Why agencies choose roundabouts

- Safer
- More efficient (less delay)
- More aesthetic design opportunities
- Reduced vehicle emissions – greener!
- Access management (provides U-turn location)
- Less ROW required for approach lanes
- To deal with odd intersections
Design it right or you might have problems!

- **Critical design features**
  - Speed profiles
  - Path overlap
  - Phi Angle
  - Truck design
  - Sight distance (Landscaping)
  - Signing and pavement markings
  - Lighting
Speed Profiles (fastest path)

- Most important -
  - Design entrance to slow traffic
- Good to do -
  - Smooth transitions
- Curvature on exit delays vehicle acceleration and lowers speeds at crosswalk
Avoid Path Overlap

- Multi-lane roundabouts
- Guide drivers into proper lane
- Can cause delay and crashes
Entry Angle

- 20-40 degrees preferred
Truck Paths

- Balance with speeds
- Truck drivers don’t always know they can use the apron

PHOTOGRAPHY SOURCE: Lee Rodegerdts
Sight Distances (Landscaping)

- Minimize “visual noise”
- Don’t block critical sight distances
- Don’t forget visibility of pedestrians!
- Use landscaping to make roundabout apparent
Signing and Pavement Marking

- Clear
- Concise
- Avoid over-kill
- Consider overhead lane use signs
Lighting

- Illuminate pedestrians and bicyclists
- Illuminate curbs and vehicle path
- Make driver aware of approaching roundabout
In areas where there are roundabouts, people like them!

### Q3: As a driver, how would you rate your general opinion of roundabouts?

- **Strongly Favor**: 30%
- **Favor**: 40%
- **Neutral**: 20%
- **Oppose**: 10%
- **Strongly Oppose**: 10%

**Answered: 2,789  Skipped: 218**
Single lane roundabouts are easy!

- Easiest to design
- People find them easy to navigate

Q17 Single-lane roundabouts are easy to use and understand.

Answered: 2,681  Skipped: 326
Multilane roundabouts are harder, but not bad
People will not believe you when you say roundabouts are safer

Q7 As a motorist, how safe do you feel in a roundabout compared to an intersection with traffic signals?

Answered: 2,730   Skipped: 217

- More safe
- About the same
- Less safe
- NA - I do not use roundabouts
But roundabouts are “safe”

- Few reported injuries
- Serious injuries or fatalities are very rare
- Favorable speeds and collision angles

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2014-2016 (3 years)
Roundabouts are safer, but the number of crashes could increase after installation

- Especially at multilane roundabouts
- And especially at “double-double” roundabouts
Top 2 Driver Mistakes

Not yielding to all lanes of traffic

Drivers enter only when there is a safe gap in traffic.

Drivers must yield to pedestrians and bicyclists using the crosswalks.

Circulating traffic has the right of way. Continue to your exit and do not stop within the roundabout.

The entering driver (red) is at fault due to failure to yield to the circulating vehicle (green).

The driver in the inside lane of the roundabout can either exit or continue circulating.

Entering vehicle must yield to all traffic coming from the left.

Turning from wrong lane

Drivers in the outside (right) lane are not allowed to turn left; they must exit the roundabout. Drivers in the left lane may exit or turn left.

In this type of crash, the driver of the red car is at fault for failing to obey the lane use signs and choosing the incorrect lane.

Drivers wishing to turn left must be in the left (inside) lane before entering the roundabout.

Multiple signs and pavement markings on every approach remind drivers of the need to choose the proper lane.

Failure to use the proper lane can result in a ticket or a crash.
Not yielding to all circulating traffic
Turning from the wrong lane
Some people think they should “merge” into traffic.

Q20 How should a motorist enter a multi-lane roundabout?

Answered: 2,645   Skipped: 362

- Merge into circulating traffic: 20%
- Wait for appropriate gap in traffic: 70%
- Wait for circulating traffic to stop: 0%
- Wait for roundabout to be clear of all traffic: 0%
It is better to start smaller, expand later (if needed)
People will say they are not safe for pedestrians, but they are...
Do signalized intersections feel safer?

- Key vehicle/pedestrian conflicts:
  1. Right turns on green (legal)
  2. Crossing movements on red (high-speed, illegal)
  3. Left on green (legal for permitted phasing)
  4. Right on red (typically legal)
Roundabouts are easy to cross, but there are some challenges

- 2 conflicts exist for each crossing
  - Conflict with entering vehicles
  - Conflict with exiting vehicles

- Biggest issues
  - Second lane conflicts (multilane)
  - Exit leg vehicle yielding
  - Blind pedestrians
Lower speed at roundabouts is safer for pedestrians

Chance of pedestrian death increases with vehicle speed

15% chance at 32 km/hr (20 mph)
45% chance at 50 km/hr (30 mph)
85% chance at 65 km/hr (40 mph)

Source: United Kingdom
Reduced number approach lanes creates opportunities
A few people will be strongly opposed to a new roundabout – until it actually opens.

Managing Editor of Athens Messenger

When you’re wrong, you’re wrong. And when it comes to the Richland Avenue roundabout, I’m woman enough to admit I was wrong.

It seems as though the engineers behind the roundabout knew exactly what they were doing when they brought the roundabout concept to Athens.

I will gladly attend the dedication ceremony ... and personally thank the individuals behind the project.
Contact

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