ROUNDABOUT FAQs:

Q: What is a modern roundabout?

*A **modern roundabout** is a circular intersection where motorists travel in a counterclockwise direction around a central island. Motorists and cyclists enter the roundabout by yielding to traffic circulating in the roundabout, then exit at their desired street.*

Q: Traffic circles do not work, why are we building them here?

Roundabouts are often confused with other circular intersections that are commonly referred to as "rotaries" or "traffic circles". Modern roundabouts are much different than the traffic circles that were introduced in the United States in and around the mid 1900's. Traffic circles and rotaries operate with uncertain priority rules for entering and circulating traffic, and they are usually larger and operate at higher speeds than modern roundabouts. At times, traffic is merging but frequently entering motorists don't give-way to circulating traffic because of high entering speeds.

For more information see: https://safety.fhwa.dot.gov/intersection/innovative/roundabouts/

Q: Why are roundabouts used at intersections?

Roundabouts are chosen at certain intersections due to their safety benefits and ability to accommodate traffic flow. Roundabouts are designed for vehicles to enter and travel through the roundabout at a slow speed with all vehicles traveling in the same direction. The slow speed and one direction of travel help reduce the potential for serious crashes with fewer conflict points. Roundabouts also reduce traffic congestion and can be economical to operate with less maintenance and energy costs compared to signalized intersections.

Q: Are roundabouts safe?

Roundabouts have been found to be the safest at-grade intersection control for all users. Studies by the Insurance Institute for Highway Safety have shown when an intersection is converted from two-way stop control or traffic signals to a roundabout that there has been a 37% reduction in motor vehicle collisions of all types, a 75% reduction in injury collisions, and close to a 90% reduction in fatal and incapacitating collisions. Numerous international studies have shown similar results. Due to the slower speeds associated with roundabouts, there is a lower risk of injury or death in the event of a collision at a roundabout.

Roundabouts eliminate many of the risks pedestrians face at signalized intersections, including the risk for pedestrian-driver conflicts due to permissive left turns, right-turn-on-red, and channelized (high speed) right turn lanes. The pedestrian crossing distance at roundabouts is shorter than at a signalized intersection, and pedestrians only have to look in one direction of travel at a time when using the crosswalk.

Studies overseas conclude that bicyclists are generally safer at roundabouts as well, although not necessarily to the same extent as for motorists and pedestrians. As more and more roundabouts are constructed across the U.S. researchers and designers are seeing trends to increase the safety aspects for bicyclists. Giving a choice to bicyclists between using the shared-use path within the parkway via a bike ramp (novice cyclists) or claiming the travel lane prior to entering the roundabout (advanced and commuter bicyclists) is promoted by the U.S. Department of Transportation.

For more information see:
http://www.pedbikesafe.org/BIKESAFE/countermeasures_detail.cfm?CM_NUM=17

Q: Why not install traffic signals instead of roundabouts?

Roundabouts improve safety for motorists and pedestrians, reduce delay, improve air quality due to less vehicular emissions, reduce noise due to less deceleration and acceleration, and result in less fuel consumption compared to signalized intersections.

Q: How do roundabouts affect adjacent property values?

Several studies have shown that commercial areas prosper from the construction of roundabouts. Golden, Colorado; Loveland, Colorado; and Carmel, Indiana are great examples of the benefits of roundabout implementation to spur activity and progress along vital commercial corridors. Due to the benefits provided by roundabouts, including the potential aesthetic appeal of the central island area, roundabouts tend to ease access and provide greater character to a community as compared to signalized intersections.

Q: How long will construction of each roundabout take once construction begins?

The construction timeline for each intersection is dependent on the complexity of the roundabout and the local space available for shifting traffic lanes during construction. An intersection being constructed while still servicing a full traffic demand will take longer than an intersection that is partially- or fully-closed to traffic during construction. Phasing construction of a roundabout can also cost the project more due to the additional traffic control devices needed and the additional construction mobilization.

Q: How do roundabouts affect bicyclists?

Bicyclists can ride in the street with traffic when traveling through single-lane and multilane roundabouts the same as at other intersections. For those bicyclists who feel comfortable navigating through a roundabout, they are encouraged to occupy the travel lane on the approach of the roundabout and navigate the roundabout as a vehicle would, this includes yielding to pedestrians in the crosswalk and cars that are circulating within the roundabout at the entry point.

Whenever taking to the roadway take the time to…Be Seen, Be Aware, and Be Smart.

Q: Are pedestrians considered in the traffic modeling that has been completed?

In certain cases pedestrian volumes will be factored into the traffic model to provide anticipated results for how the roundabout may function under multi-modal use. Especially in areas that are prone to high pedestrian traffic, such as an event center.

Q: How will the roundabouts be landscaped?

Grading takes place within the center of the roundabout to provide a visual obstruction across the roundabout on purpose. A bermed area within the interior landscape island blocks oncoming headlight glare at night and also helps to focus drivers on the areas of attention necessary to complete a safe and effective movement at the roundabout. Each project may vary as some roundabouts will have ornamental grasses, trees, walls, artwork, or a combination of these. The splitter islands may also be treated with vegetative or hardscape materials so long as they do not conflict with adequate sight distance.

Q: How much traffic can the roundabouts handle?

A typical rule of thumb is that a single lane roundabout can accommodate approximately 2,200 vehicles per hour or 25,000 vehicles per day. The lane configuration of a roundabout is generated by traffic engineers that analyze existing and future traffic at the intersection. Appropriately sizing the roundabout for near-term and future growth is an important step in a roundabout project. Multilane roundabouts can handle approximately 4,000 vehicles per hour or up to 55,000 vehicles per day.

Q: What is the cost associated with the roundabouts compared to the benefits?

A typical cost benefit analysis that includes safety as one of the criterion will show a high benefit:cost ratio, meaning that the implementation of a roundabout will be supported. However other costs associated with roundabouts such as right-of-way acquisition, full-depth reconstruction of an existing intersection, utility relocations, etc. are looked at when considering a roundabout at any location to ensure the associated cost is reasonable based on the given location.

Q: How will traffic in the minor road be able to enter the roundabout during peak hour flows?

Roundabouts function with motorists yielding at the entry point to vehicles that are already circulating the roundabout. On certain movements a minor road may take priority over the major roadway, or vice-versa. For motorists approaching a roundabout to the right of a heavily traveled roundabout entry, a term called gap acceptance describes when the motorist will be able to enter the roundabout and proceed. Gaps in traffic on the major roadway can be created from a series of occurrences such as upstream traffic signals that create a break in platoons of traffic, circulating vehicles that may take priority over the major roadway entrance and major roadway traffic that makes a right turn in advance of the approach leg. Unless traffic flows are extremely high, delays are usually shorter at roundabouts than signalized intersections.

Q: Why is the roundabout being built at an existing intersection? Why not on a new roadway construction project?

When deemed feasible and reasonable by the City, it can make more sense to construct a roundabout at an existing intersection. When an all-way stop controlled intersection becomes congested and may warrant a traffic signal, the reconstruction to build a roundabout may be more suitable than widening for additional lanes and adding a traffic signal from a safety, mobility, environmental, and aesthetic standpoint. Often, a project will undergo a feasibility study to provide guidance so that the appropriate intersection control method is selected prior to the engineering design process.

Q: Can blinking lights be embedded at the entry line of the roundabout or textured pavement installed prior to the crosswalk to warn drivers they are approaching a roundabout?

In-pavement lights have been used at mid-block crosswalks and crosswalks at roundabouts in the past, however, are not part of a continuously recommended practice in regards to intersection design. Rural high-speed locations can benefit from textured pavement that warns drivers they are approaching a crosswalk and a roundabout. Urban areas are less likely to receive a pavement texture due to the noise it may cause that can impact adjacent property owners. Several other devices, such as rectangular rapid flashing beacons (RRFBs) and HAWK devices, are also used for pedestrian accommodations and can help reduce motor vehicle speeds at roundabouts. Appropriate signage and curb geometry accompanied by pavement markings is the best practice for alerting motorists that a roundabout is near.

Q: Are roundabouts safe near schools?

Roundabouts near schools have proven successful in many cases throughout the United States. A roundabout near a school zone may be a form of traffic calming since motorists are forced to slow down and yield to circulating traffic. With proper design, which can be seen in further detail in Framework for Assessing Roundabout near a School Zone, a roundabout allows school buses, passenger cars, pedestrians such as school children, and bicycles to share the road safely.

As pedestrians, school children have the legal right-of-way to cross at intersections. However, speeds can be high at signalized intersections and motorists and pedestrians are not always looking out for each other. A common type of incident is when a motorist making a left turn is too busy looking for oncoming traffic to see a pedestrian in the crosswalk, or a motorist is looking left while turning right. Both examples put the onus on the pedestrian to look out for their safety, even though they have the legal right-of-way.

Modern roundabouts place more responsibility for avoiding a crash on the adult motorist, and they keep vehicle speeds low through the crosswalk areas. Crosswalks at roundabouts are typically set at least one full car length back from the yield line. This separates the motorist tasks of looking out for pedestrians and looking for a gap in circulating traffic. The splitter islands have a refuge area for pedestrians so they have perform a two-stage crossing and only have to look for traffic coming from one direction at a time.

Roundabouts near schools should be designed to allow easy maneuverability by buses. Lane widths are such that buses should have adequate room to turn through the roundabout and should generally be accommodated within the circulatory roadway without tracking over the truck apron, which could cause discomfort to bus occupants.

Bus stops located on streets can be provided on either the entry or exit side of a roundabout. Pedestrian access to and from the bus stop should be carefully considered. Bus drivers have an easier time pulling out into traffic near roundabouts because of slower speeds and, usually, a greater number of gaps.

For more information see: http://guide.saferoutesinfo.org/engineering/roundabouts.cfm

Q: What should I do if an emergency vehicle is entering a roundabout?

The answer depends on where you are. 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. Do not enter a roundabout when an emergency vehicle is approaching. Instead, move to the right and stop so the emergency vehicle can safely pass.

Q: Are roundabouts more difficult for seniors and inexperienced drivers to maneuver through?

Learning how to drive a roundabout takes a bit of practice for anyone. Most seniors and inexperienced drivers are accustomed to traditional signalized intersections with little experience driving through a roundabout. Through practice and education they can become accustomed to roundabouts as well. Speeds are low in roundabouts, making them more forgiving than signalized intersections if mistakes are made.

Q: Are roundabouts difficult for large trucks or semis to maneuver?

Roundabouts are carefully designed to safely and effectively accommodate all vehicles with large turning radii such as large trucks (semis), tractor-trailers, emergency vehicles and buses. Roundabouts provide an area between the circulatory roadway and the central island, known as a truck apron, over which the rear wheels of these vehicles can safely track. The truck apron is composed of a reddish-colored concrete to discourage routine use by smaller vehicles.

Q: If roundabouts are so safe, why aren't they used at every intersection?

Roundabouts are not appropriate everywhere. Plus they can be more expensive to construct ad require more property at an intersection (property that is not always available). There are many factors when determining a location for a roundabout. They include, but are not limited to:

- *High crash rate locations.*
- *Intersections with large traffic delays.*
- *Complex geometry (more than four approach roads, for example).*
- *Intersections with frequent left-turn movements.*

Q: Are modern roundabouts new to this area?

No. Roundabouts have been implemented at intersections across Augusta, Georgia, and the United States over the last two decades. Worldwide, they have been in use for more than 50 years and promote safe and efficient traffic flow. Many public agencies and developers are implementing roundabouts at intersections, where appropriate, due to the many benefits they provide over other types of intersection control.