

AROUND THE

ROUNDAABOUT



How to Navigate the Roundabout

Everyone wants to live in a safe area for their families.

Citizens often request a traffic signal or to fix the road near their homes. But where changing the existing roadway is costly and difficult and a traffic signal would worsen the problem, roundabouts can be the solution.

The Michigan Department of Transportation (MDOT) is designing and installing more roundabouts to increase safety, reduce crashes, and relieve congestion. Statistics have shown that there are many benefits of the roundabout including:

- **Decrease of serious crashes**
- **Decrease of crashes involving pedestrians**
- **Fewer traffic delays**
- **Lower fuel consumption**
- **Reduced air pollution**
- **Increased vehicle capacity**
- **Enhanced intersection aesthetics**

WHAT IS A ROUNDAABOUT?

A roundabout is an intersection in which traffic moves around a circular island in the center. While similar to a traffic circle, there are differences between the two.

Yield at Entry

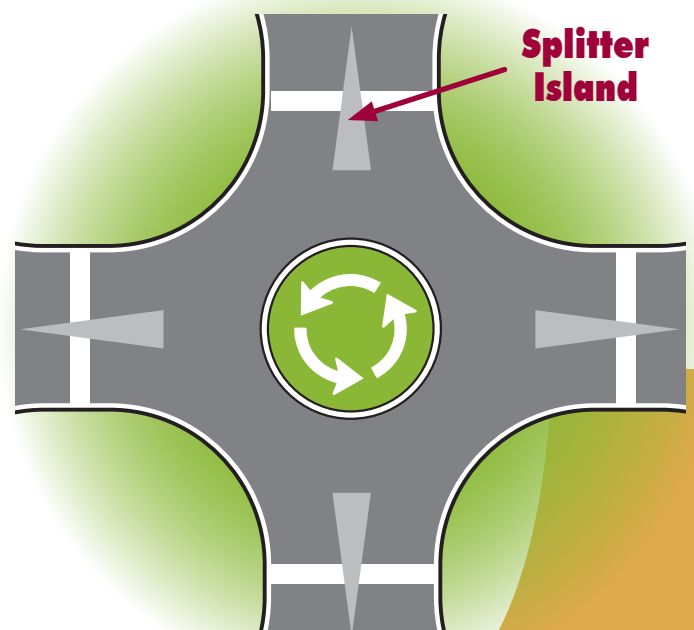
This prevents traffic from backing up and allows free flow movement, since yielding is required, as opposed to coming to a full stop.

Deflection

The splitter islands at each approach to a roundabout deflect entering traffic to slow (not stop) traffic. This causes vehicles to yield to view the rotating traffic and guides traffic in the proper counterclockwise direction.

Geometric design

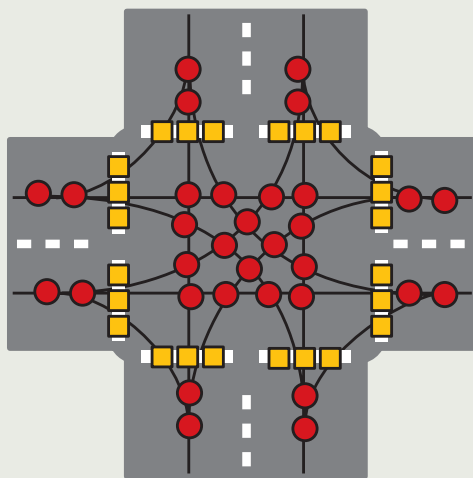
The circle itself is designed so that a vehicle can travel 15-25 miles an hour around the central island, which cannot be driven across, unlike a traffic circle's center island.



THE ADVANTAGES OF ROUNDABOUTS

Vehicle Safety

The reduction in fatal and serious crashes is attributed to slower speeds and reduced number of conflict points (see Figure below). A conflict point is a spot where a vehicle potentially could strike another vehicle or pedestrian. At the location depicted below, installing a signal will increase crashes by 25 percent. A roundabout would decrease crashes by 77 percent.



● **32 Vehicle to vehicle conflicts**

■ **24 Vehicle to pedestrian conflicts**

Pedestrian Safety

Modern roundabouts are safer than signalized intersections for pedestrians because of slower traffic speed at roundabouts and the division of the pedestrian crossing into two stages. In each stage, the pedestrian has to look only one way to cross one direction of traffic. Pedestrian “refuge” areas are provided within the splitter islands. A pedestrian crossing at a traffic signal must contend with vehicles turning right or left on green, vehicles turning right on red, and vehicles running the red light, which often occur at high speeds and can result in pedestrian injuries or fatalities.

Maintenance Savings

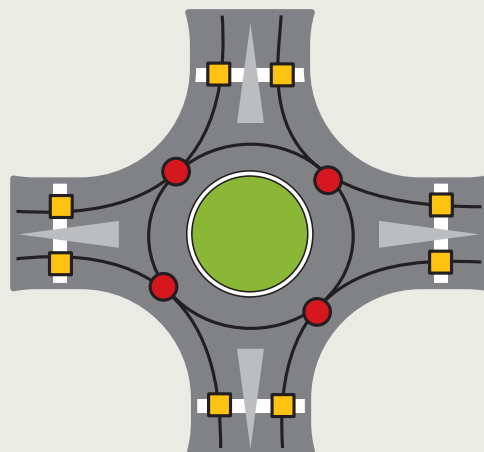
Roundabouts eliminate maintenance costs associated with traffic signals, which amount to approximately \$4,000 per year for an average signalized intersection. In addition, electricity costs are reduced with a savings of approximately \$1,000 per year at this intersection.

Reduced Delay

By yielding at the entry rather than stopping and waiting for a green light, delay is significantly reduced. A roundabout reduces delay by continuously flowing traffic through the intersection.

Higher Intersection Capacity

Intersections with a high volume of left turns are better handled by a roundabout than a multi-phased traffic signal due to long lines of vehicles potentially spilling into the through-lane, backing up traffic.



● **8 Vehicle to vehicle conflicts**

■ **8 Vehicle to pedestrian conflicts**

HOW TO DRIVE IN A ROUNDABOUT

1. These are the first signs you'll see when you approach a roundabout.



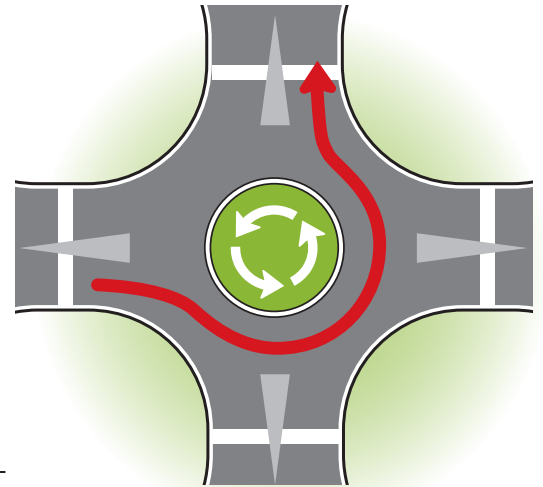
2. There will be a YIELD sign and dashed yield line. Slow down, watch for pedestrians and bicyclists, and be prepared to stop if there are vehicles ahead of you.



3. The roundabout will have ONE WAY and chevron signs mounted in the center island. They help guide traffic and indicate that you must drive to the right of the center island in a counterclockwise fashion.



4. Before you enter, look to your left and watch for vehicles already in the roundabout. You must yield to any circulating traffic. Once there is room to enter the roundabout, safely fill in the gap. Do not stop while traveling in the roundabout.
5. Upon passing the street prior to your exit, turn on your right turn signal and watch for pedestrians and bicyclists as you exit.
6. Conventional left turns are completed by traveling three-quarters (3/4) around the island as shown below.



QUESTIONS AND ANSWERS ABOUT ROUNDABOUTS

Q: Why do roundabouts need to be so big?

A: The size of a roundabout is determined by the size of the largest commercial vehicle, capacity needs, and other factors. To handle typical interstate trucks with wheelbases of 50 feet or more, a single-lane roundabout needs to be at least 130 feet in diameter and is typically 120 to 150 feet in diameter.

Q: Are roundabouts safe near schools?

A: Several roundabouts have been installed near schools in the United States, and none has reported any significant problems as it relates to school areas. Some children are driven to school as opposed to taking the bus. School personnel, and sometimes State Police, have been called to manage traffic during arrival and departure times. Roundabouts allow school drop-off and pick-up to occur in a safe and efficient manner.

Q: What should I do when I'm in a roundabout when an emergency vehicle arrives?

A: Exit the roundabout at the nearest exit, pull over to the right and stop. Do not stop in the roundabout as you might block the path of a large emergency vehicle.

Q: How about cycling through a roundabout?

A: A bicyclist can either circulate the roundabout or use the sidewalk around it. When circulating as a vehicle, be sure to ride near the middle of the lane so that drivers can see you and cannot pass you. Remember that cars will be traveling at speeds ranging from 15 to 25 mph, close to a bicyclist's speed.

Q: What about snow removal at roundabouts?

A: There is some initial adjustment in procedures for snowplow crews, but roundabouts generally present no major problems for snow removal. In Wisconsin, for example, one truck will start on the truck apron and plow around the roundabout to the outside, while another truck will plow each entry and exit, pushing the snow to the outside. Roundabouts make it easier to turn snowplows as well.

To view a generic interactive demonstration, go to www.michigan.gov/roundabout

Information taken from RoundaboutsUSA.com, FHWA, and the New York, Kansas, Virginia, Maryland, Oregon and Florida Department of Transportation Web sites.