



Roundabout Benefits

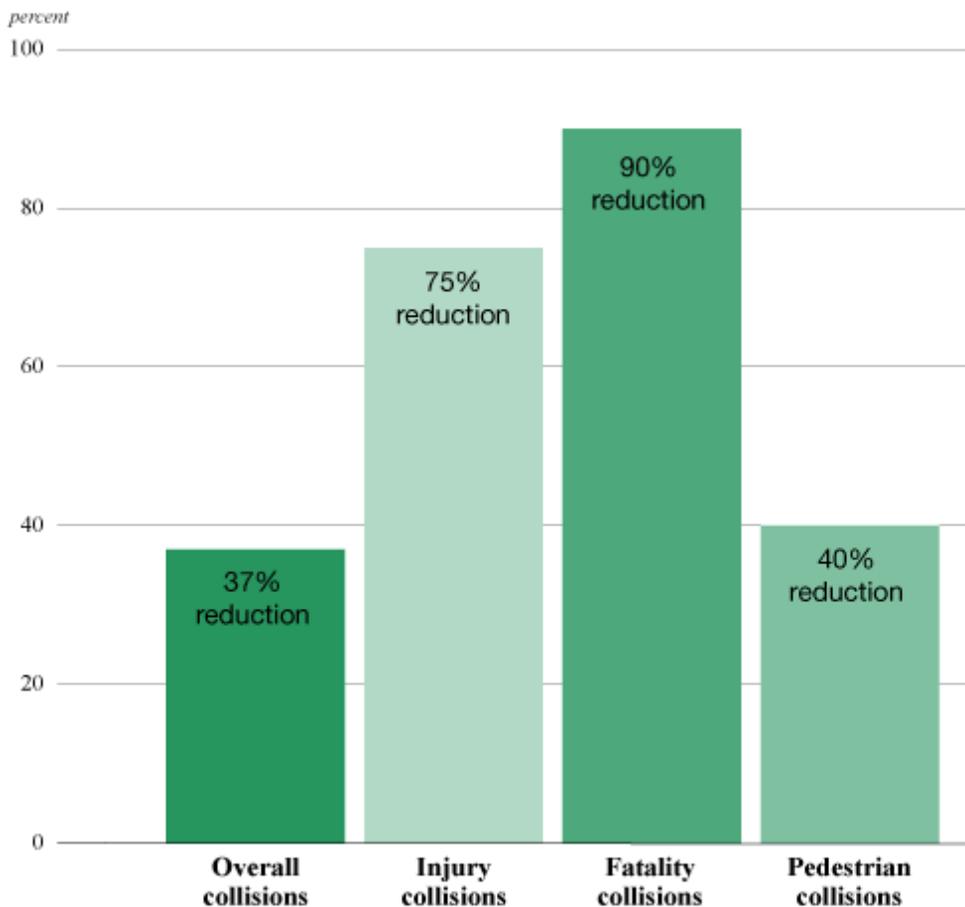
Improve safety

Studies have shown that roundabouts are safer than traditional stop sign or signal-controlled intersections.

Roundabouts reduced injury crashes by 75 percent at intersections where stop signs or signals were previously used for traffic control, according to a study by the Insurance Institute for Highway Safety (IIHS). Studies by the IIHS and Federal Highway Administration have shown that roundabouts typically achieve:

- A 37 percent reduction in overall collisions
- A 75 percent reduction in injury collisions
- A 90 percent reduction in fatality collisions
- A 40 percent reduction in pedestrian collisions

Reduction in collisions



Source: Federal Highway Administration and Insurance Institute for Highway Safety (FHWA and IHS)

There are several reasons why roundabouts help reduce the likelihood and severity of collisions:

- **Low travel speeds** – Drivers must slow down and yield to traffic before entering a roundabout. Speeds in the roundabout are typically between 15 and 20 miles per hour. The few collisions that occur in roundabouts are typically minor and cause few injuries since they occur at such low speeds.
- **No light to beat** – Roundabouts are designed to promote a continuous, circular flow of traffic. Drivers

need only yield to traffic before entering a roundabout; if there is no traffic in the roundabout, drivers are not required to stop. Because traffic is constantly flowing through the intersection, drivers don't have the incentive to speed up to try and "beat the light," like they might at a traditional intersection.

- **One-way travel** – Roads entering a roundabout are gently curved to direct drivers into the intersection and help them travel counterclockwise around the roundabout. The curved roads and one-way travel around the roundabout eliminate the possibility for T-bone and head-on collisions.

Curious to know more? Watch a video about how roundabouts improve safety.

Reduce delay, improve traffic flow

Contrary to many peoples' perceptions, roundabouts actually move traffic through an intersection more quickly, and with less congestion on approaching roads. Roundabouts promote a continuous flow of traffic. Unlike intersections with traffic signals, drivers don't have to wait for a green light at a roundabout to get through the intersection. Traffic is not required to stop – only yield – so the intersection can handle more traffic in the same amount of time.



Studies by Kansas State University

<http://www.ksu.edu/roundabouts/> measured traffic flow at intersections before and after conversion to roundabouts.

In each case, installing a roundabout led to a 20 percent reduction in delays. Additional studies by the IIHS of intersections in three states, including Washington, found that roundabouts contributed to an 89 percent reduction in delays and 56 percent reduction in vehicle stops.

Less expensive

The cost difference between building a roundabout and a traffic signal is comparable. Where long-term costs are considered, roundabouts eliminate hardware, maintenance and electrical costs associated with traffic signals, which can cost between \$5,000 and \$10,000 per year.

Roundabouts are also more effective during power outages. Unlike traditional signalized intersections, which must be treated as a four-way stop or require police to direct traffic, roundabouts continue to work like normal.

Less space

A roundabout may need more property within the actual intersection, but often take up less space on the streets approaching the roundabout. Because roundabouts can handle greater volumes of traffic more efficiently than signals, where drivers may need to line up to wait for a green light, roundabouts usually require fewer lanes approaching the intersection.

Good locations for roundabouts

Roundabouts are safe and efficient, but they are not the ideal solution for every intersection. We look at several factors when deciding to build a roundabout at a specific intersection. Engineers consider these characteristics when determining the best solution for a particular intersection:

- **Accident history** – data about the number of accidents, type of crash, speeds, and other contributing factors are analyzed.

- **Intersection operation** – the level of current and projected travel delay being experienced, and backups on each leg of the intersection.
- **Types of vehicles using the intersection** – we look at the different kinds of vehicles that use the intersection. This is especially important for intersections frequently used by large trucks.
- **Cost** – this includes the societal cost of accidents, right-of-way (land purchase) requirements, and long-term maintenance needs.

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