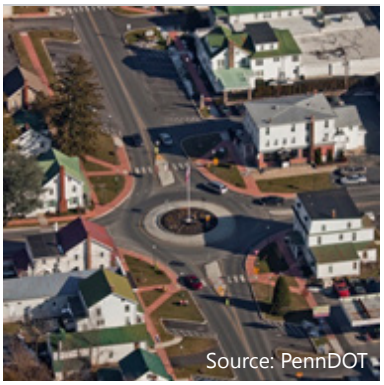
UIIG Unsignalized Intersection Improvement Guide

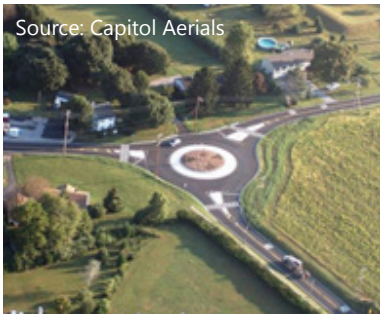
Install a Roundabout

A form of circular intersection in which vehicles travel counterclockwise around a central island and entering traffic must yield to circulating traffic.



This aerial photograph shows an urban, four-legged roundabout.

Critical guidance is provided through pavement markings along this multilane approach.



This aerial photograph shows a rural, three-legged roundabout.

Check for Crash Modification Factor: CMF Crash Modification Factors Clearinghouse

Targeted Crash Types

- Right-angle
- Opposing left turn

Problems Addressed

- Speeding
- Excessive intersection conflicts
- Inappropriate intersection traffic control
- Poor operational performance

Conditions Addressed

- Consider as an alternative to signalization.
- High crash frequency or severity, resulting in a need to reduce conflict points at the intersection.
- Congestion related to high numbers of left-turning vehicles.

Considerations

- May require additional right-of-way to construct a radius that accommodates a large design vehicle.
- Best at intersections having relatively balanced approach volumes or high numbers of left-turning traffic.
- Incorporating splitter islands and horizontal deflection into the design of the approach legs is key so that traffic entering the circular roadway is naturally encouraged to decrease its speed.
- Consider sight distance for all approaches when designing the aesthetics in the center. Truck aprons are also typically needed to accommodate off-tracking.
- Where dual approach or departure lanes exist, alternate accommodations are sometimes incorporated for visually-impaired pedestrians; these may include signals, PHBs, RRFBs, or raised crosswalks.
- In areas where roundabouts are uncommon, public involvement and education are necessary components for project success.

Industry Standard

MUTCD

Sections 2B.43 Roundabout Directional Arrow Signs

Section 2B.44 Roundabout and Circulation Plaque

Section 2B.45 Examples of Roundabout Signing

Chapter 3C. Roundabout Markings

AASHTO Green Book

Section 9.3.4: Roundabouts

Section 9.10: Roundabout Design

Other Resources

NCHRP 672: Roundabouts: An Informational Guide, FHWA

Innovative Operational Safety Improvements at Unsignalized Intersections, Florida DOT

NCHRP 500 Volume 5: A Guide for Addressing Unsignalized Intersections

NCHRP 613: Guidelines for Selection of Speed Reduction Treatments at High-Speed Intersections

Evaluating the Performance and Safety Effectiveness of Roundabouts, Michigan DOT

Roundabouts, PEDSAFE

Select Examples

Old Bethlehem Pk. & Station Rd., Quakertown, PA

VIDEO: Old Bethlehem Pk. & Station Rd., Quakertown, PA

Ulysses St. & S. Golden Rd., Golden, CO

E. Kings Hwy. & S. Pierce St., Eden, NC