

City of Avondale Estates Intersection Improvement/Roundabout and Road Diet Feasibility Study

ROUNDAABOUT INTERSECTIONS

How do roundabouts work?

A roundabout is a form of circular intersection in which traffic moves around a central island in a counterclockwise direction (or moving to the right as you enter). Traffic entering the circle must yield to traffic already in the circle. The entering roadway is diverted to slow down traffic, and it may enter the circle without stopping if there is not already traffic in the circle to which it will yield.

Traffic only moves in one direction. Motorists making a right turn travel one quarter of the circle, and motorists making a left turn travel three quarters of the circle.

Are there places where roundabouts don't work?

Because roundabouts require entering traffic to yield to traffic in the circle, there are conditions in traffic flow and balance of traffic between two crossing streets where roundabouts work well and process traffic more efficiently than a traffic signal. By the same token, there are other conditions where they do not—traffic may be imbalanced and not easily allow entering traffic from one or more roadways to enter the circle safely and efficiently.

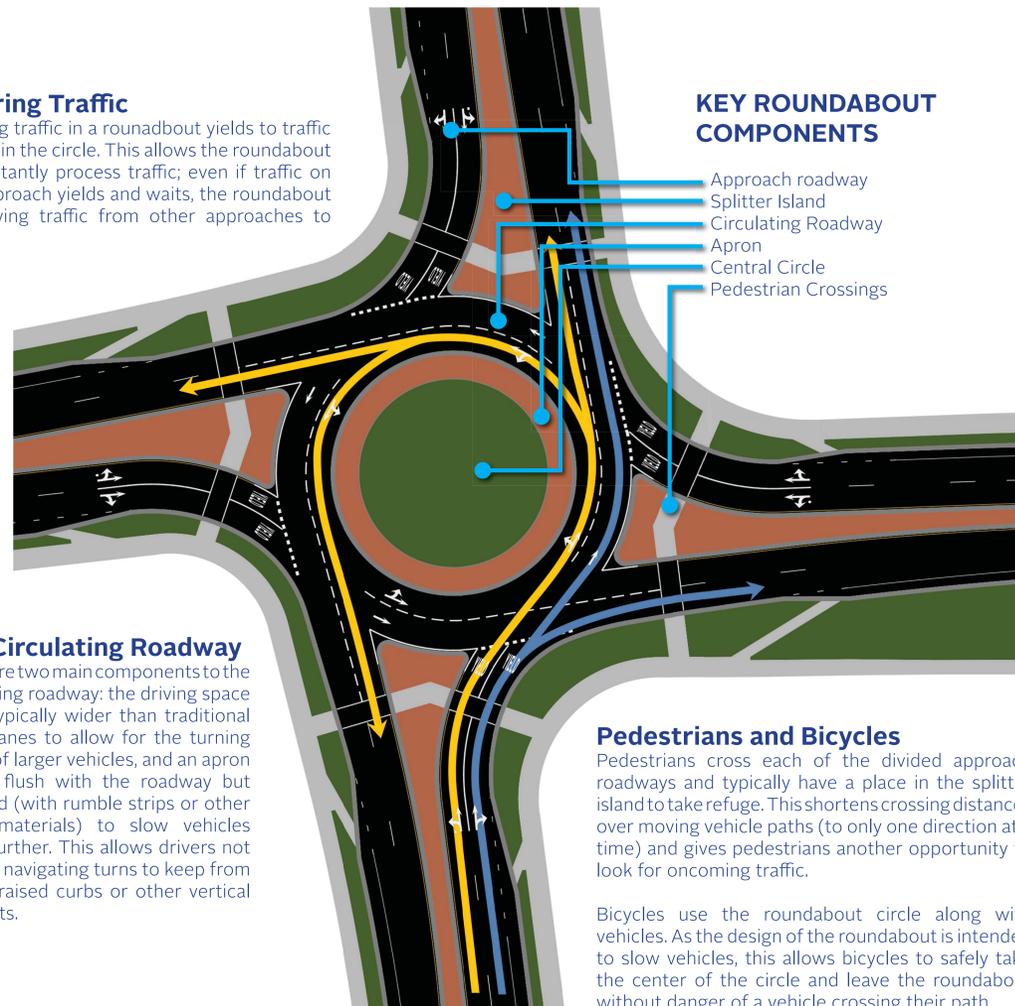
What is the typical size of a roundabout?

This depends on several factors, including the amount of traffic the roundabout is designed to handle, the space into which it must fit, and the speeds of surrounding roadways.

Typical one-lane roundabouts (with one lane in the circulating roadway) are anywhere from 100 to 125 feet across. Two-lane roundabouts are often larger than this, generally up to 150 feet.

Entering Traffic

Entering traffic in a roundabout yields to traffic already in the circle. This allows the roundabout to constantly process traffic; even if traffic on one approach yields and waits, the roundabout is allowing traffic from other approaches to enter.



KEY ROUNDAABOUT COMPONENTS

- Approach roadway
- Splitter Island
- Circulating Roadway
- Apron
- Central Circle
- Pedestrian Crossings

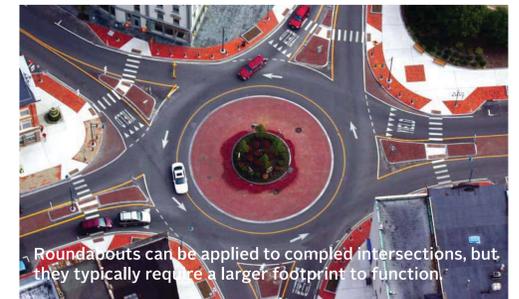
The Circulating Roadway

There are two main components to the circulating roadway: the driving space itself, typically wider than traditional traffic lanes to allow for the turning radius of larger vehicles, and an apron that is flush with the roadway but textured (with rumble strips or other paver materials) to slow vehicles down further. This allows drivers not used to navigating turns to keep from hitting raised curbs or other vertical elements.

Pedestrians and Bicycles

Pedestrians cross each of the divided approach roadways and typically have a place in the splitter island to take refuge. This shortens crossing distances over moving vehicle paths (to only one direction at a time) and gives pedestrians another opportunity to look for oncoming traffic.

Bicycles use the roundabout circle along with vehicles. As the design of the roundabout is intended to slow vehicles, this allows bicycles to safely take the center of the circle and leave the roundabout without danger of a vehicle crossing their path.



Roundabouts can be applied to complex intersections, but they typically require a larger footprint to function.

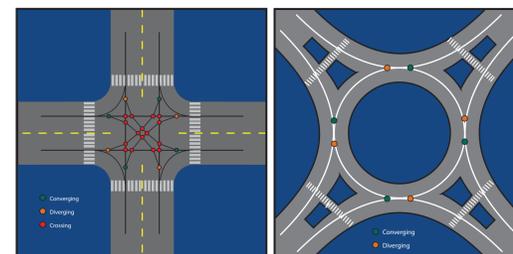


Pedestrian crossings are made safer by moving through the splitter island, where additional signage raises motorists' attention.



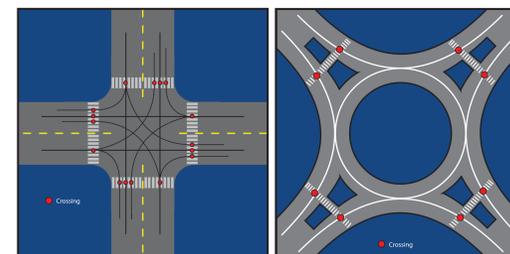
Bicycles move through the circulating roadway of roundabouts along with vehicles.

ROUNDAABOUTS AND SAFETY



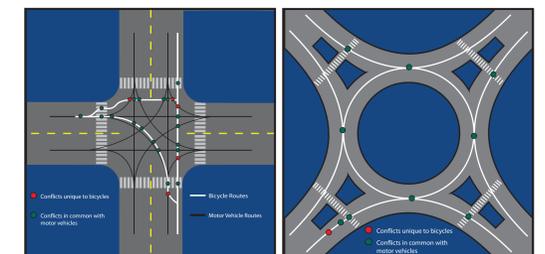
For Motorists

A typical intersection has up to 24 points of potential conflict, many of them related to crossing vehicle paths. Roundabouts reduce this number to eight points, related to the weaving of traffic entering and exiting the roundabout with the traffic already on the circle.



For Pedestrians

For pedestrians, typical intersections have up to 16 points of potential conflict where vehicles may cross pedestrian paths. These conflicts become more complex on intersections of multi-lane roadways. Roundabouts reduce this number of conflicts to eight points, and pedestrians have a refuge between each of them.



For Bicycles

Because cyclists typically ride on streets to the right of moving vehicles, they face a unique set of potential conflict points in a typical intersection. Roundabouts reduce the number of points of potential conflict from 24 to eight, with all related to bicycles merging with traffic entering and exiting the circle (which roundabout speeds can help to mitigate).