COMPTON GREENWAY CIRUCLAR INTERSECTIONS

Circular Intersections and their applications for Neighborhood Streets

There are many different circular intersections that have similar features. Modern roundabouts, mini-roundabouts, and traffic circles are all types of circular intersections which are unsignalized, one-way circular intersections engineered to improve safety by reducing conflict points and speeds at intersections. Modern roundabouts are larger, require significant right-of-way, and are appropriate for higher volume roadways while mini-roundabouts and traffic circles are smaller and appropriate for local, neighborhood streets.[1] Mini-roundabouts and traffic circles can use a variety of design elements such as mountable curbing to accommodate larger vehicles or splitter islands to channelize vehicles to reinforce clockwise operations and slow speeds.[2] The decision to include different design elements depends on several elements including intersection sight distance, the types of vehicles that use the intersection, the size of the center island, the widths of the intersecting streets, etc. In other words, each circular is intersection is slightly different based on the existing land use and roadways. The Compton Greenway Circular intersections will be designed based on each intersection's individual characteristics.

Safety and Operating Speed Reduction Information

A *field study* of 45 traffic circles measured an average reduction of 4 mph for 85th percentile speeds.[1]

Roundabouts are a proven safety countermeasure because they can sustainably reduce crashes that result in serious injury or death.[3] This safety benefit is due to their impact on operating speeds and reduction of conflict points.

When converting from a two-way intersection to a circular intersection, vehicular operating speeds are impacted by the driver needing to slow to both assess if they will need to yield to circulating traffic and to navigate the shift/horizontal deflection.[1]

Research has shown that when traffic calming devices are spaced between 250 to 500 feet, vehicles speeds stay within a 20 to 30 mph range.[4] The intersections along Compton Roadway are approximately 300 - 400 feet apart, meeting the recommended spacing criteria for corridor-wide traffic calming.

Are there conflicts with the proposed traffic calming devices and the fire code?

The City of Cleveland Heights and Toole Design are working hand in hand with the fire department to ensure that emergency service access along Compton Road is maintained. The fire department is supportive of these devices and will continue to provide input throughout the design.

Will the posted speed limit be changed?

A speed limit change is not needed to install the proposed traffic calming devices.

How will snowplows navigate these devices?

Snowplows can maintain circular intersections. The use of vertical elements such as plantings, flex post, and signage help to alert operators to their presence so that they can adjust their path around the device.

Examples

Columbus, Ohio Roys Ave / Fremont Street and Tara Hill

Minneapolis, Minnesota - 6th Ave/6th Street Bicycle Boulevard and 6th Ave/7th St Bicycle Boulevard

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[1] FHWA Traffic Calming E-Primer
[2] NACTO Mini-Roundabouts
[3] FHWA Roundabout | Intersection Safety
[4] Effectiveness of Traffic Calming Measures in Salt Lake City