GENERAL POLICY AND PROCEDURE

DEPARTMENT OF PUBLIC SERVICE DIVISION OF TRAFFIC MANAGEMENT CITY OF COLUMBUS, OHIO	
SUBJECT: Roundabout Evaluation and Implementation Policy	
EFFECTIVE DATE: October 28, 2024	**BY:** James Pajk, P.E., City Engineer/Administrator
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Subject: ***Roundabout Policy Statement:***

I. PURPOSE: The purpose of this policy is to increase the use of modern roundabouts for improvement in safety and congestion relief. Communities across Ohio are committing to reaching zero traffic deaths and serious injuries through Vision Zero plans, policies, and strategies. Traffic crashes are not "accidents" and are preventable.

Roundabouts are a Proven Safety Countermeasure[1] because they can substantially reduce crashes that result in serious injury or death. Roundabouts can:

- Improve safety
- Promote lower speeds and traffic calming
- Reduce conflict points
- Lead to improved operational performance
- Meet a wide range of traffic conditions because they are versatile in size, shape, and design.

Roundabouts are the preferred safety alternative for a wide range of 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 reduce serious injury and deadly crashes by nearly 90% where two-way stop and signal controlled intersections are converted to roundabouts[1].

II. APPLICABILITY: The City will consider roundabouts as the preferred option of traffic control where a new intersection is planned, or an existing intersection has safety and/or congestion that necessitates a future traffic signal or all-way stop. An alternatives analysis (potentially including other intersection control types, such as signals and stop signs, or other alternatives) shall be conducted at all intersections where a roundabout is being considered. The alternatives analysis shall include a detailed traffic operations analysis and shall consider City costs (e.g., right-of-way, construction, and maintenance) and public costs (e.g., delay, safety, social costs of crashes and the environment.) The alternatives analysis should be the decision-making tool used to determine

[1] https://highways.dot.gov/safety/proven-safety-countermeasures/roundabouts

whether or not a roundabout will be constructed. Final discretion for all intersection control decisions rests with the Division of Traffic Management Administrator.

The following guidelines on intersection control selection shall be applied:

- In existing developed areas, a roundabout should be examined where: a traffic control change is justified by an engineering study; when capital improvements are being considered; or, when safety or capacity issues have been identified. The use of roundabouts in these circumstances will be at the discretion of the Division of Traffic Management Administrator.
- When a roadway project includes reconstructing an existing intersection or constructing new intersections, a roundabout alternative is to be analyzed to determine if it is a feasible solution based on site constraints, including right-of-way (ROW) impacts, environmental factors, and other design constraints.
- When the analysis shows that a roundabout is a feasible alternative, a roundabout should be considered the preferred alternative due to the proven substantial safety benefits and other operational benefits.
- Roundabouts may not be feasible for these following reasons including but not limited to:
    - On steep grades or where sight distance obstructions exist;
    - In close proximity to traffic signals;
    - Where unreasonable right-of-way impacts or impacts to historical assets are evident;
    - Environmental factors;
    - Near railway crossings;
    - Within an existing traffic signal coordinated network, or;
    - Other space and design constraints.

III. BACKGROUND: A roundabout is a circular intersection traffic control device with the following characteristics:

- Traffic flows counterclockwise around a center island.
- Entering traffic yields to circulating traffic.
- Channelized approaches deflect traffic into a proper entry path.
- Appropriate geometric curvature and curbs control the speed of vehicles.

Categories of roundabouts include mini-roundabouts, single lane layouts and multilane designs. The differences are mainly in circle size, with minis being the most compact while the largest circles, multilane designs, have at two circulating lanes and multilane approaches or exits. Mini roundabouts have traversable central islands while multilane roundabouts have large central island areas suitable for landscaping and place-making.

Roundabouts have proven to be much safer than traffic signals. The projected injury crash rate for roundabouts is half that of traditional signals. Replacement of signalized intersections with roundabouts has been found to reduce vehicle emissions and fuel consumption. This is due to the reduction in idle time by vehicles waiting for the light to change. Although roundabouts may not be appropriate in all circumstances, their application should be considered as an alternative for all proposed new intersections, particularly those with major road volumes with less than 90 percent of the total entering volume. The safety benefits of crash reduction and crash severity reduction translate into lower life-cycle costs of roundabouts.

Roundabouts are designed to be safer and more efficient than a traditional intersection. The geometry creates a low speed (20-30mph) environment inside the circulatory roadway, as well as at the entry and exit locations. The geometry also prevents high angle crashes such as right-angle and left turn angle crashes. Lower angle, low speed crashes tend to be less severe than higher angle, high speed crashes.

For additional guidance regarding the design of roundabouts within the City of Columbus, refer to City of Columbus Department of Public Service Design memo 7.04.

BY: Kelly B Scocco DATE: 11/13/24

DIRECTOR