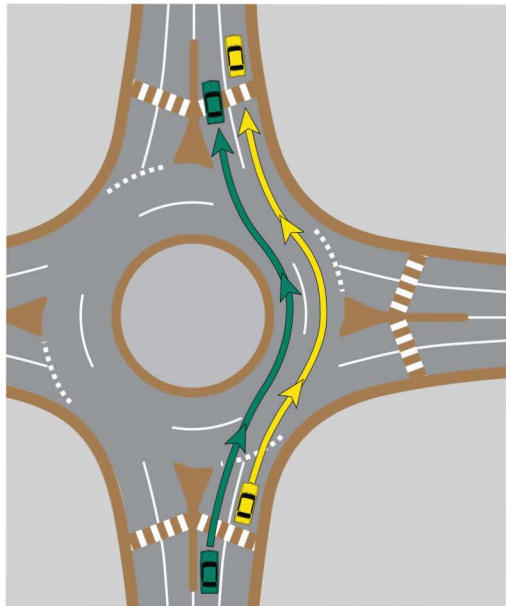
A diagram of a roundabout showing a vehicle entering from the top and using the left lane to make a left turn, exiting to the left. A green arrow indicates the path.

Use the left lane to make a left turn.

A diagram of a roundabout showing a vehicle entering from the top and using the left lane to make a U-turn, exiting to the top. A green arrow indicates the path.

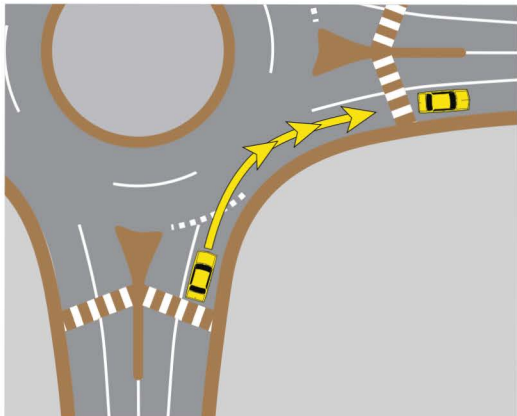
Use the left lane to make a U-turn.

How do I go straight?



In a two-lane roundabout, you can use either the left or right lane to go straight. As you approach the roundabout, yield to traffic already in the circle. If no cars are in the roundabout, you may enter without yielding. Enter the roundabout and curve gently to the right, then continue ahead in your lane, staying to the right of the roadway median as you exit the roundabout.

How do I make a right turn?



As you approach the roundabout, make sure you are in the right lane. Yield to traffic already in the circle. Enter the roundabout and make a sweeping right turn one-quarter of the way around the roundabout, staying to the right of the roadway median as you exit the roundabout.

How safe is a roundabout?

Studies have shown that roundabouts are safer than traditional signalized intersections. Speeds are slower through a roundabout because cars enter the circular intersection at a desirable angle and all travel the same direction. The chance of T-bone and head-on collisions is virtually eliminated. Studies by the IIHS have shown a 40 percent reduction in all crashes, a 70 percent reduction in injury crashes and a projected 90 percent reduction in fatality crashes. And because speeds in a roundabout are 25 mph or slower, the braking distance is significantly reduced in the event of a collision. At 50 mph, braking distance is approximately 475 feet. At 25 mph, braking distance is reduced to 125 feet.

How expensive is a roundabout?

Costs for modern roundabouts can vary, and can be dependent on the costs of property acquisition or sensitive environmental areas. Where long-term costs are considered, roundabouts are cheaper to maintain and operate than traffic signals. Maintenance and operation of a traffic signal can cost \$5,000 per year or more. Roundabouts have virtually no cost for maintenance or operation.

I have a business near a roundabout - will traffic have a harder time reaching me?

Not necessarily. During construction, access may be more difficult. But once the roundabout is complete, drivers and pedestrians should be able to easily access businesses. In fact, roundabouts can be good for business. A study of businesses along a highly traveled road in Golden, Colorado where roundabouts were installed found that the businesses near the roundabouts saw an increase in sales tax revenues despite an areawide economic slowdown. Fewer collisions and delays, as well as an aesthetic and pedestrian-friendly roadway, contributed to a healthy business environment.



Arkansas State Highway & Transportation Department

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INTERIM MODIFIED CONNECTOR

Frequently Asked Questions



Driving the
Roundabout
Way

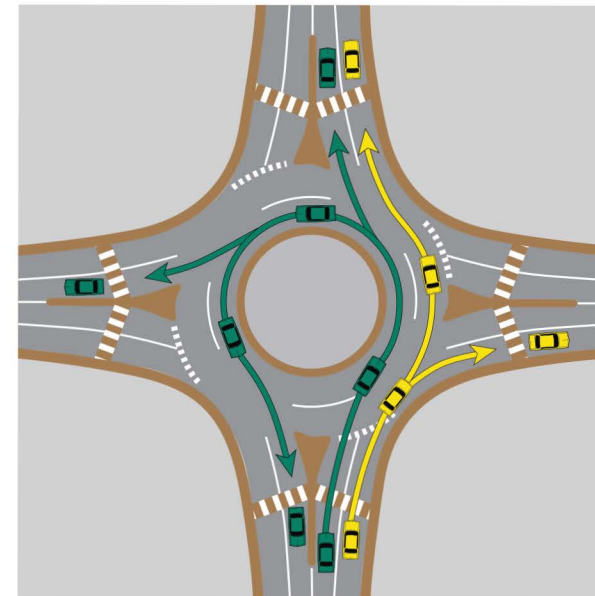


Arkansas State Highway & Transportation Department

Roundabouts are becoming more common across the U.S. as a way to improve traffic flow and reduce serious accidents. But for drivers who have never used a roundabout, it can seem confusing at first. With no stop signs or signals, who has the right of way? Is it safe for pedestrians? What's the speed limit in a roundabout? In this brochure, drivers, pedestrians and cyclists can find answers to many common roundabout questions.

What is a roundabout?

A modern roundabout is a circular intersection where drivers travel counterclockwise around a center island. Drivers yield to traffic in the circle, then enter the roundabout and exit at their desired street. There are no traffic lights or stop signs in a modern roundabout.



Find out more information on roundabouts

<http://safety.fhwa.dot.gov/intersection/roundabouts/f-hwsa08006/>

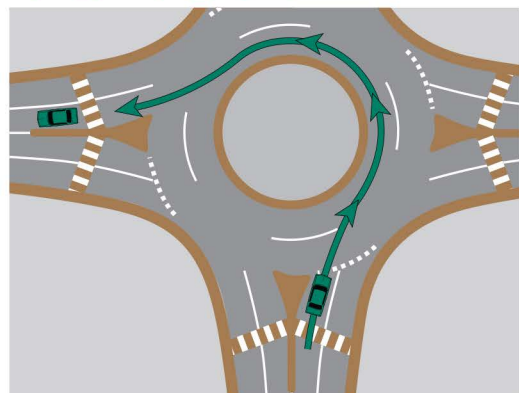
Video - Driving a roundabout

<https://www.youtube.com/watch?v=MywmtskFiil>

Roundabouts - How do I drive a roundabout?

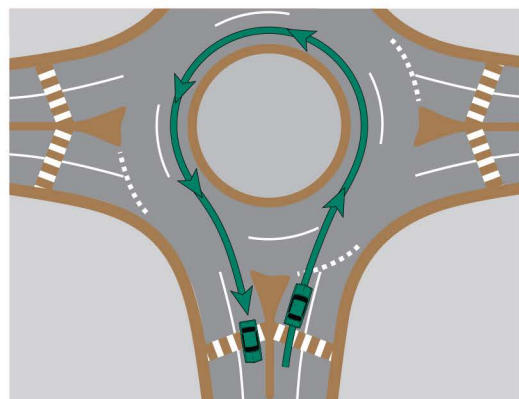
<http://www.youtube.com/watch?v=MywmtskFiil>

How do I make a left turn?



As you near the roundabout, make sure you are in the left lane. Yield to traffic already in the circle. If no cars are in the roundabout, you may enter without yielding. Enter the roundabout, staying in the left lane, and make a sweeping left turn three-quarters of the way around the center of the roundabout, staying to the right of the roadway median as you exit. Check to make sure there is no traffic in the outside lane before you exit.

How do I make a U turn?



As you near the roundabout, make sure you are in the left lane. Yield to traffic already in the circle. If no cars are in the roundabout, you may enter without yielding. Enter the roundabout, staying in the left lane, and make a sweeping left turn completely around the center of the roundabout. Exit the roundabout, staying to the right of the roadway median. Check to make sure there is no traffic in the outside lane before you exit.

Can I change lanes in a roundabout?

No. Once you enter a roundabout, you must stay in your lane. Make sure you choose the correct lane before you enter the roundabout.

Do I have to yield to entering vehicles if I'm already in a roundabout?

No. If you are in a roundabout, vehicles entering the roundabout must yield to you. However, you must yield to pedestrians or bicycles in crosswalks when entering or exiting the roundabout.

What if an emergency vehicle approaches?

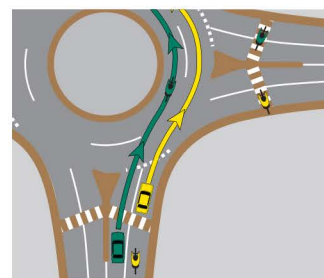
In a roundabout, you treat emergency vehicles the same way you would in a traditional intersection. Do not stop if you are in the roundabout. Continue to your exit. Once you exit the roundabout, pull to the right and allow the emergency vehicle to pass. If you see an emergency vehicle as you are approaching a roundabout, pull to the right to allow it to pass, then continue into the roundabout.

What is the speed through a roundabout?

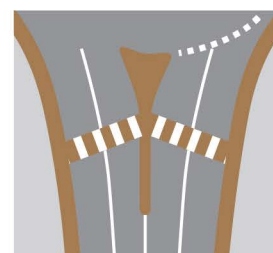
Roundabouts are designed for speeds 25 mph or slower. You should drive between 15 and 25 mph through the roundabout.

How do I use a roundabout if I'm on a bicycle?

If you feel comfortable doing so, you can ride through the roundabout with traffic. You must observe the same rules as vehicles. You may also walk your bicycle through the pedestrian crossings.



How do I use a roundabout if I'm on foot?

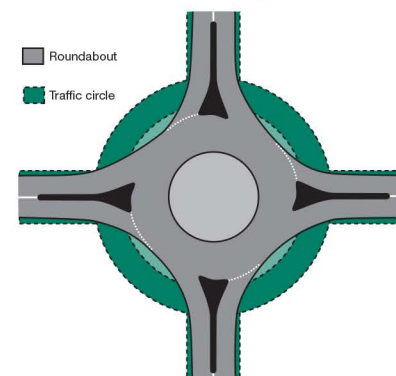


Crosswalks are located on each street near the entrance to the roundabout. Pedestrian islands are also located between lanes. This means that you can cross one direction of traffic and have a safe place to wait in the median before you cross another direction of traffic.

Why a roundabout? Why not a traditional intersection?

We don't plan to build roundabouts at every intersection, only those where they will be most beneficial. Roundabouts are appropriate for intersections with significant traffic delays or frequent collisions. Roundabouts can reduce delays and serious collisions. Studies by the Insurance Institute for Highway Safety (IIHS) have shown a 75 percent reduction in crashes at intersections where a roundabout replaced a traffic signal. The likelihood of high-speed crashes is reduced because drivers must slow to 15 or 20 mph before entering a roundabout. Roundabouts also encourage better traffic flow because drivers only have to yield, not stop, before entering a roundabout, which can reduce backups. And because traffic isn't required to stop at a roundabout, vehicle emissions and fuel consumption are lower. Studies have shown that roundabouts can reduce fuel consumption by up to 30 percent. They are also cheaper to maintain than traffic signals.

Isn't a roundabout just like a traffic circle?



No. Traffic circles, often seen in Europe or on the East Coast, are larger than modern roundabouts and often use signals or stop signs. Drivers enter a traffic circle in a straight line. Modern roundabouts are smaller than traffic circles. Drivers enter

roundabouts by navigating a curve. These two changes force drivers to travel more slowly through a roundabout. Traffic in a roundabout also has the right-of-way. Drivers entering a roundabout must yield to traffic already circling. In many traffic circles, entering traffic has the right-of-way, which can lead to backups and delays.

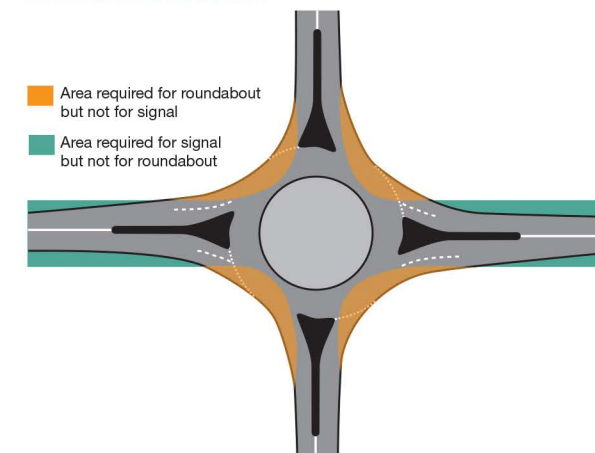
What happens if there's a collision in the roundabout?

Treat it like you would a collision in a traditional intersection. If possible, drivers involved in the collision should drive out of the roundabout to the shoulder of the road. Drivers within the roundabout should, if possible, drive around the collision and exit. If a collision is completely blocking the roundabout, call 911 and use an alternate route, if possible.

Will this roundabout make my commute slower?

No. It may speed up your commute. If there are no vehicles in a roundabout, you are not required to yield before entering. At a traditional intersection, you would have to wait for a green light before proceeding. Roundabouts can also handle more cars per hour than a signalized intersection, which means you will be able to get through an intersection more quickly. An IIHS study showed an 89 percent average reduction in delays and a 56 percent average reduction in stops at intersections where roundabouts replaced traffic signals or stop signs.

Do roundabouts take up more room than intersections?



Roundabouts often use less space than intersections. Because roundabouts can process higher volumes of traffic more efficiently than traffic signals, they typically require fewer traffic lanes approaching the intersection. The center of the roundabout can take up more space than a traditional intersection, but the approaches to the roundabout typically take up less room.

Are roundabouts better for the environment?

Roundabouts promote a continuous flow of traffic, which means vehicles spend less time idling, or stopping and starting. This reduces fuel consumption and vehicle emissions and is better for the environment. Studies by the IIHS have shown that roundabouts can reduce fuel consumption by 30 percent compared to traditional traffic signals. Roundabouts can also be constructed with trees and shrubs at the center, which provides another porous surface for water to filter into the ground.