Q: Are roundabouts a safer option for intersections?

The most common justification for a roundabout is safety. This is because roundabouts only have 8 potential conflict points vs. 32 at a traditional intersection. Studies by the Federal Highway Administration (FHWA) show that roundabouts achieve a 44% reduction in crashes and reduce serious injury and deadly crashes by nearly 90% at two-way stop intersections. When roundabouts replace a traffic signal, FHWA found a 48% reduction in crashes and nearly 80% drop in serious injury and deadly crashes.

Q: Are roundabouts safer than traffic signals?

Research in the U.S. and abroad has shown that roundabouts experience lower crash rates than both traffic signal and stop sign-controlled intersections. The Insurance Institute for Highway Safety conducted a study of 24 intersections located throughout the U.S. where roundabouts replaced traffic signals or stop signs. This study found fatality and incapacitating injury crashes were reduced by 90%, injury crashes were reduced by 76%, pedestrian related crashes were reduced by 30 to 40%, and overall crashes were reduced by 39%. The impacts on bicycle-related crashes could not be determined, due to the small number of bicycle crashes recorded both before and after the roundabout installations.

At roundabouts, the geometric design features ensure that vehicle speeds are low; therefore, when collisions do occur the severity is typically nothing more than a fender-bender type crash. Additionally, the number of potential conflict points at roundabouts is significantly fewer. Most people assume traffic signal-controlled intersections are safe, and in most instances traffic signals can improve safety at an intersection. But there are inherent dangers at signalized intersections. For example, during the year 2003, approximately 9,200 people lost their lives in crashes at intersections. Of those fatalities, 934 were directly attributable to red light running at intersections controlled by traffic signals. Aggressive driving is recognized as a growing problem on the nation's roadways, and red-light running is one of the most common results of this behavior.

In general, single lane roundabouts are shown to be far safer than traffic signals. As additional entry lanes are added to roundabouts, the crash rates begin to increase, with three-lane roundabouts having a similar crash rate to traffic signals. Although it should be noted that the crashes at multilane roundabouts remain less severe than at traffic signal-controlled intersections.

Q: Are roundabouts more efficient than traffic signals?

Efficiency can be measured by the volume of traffic processed (capacity) and the length of delay incurred by all users. Roundabouts are typically more efficient than traffic signals. At traffic signals there is "lost time" where vehicles on all approaches are stopped simultaneously between phases when the signal changes from green on one approach and turns green on another. At roundabouts, vehicles can enter the circulating roadway whenever there is a suitable gap, most often without coming to a full stop. Additionally, vehicles can enter from multiple approaches simultaneously. These factors mean that roundabouts can typically process more vehicles in a given time with less delay than traffic signals. During off-peak traffic periods roundabouts excel, as there is

no need to be stopped waiting for a green light. The reduced delays at roundabouts translate into less fuel being wasted and fewer polluting emissions being produced.

Q: Are roundabouts appropriate for intersections near schools?

Yes. Numerous roundabouts have now been built at or near schools across the U.S. with great success. The low speed and safety aspects for both drivers and pedestrians at the intersection, along with the traffic calming effects seen several hundred feet from the intersection, make roundabouts an ideal choice near schools.

Q: Why was the Yoctangee Parkway and Mill Street intersection chosen for a roundabout?

The City Administration presented City Council with three proposed roundabout locations for consideration: Yoctangee Parkway and Mill Street, Walnut Street and Yoctangee Parkway, and Water Street and Paint Street. City Council ultimately approved one location, choosing Yoctangee Parkway and Mill Street and declining the other two. That decision was influenced in part by downtown stakeholders who raised concerns about the other locations, while Chillicothe High School and the YMCA actively supported the Yoctangee and Mill location. The community's voice, including institutions that serve students and families, played a direct role in the selection of this site.

Q: Was a traffic study conducted to support the roundabout at this location? Do we have specific data for this intersection?

Yes, a traffic study was completed for this intersection, along with several others around the park perimeter. Crash data for the Yoctangee/Mill intersection shows 12 accidents between 2022 and 2024, including 8 property-damage-only crashes and 4 involving injuries. Given the proximity to the park and a nearby school, a roundabout is considered a safer alternative. It would help reduce vehicle speeds and improve overall traffic flow through the intersection.

Q: Why was money spent on a roundabout instead of other community priorities?

The funding for this project was awarded to the City by the State of Ohio through a competitive grant application. It was not drawn from the City's general operating budget. The City applied for and received $34.8 million in state funding based on a proposal that included three roundabout locations. City Council ultimately approved one of those three locations, and the State allowed the remaining funds to be reallocated to other park improvement projects.

It is important to understand that a portion of the award was specifically for transportation safety infrastructure. The City could not simply redirect those dollars to other priorities of its choosing. The grant terms govern how the money is used. The choice before the City was not between a roundabout and some other community

investment. The choice was between using state-awarded transportation funds for their intended purpose or forgoing them entirely.

Q: How was the public involved in this decision?

This project originated from the City's Appalachian Community Grant Program application; a state and federally funded program focused on improving Yoctangee park and adjacent streets. The three proposed roundabout locations were presented to City Council in a public meeting, where community members including downtown business owners, local schools, and neighborhood stakeholders had the opportunity to weigh in. City Council's approval of the Yoctangee and Mill location followed that public process.

Q: Why is construction taking place during the school year rather than over summer break?

The City understands this is not ideal timing, and we share the preference to minimize disruption during the school year. However, the State of Ohio awarded funding for this project with a required completion deadline of September 30, 2026. Construction must begin in the spring to meet that deadline. The City's goal is to have the roundabout substantially complete before the start of the school year in August, and that remains our primary target. We will continue to communicate updates as construction progresses.

Q: Can roundabouts be constructed in low volume urban situations?

Yes. One of the benefits of roundabouts is their traffic calming effects for several hundred feet in either direction. Additionally, this traffic calming effect is not dependent on the interaction with other vehicles but is due to the design elements that limit speed. Therefore, speed reductions are seen 24 hours a day, 7 days a week, regardless of traffic volumes.

Q: How is snow cleared from a roundabout?

Typically, a snowplow truck will start on the innermost section of the circulating roadway, often on the truck apron, and keep circulating in a spiral outward with each revolution until the whole circle is cleared. The plow will then clear snow from the approaches and exits.

Q: How are large trucks and fire equipment accommodated at roundabouts?

Roundabouts are designed to accommodate all the turning movements of the largest vehicle expected to traverse the intersection. In most cases, this is a tractor trailer, either 55 or 67 feet in length. To accommodate the sweep of the trailer wheels as it makes its way through the roundabout, a truck apron is constructed around the inside of the circulating roadway. The truck apron has an approximately 3 or 4 inch curb where it meets the circulating roadway to deter smaller vehicles from cutting across it. The apron is also constructed of a different material or colored differently than the circulating roadway to make clear that it is not intended for use by smaller vehicles. The circulating

roadway is typically limited to 18 to 20 feet in width, which is sufficient to accommodate a typical school bus without having to use the truck apron.

Q: How are pedestrians accommodated at roundabouts?

Pedestrians cross only one direction of traffic at a time rather than navigating a full intersection all at once. Crossing distances are relatively short, and vehicle speeds are lower than at traditional intersections. The location of crosswalks at roundabouts is set back from the main travel zone, which gives motorists more space and time to see and yield to pedestrians. At a conventional intersection, a pedestrian must watch for traffic coming from multiple directions simultaneously and rely on drivers to obey signals. At a roundabout, a pedestrian only needs to watch for traffic coming from one direction at a time, making the crossing simpler and more predictable.

Q: How are bicyclists accommodated at roundabouts?

Bicyclists choosing to enter the roundabout on the roadway should obey the rules of the road as a vehicle and follow the flow of traffic. Bicyclists using the roadway should ride near the middle of the lane to remain visible to motorists. Another option is for bicyclists to dismount and walk their bike on the adjacent sidewalks or use a shared path when provided.

Q: How do I react if I am in a roundabout and an emergency vehicle approaches?

If you are already in the roundabout, continue driving to the next available exit, drive out of the roundabout, and then pull over to the right side of the road and stop. This allows the emergency vehicle to safely pass.

Q: How do semis, farm equipment, and other large vehicles navigate roundabouts?

The design of the intersection accommodates oversized loads and other large vehicles while still providing adequate visual and physical indicators to guide and slow passenger vehicles. One way this is accomplished is with truck aprons — an area between the central island and the driving lane that is mountable by larger vehicles but not used by passenger vehicles.

Sources

- Roundabouts | Federal Highway Administration (FHWA)
- Roundabouts | Insurance Institute for Highway Safety (IIHS)
- Roundabouts | Ohio Department of Transportation (ODOT)