Burlington County Engineer's Office

Intersection Safety Improvement Project,
County Route 545 & Old York Rd. (CR 660)
Bordentown & Chesterfield Townships

What is a modern roundabout?

A modern roundabout is a circular intersection where all entering traffic yields to traffic circulating around a centralized island. The modern roundabout is used to slow the speed of vehicles, to reduce the occurrence of severe crashes and to increase intersection capacity. Since 1996, approximately 3,700 modern roundabouts have been built in the United States.

Safety:

Roundabouts create a safe environment for motorists, pedestrians and bicyclists. They reduce vehicle speeds, as well as the number of conflict points with turning vehicles. Roundabouts eliminate head-on/left-turn and angle type crashes which frequently result in the most serious injuries. Crashes that do occur tend to be of the lower severity, such as sideswipes. There are approximately 2,300 people killed each year at intersections controlled by a traffic signal. Compared to signalized intersections, roundabouts have been shown to reduce the total number of injury crashes by 76% and the total number of fatal crashes by more than 90%.

Operations:

Modern roundabouts are significantly different than the older "New Jersey style traffic circles" in how they operate and are designed:

-Many older traffic circles have two lanes of traffic flow around the central island allowing for passing and lane changes. The County Route 545/660 roundabout will have a single lane of traffic.

-Many older traffic circles measure over 600 feet in diameter. The County Route 545/660 roundabout will be 140 feet in diameter. The compactness of a modern roundabout helps to keep speeds below 20 mph vs. over 35 mph for a typical circle

-Many older traffic circles do not include signs to define how they operate, leaving many motorists confused and unsure of how to navigate the circle. The County Route 545/660 roundabout will include YIELD signs on all entering approaches instead of STOP signs or traffic signals. Vehicles will enter the roundabout when there are adequate gaps in traffic flow thereby reducing the time vehicles are stopped, providing increased capacity and less delay for drivers.

Roundabout vs. Traffic Signal:

The Federal Highway Administration has established a series of "warrants" for determining whether there is justification for installing a traffic signal at an intersection. These warrants are included in the "Manual on Uniform Traffic Control Devices" (MUTCD) which is adopted by New Jersey State Statute. The State of New Jersey and all its Counties utilize the warrants prescribed by the MUTCD for determining if an intersection should be signalized. Utilizing the required warrants for signalization, the County Engineer's Office has concluded that neither the traffic volumes nor the crash data justify the installation of a traffic signal at the intersection of County Route 545 & Old York Road (CR 660).

From a construction perspective, the total costs of upgrading an intersection with a roundabout vs. a traffic signal are comparable. The roadway construction costs for a roundabout may be

higher than those for a traffic signal, but these costs are offset by a savings of over $200,000 through the elimination of the traffic signal hardware and electrical work. In addition, roundabouts reduce long-term operational and maintenance costs associated with traditional signalized intersections. There are no traffic signals to power and maintain, which can amount to a taxpayer savings of approximately $5,000 per year.

Trucks:

The County Route 545/660 roundabout has been designed to accommodate trucks and other large vehicles which are of legal size and safe for road travel. Since trucks require more room to turn, the roundabout will include a mountable truck apron around the central island for additional space. The only vehicles that will be required to make a special movement through the roundabout are large tractor-trailers making right-turns from County Route 545 onto Old York Road. These large trucks will be required to make a full turn around the roundabout.

Construction:

Construction of the County Route 545/660 roundabout is being funded by the Federal Highway Administration and the New Jersey Department of Transportation. Road work is expected to commence in the spring of 2015 and be completed before the end of the year. Traffic impacts include a 40-day road closure and detour. Access to all driveways within the work area will be maintained throughout construction.

Questions/Comments:

Any questions or comments should be addressed to the Burlington County Engineer's Office at 856-642-3720 or CR545-SafetyProject@co.burlington.nj.us.

Or

Burlington County Engineer's Office
1900 Briggs Road
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Additional Resources:

Roundabouts – A Safer Choice.pdf

Safety Aspects of Roundabouts.pdf

Proven Safety Countermeasure.pdf

Rules for Driving Roundabouts.pdf