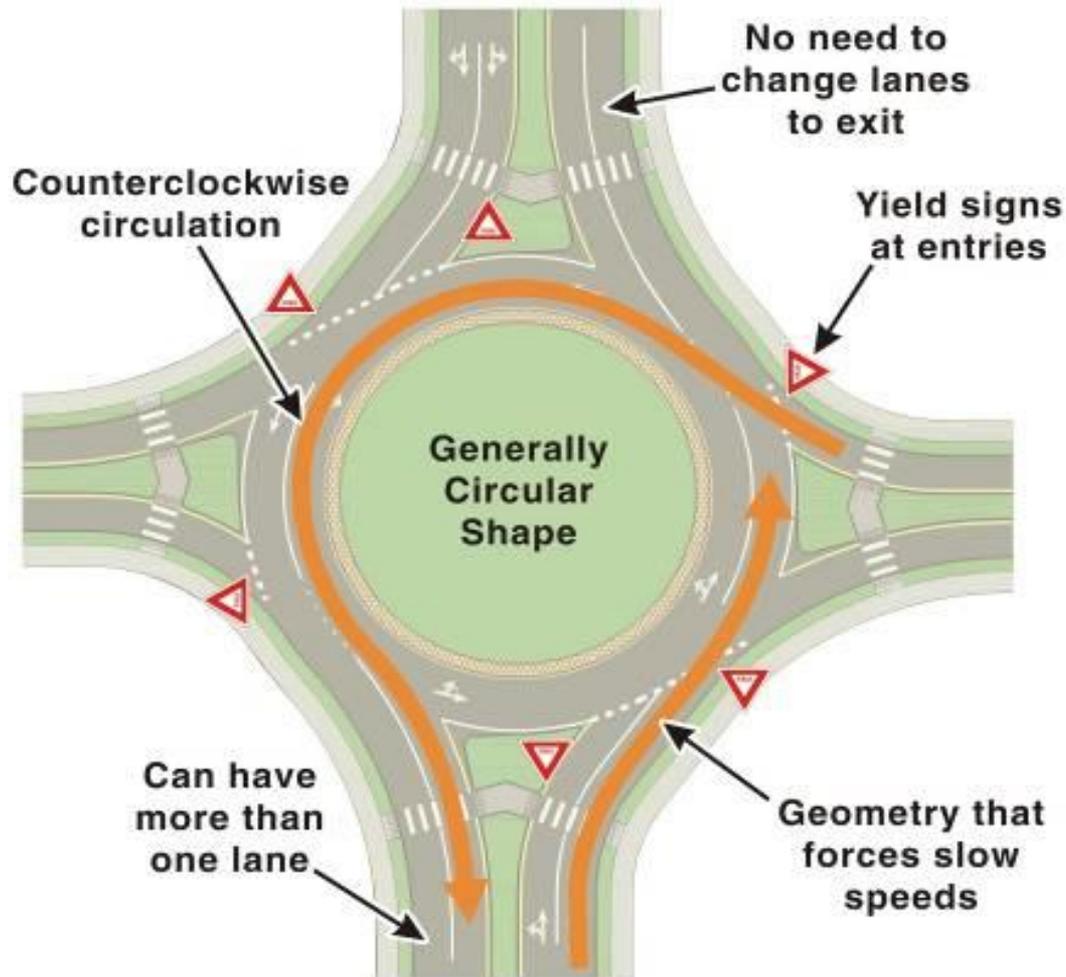




Roundabouts are  
good for business

# What is a roundabout



1. Slow down when approaching a roundabout
2. Yield to vehicles in the roundabout
3. When clear, proceed right into the roundabout
4. Turn right out of the roundabout at your desired exit

Page F-7 in the RDM:

Limit the number of traffic conflicts

Separate basic conflict areas

Separate turning and through movements

Providing sufficient spacing between at grade intersections

Maintain progressive speeds

Provide adequate on-site storage lanes

## What benefits do roundabouts provide to businesses?

- Allow for closer spacing of intersections
- Utilize RI / RO access to businesses
- Allow for protected U turns
- Safer environment for pedestrians
- Lower speed environment
- Typically better traffic operations
- Realign skewed / 5+ leg intersections
- Possible smaller R/W impacts to businesses
- Provide gateway / landscaping opportunities

Roundabouts function essentially as partial access intersections. Utilize partial access criteria.

F-23

**Minimum Spacing Standards for Commercial Entrances, Intersections, and Median Crossovers**

Highway Functional Classification	Legal Speed Limit (mph) <sup>①</sup>	Minimum Centerline to Centerline Spacing (Distance) in Feet			
		Spacing from Signalized Intersections to Other Signalized Intersections <sup>②</sup>	Spacing from Unsignalized Intersections & Full Median Crossovers to Signalized or Unsignalized Intersections & Full Median Crossovers <sup>③</sup>	Spacing from Full Access Entrances & Directional Median to Other Full Access Entrances and Any Intersection or Median Crossover <sup>④</sup>	Spacing from Partial Access One or Two Way Entrances to Any Type of Entrance, Intersection or Median Crossover <sup>⑤</sup>
Principal Arterial	≤ 30 mph	1,050	880	440	250
	35 to 45 mph	1,320	1,050	565	305
	≥ 50 mph	2,640	1,320	750	495
Minor Arterial	≤ 30 mph	880	660	355	200
	35 to 45 mph	1,050	660	470	250
	≥ 50 mph	1,320	1,050	555	425

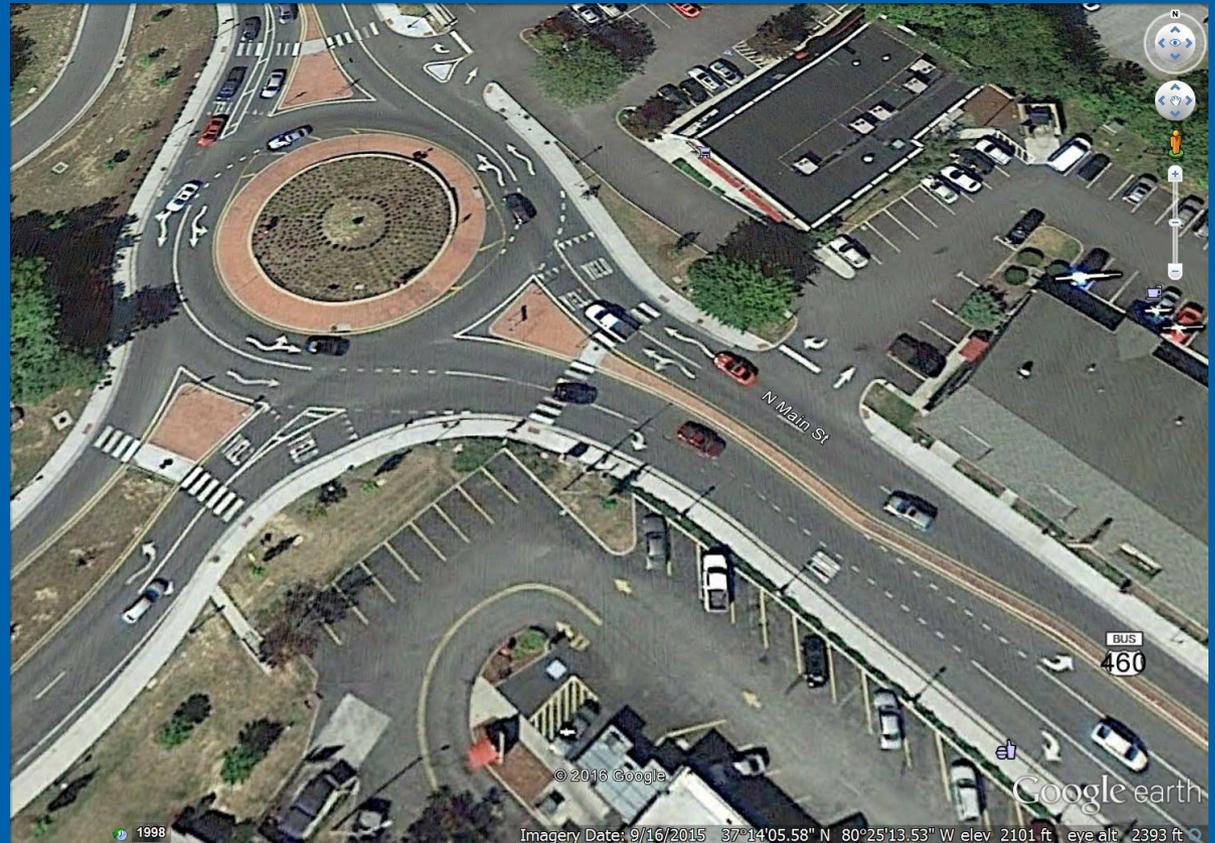
- Landowner concerned with access in southeast quadrant
- 180 ft along arterial
- 260 along minor road
- RI / RO entrances on arterial leg and full access along minor road
- Signal would pose queue issues with access
- Possible less RW impact than design w/ turn lanes



Splitter island will promote the use of RI / RO entrances within the functional area of the roundabout

Safer design - limit conflict points

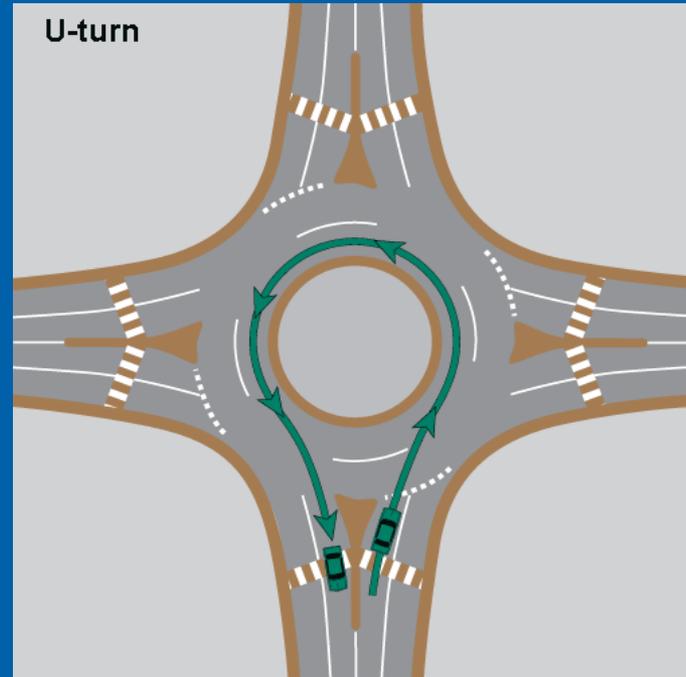
Better operations



- No entrances within 100 ft of circulating roadway
- Utilize RI / RO design
- Locate left turns on the exiting legs as far from roundabout as possible – provide turn lane if possible
- Extend splitter islands as long as possible – target to slow vehicles

# Allow for protected U turns

- Large turning radius for larger vehicles
- Lower speed environment
- Traffic flowing in the same direction



# Safer for Pedestrians

## Raised splitter island

- Provide pedestrian refuge area
- Lower driving speeds
- Need to cross only one direction of traffic at a time
- Typically shorter distance to cross



- Tight geometrics provide for a 15 to 20 mph driving speed
- Splitter islands visually slow cars
- Approach signage
- Lower speeds provide for better business recognition.



# Better traffic operations

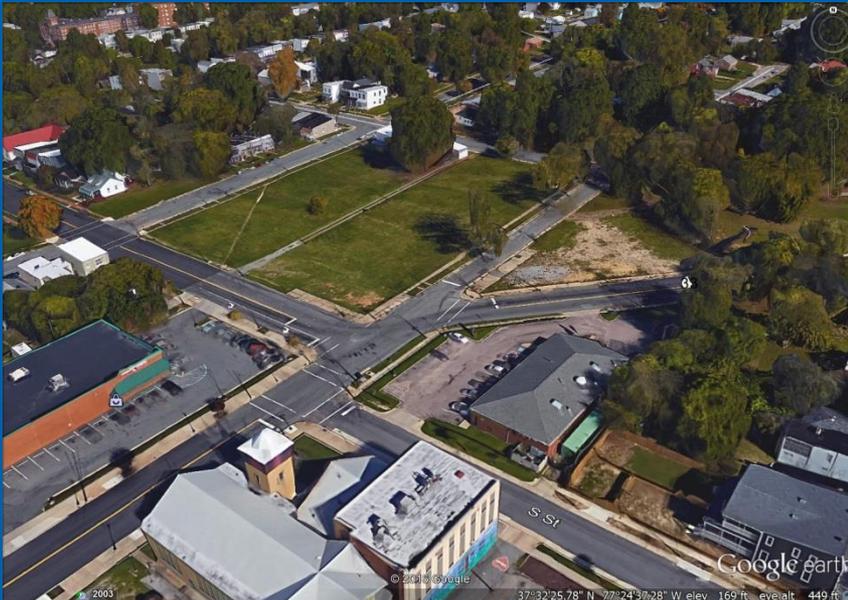
- Typically better traffic operations with a roundabout vs signal control
- Typically shorter queues and less vehicle delay
- Facilitate left turn movements
- Less toxic emissions
- Less starting and stopping - continuous flow



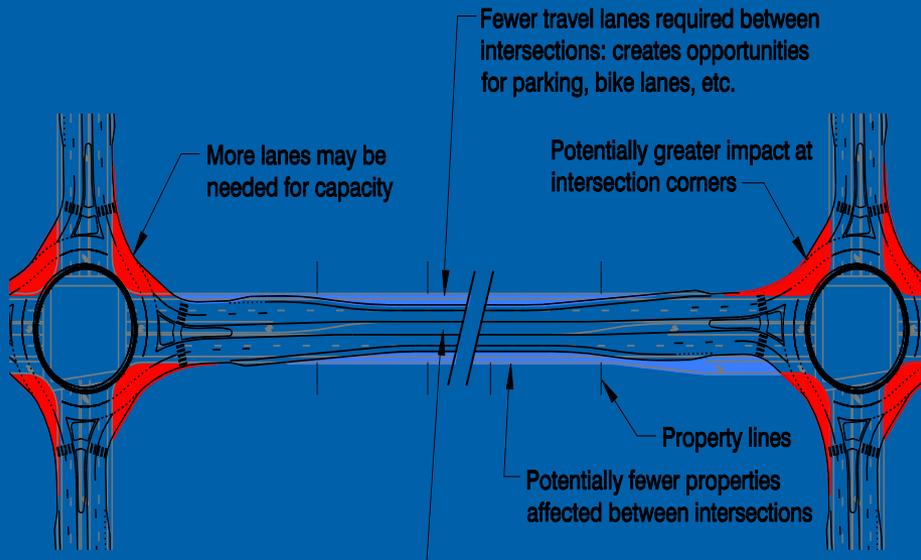
# Realign skewed / 5 + leg intersections – City of Richmond

- Skewed angles and offset roadways

## 5 leg intersection Richmond



## Potentially Less Right of Way needed



## “push” roundabout into vacant quadrant



# **The Golden, Colorado Roundabout Corridor**

**From a presentation by Dan Hartman  
from The City of Golden, CO**

For additional information contact:

Dan Hartman

(303) 384-8150

[dhartman@ci.golden.co.us](mailto:dhartman@ci.golden.co.us)

# South Golden Road - Golden, CO - Before





Commercial Access

Commercial Access

Johnson Road  
Roundabout

Reduce speed through the corridor

Improve aesthetics

Improve access for businesses and residential neighborhoods

Improve safety

Create pedestrian friendly environment

Reduction of 85th % speed from 48 mph to 33 mph

Reduction average in delay time, the time it takes to drive the half mile is less even with a 15 mph speed reduction

Elimination of large queues from parking lots

Safer pedestrian access

Cyclists find them preferable to Traffic signals

Crash rate reduced 88%, with increased traffic from the new shopping center, and additional controlled intersections.

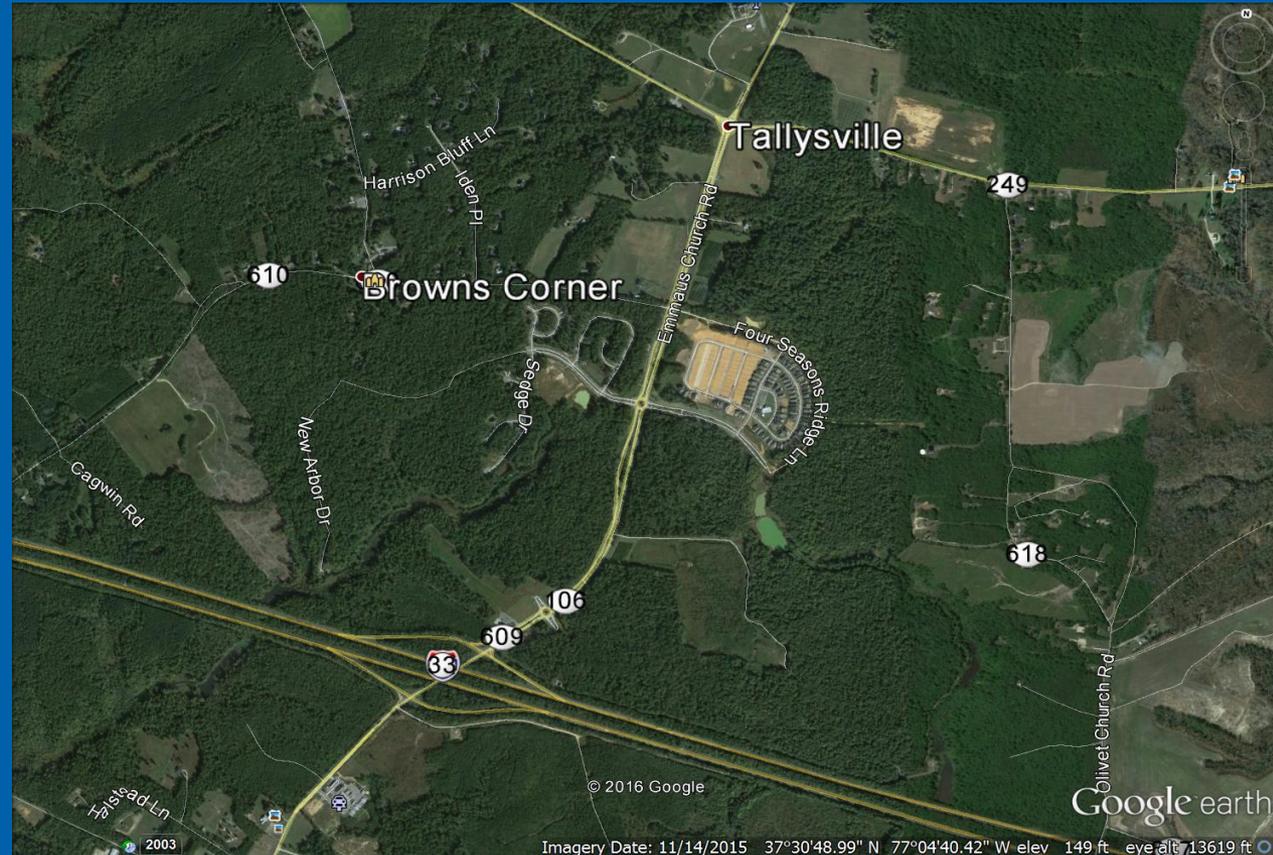
Reduced severity of crashes.

Reduced injures, for the entire section the pre-roundabout injury rate was 10 per year. We have had 1 injury in 5 years.

60% growth in sales tax revenue for this corridor, as opposed to nearly flat growth for the rest of Golden, in the 5 yrs since 2000.

# Roundabouts in Virginia

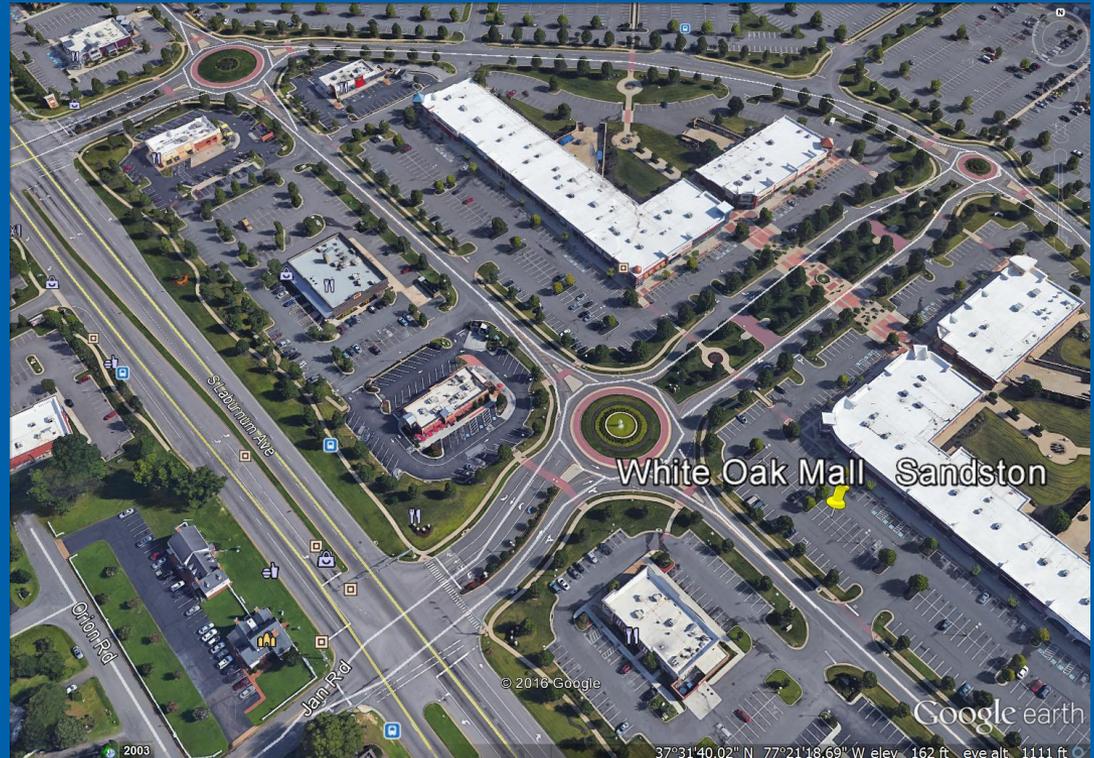
- Commercial / residential corridor
- Lower speed environment
- Limit access along the corridor
- Gateway treatment



- Commercial / residential corridor
- Series of roundabouts
- Lower vehicle speeds / queues
- Mitigate skewed intersections
- Handle higher traffic volumes than 4 way stops



- Mall location
- Shorter queues
- Manage access within mall area
- Gateway treatment
- Better operations than 4 way stop

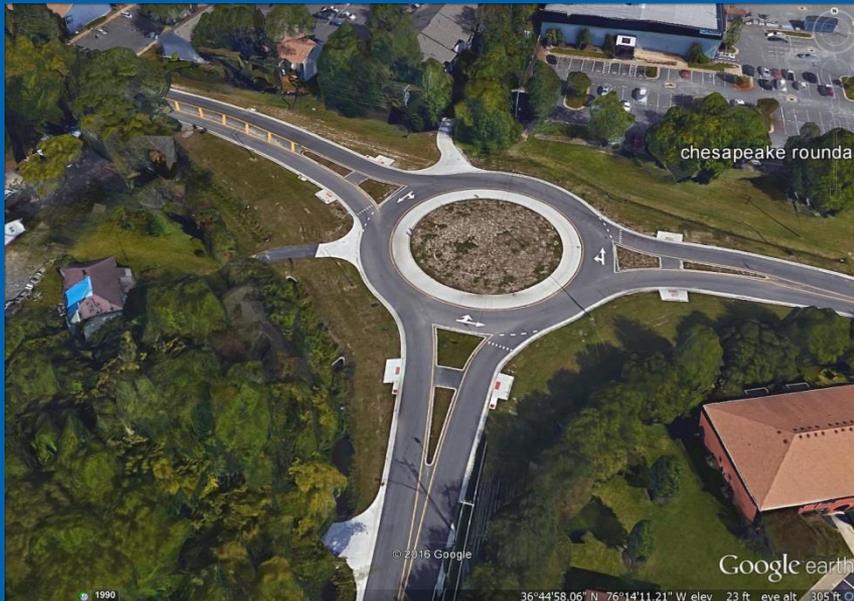


- Mall location
- Shorter queues
- Manage access within mall area

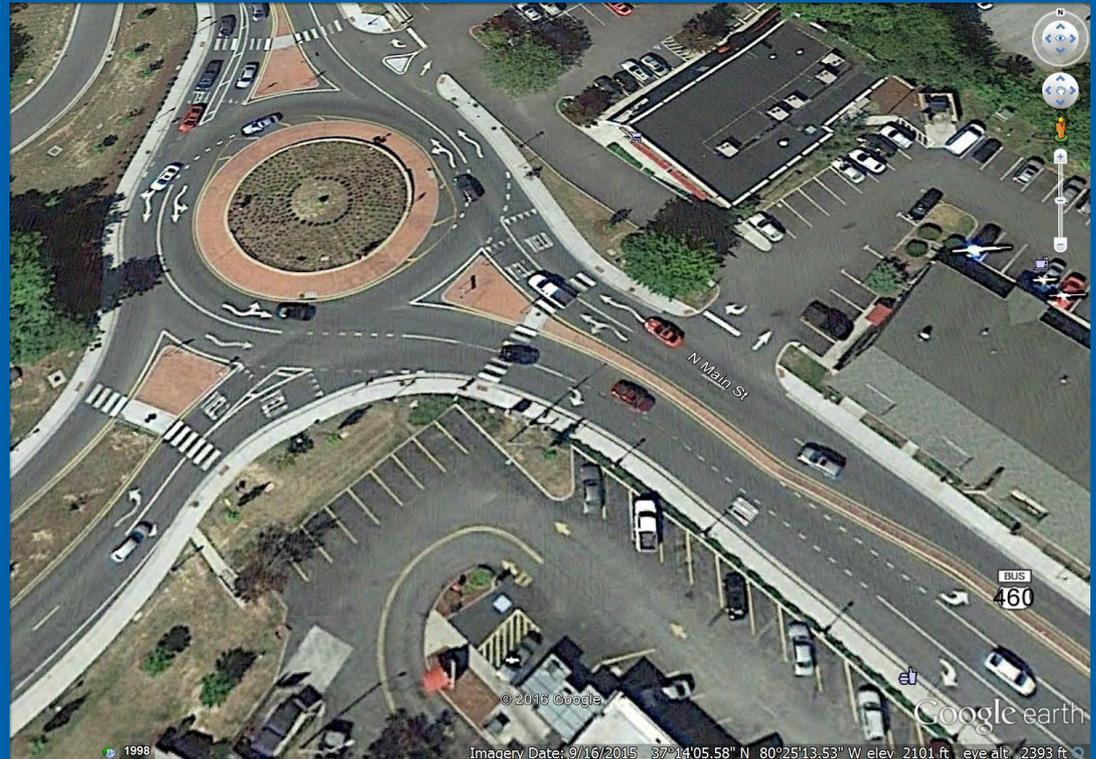


Chesapeake – business entrance on 1 leg

Chesapeake street view



- Business access adjacent to roundabout
- High pedestrian activity



## CRASH REDUCTIONS FOLLOWING INSTALLATION OF ROUNDABOUTS IN THE UNITED STATES – MARCH 2000

- Reduction of Total Crashes by 39%
- Reduction of Injury Crashes by 76%
- Reduction of Fatal and Incapacitating Crashes by 89%

On the web at: [www.highwaysafety.org](http://www.highwaysafety.org)

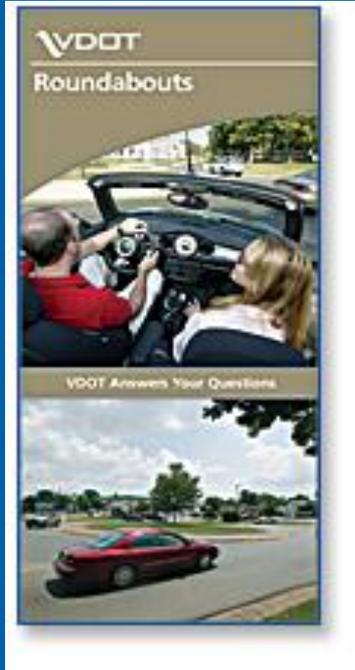
Based on 15 Single Lane Roundabouts in Maryland in 2004

- Fatal Crashes down 100 percent
- Total crash rate down 60 percent
- Injury crash rate down 82 percent
- Property damage down 27 percent

Road Design Manual – pg B-40 – ‘VDOT policy that **Roundabouts be considered** when a project includes reconstructing or constructing new intersection(s); AND ‘When the analysis shows that a Roundabout is a **feasible** alternative, it should be considered the Department’s **preferred alternative**’

Sheet 3 of the Roadway Design worksheet in the PM-100 Scoping Report – provide **documentation** for use of roundabouts

- **District**
  - Existing & Proposed Subdivisions**
  - Secondary System – up to Design Volume of 10,000 VPD**
- **Roundabout Review Committee**
  - Secondary System – over 10,000 VPD**
  - All Urban and Primary Systems**



Roundabouts in Virginia

Why Use a Roundabout?

How to Drive Roundabouts