



Traffic Safety Improvements Countywide for the area of Picture Rocks Road at Sandario Road

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Pima County Department of Transportation

Welcomes You!

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Project Life Cycle



Public Input



You are here

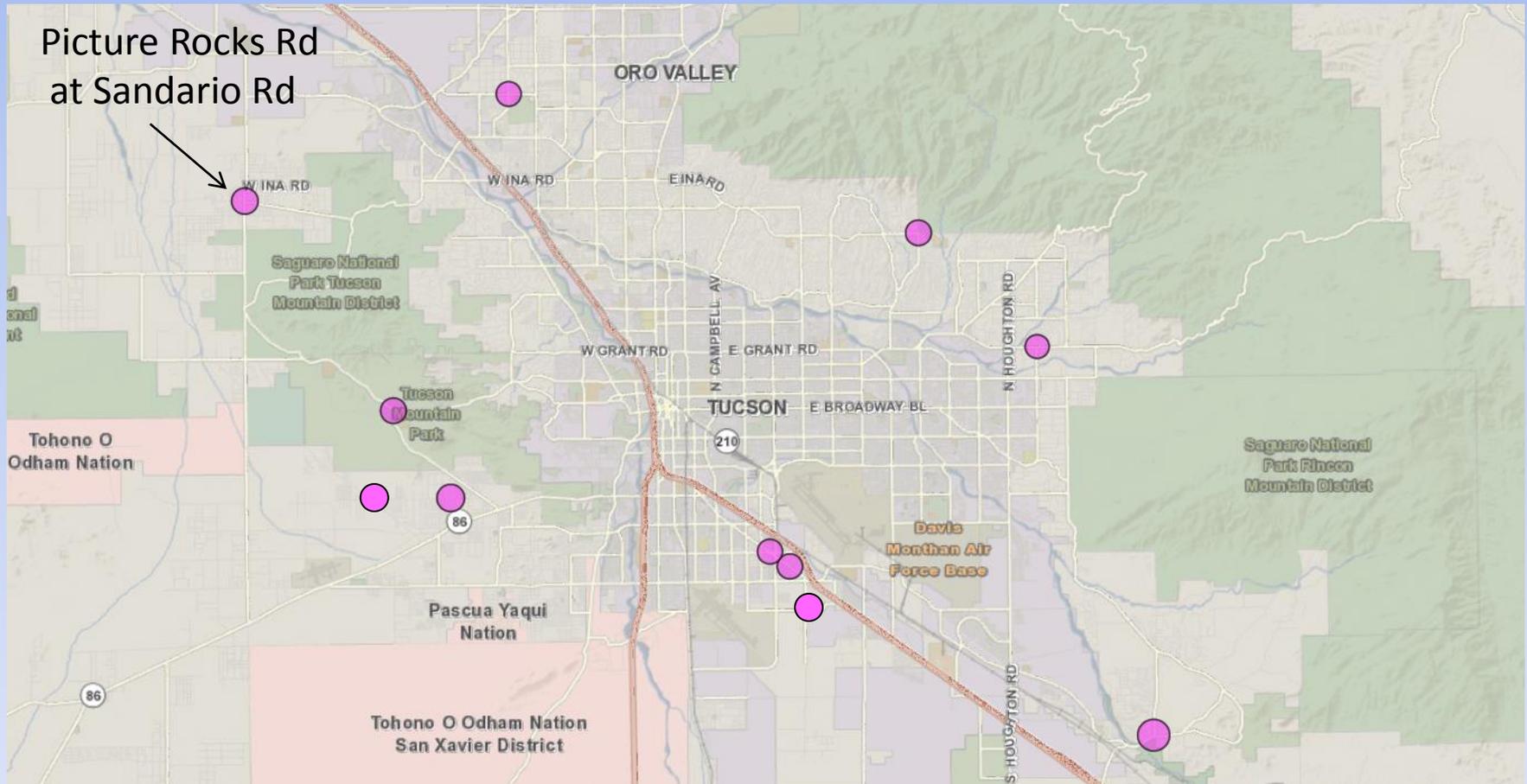


Life Cycle of the Project Development Process

Improvement Project Locations



Proposed safety / capacity related projects



Project Goals



1. Reduce the total number of crashes and reduce crash severity
2. Improve bicycle and pedestrian safety and access
3. Improve safety by reducing traffic congestion
4. Maintain existing access to businesses and driveways
5. Analyze life-cycle costs with predictive safety methodology
6. Provide improvements based on safety benefits

Project Site



Picture Rocks Rd at Sandario Rd



Traffic Operations



Picture Rocks Rd at Sandario Rd

Safety and Capacity related issues:

- 10-year Crash History—31 crashes total , 23 property damage, 8 injury accidents (15 were angle crashes)
- Average Daily Traffic (ADT)—10,143 vpd Picture Rocks Rd
3,928 vpd on Sandario Rd
- Congested Area

Traffic Operations



Picture Rocks Rd at Sandario Rd – looking north



Traffic Operations



Picture Pocks at Sandario Rd – looking west



Traffic Operations



Picture Rocks Rd at Sandario Rd – looking south



Traffic Operations



Pictur Rocks Rd at Sandario Rd – business access



Possible Solutions



Picture Rocks Rd at Sandario Rd

Reasonable alternatives:

- Improve intersection
- Improve pedestrian access and facilities
- Improve bicycle facilities
- Add lighting
- Maintain access to businesses

Intersection Types

Stop Control

Traffic Signals

Roundabouts



Hannah Olsen E.I.T

Modern Roundabout Example



96th Street and Cholla Street in Scottsdale

Other Circular Intersections



Neighborhood Traffic Circles

- Common in Tucson neighborhoods
- Used to slow down traffic on local streets

Rotaries

- First circular intersections in the U.S.
- Common back east
- Very large radii



Roundabouts vs. Traffic Signals

- ✓ Fewer & Less Severe Accidents
- ✓ No Red Light Running
- ✓ Slower Speeds (operating speeds 15–23 mph)
- ✓ Improved Pedestrian Safety
- ✓ Faster Commute Travel Times
- ✓ Less Congestion and Delay
- ✓ Increased Capacity
- ✓ Aesthetics
- ✓ Reduced Air Pollution

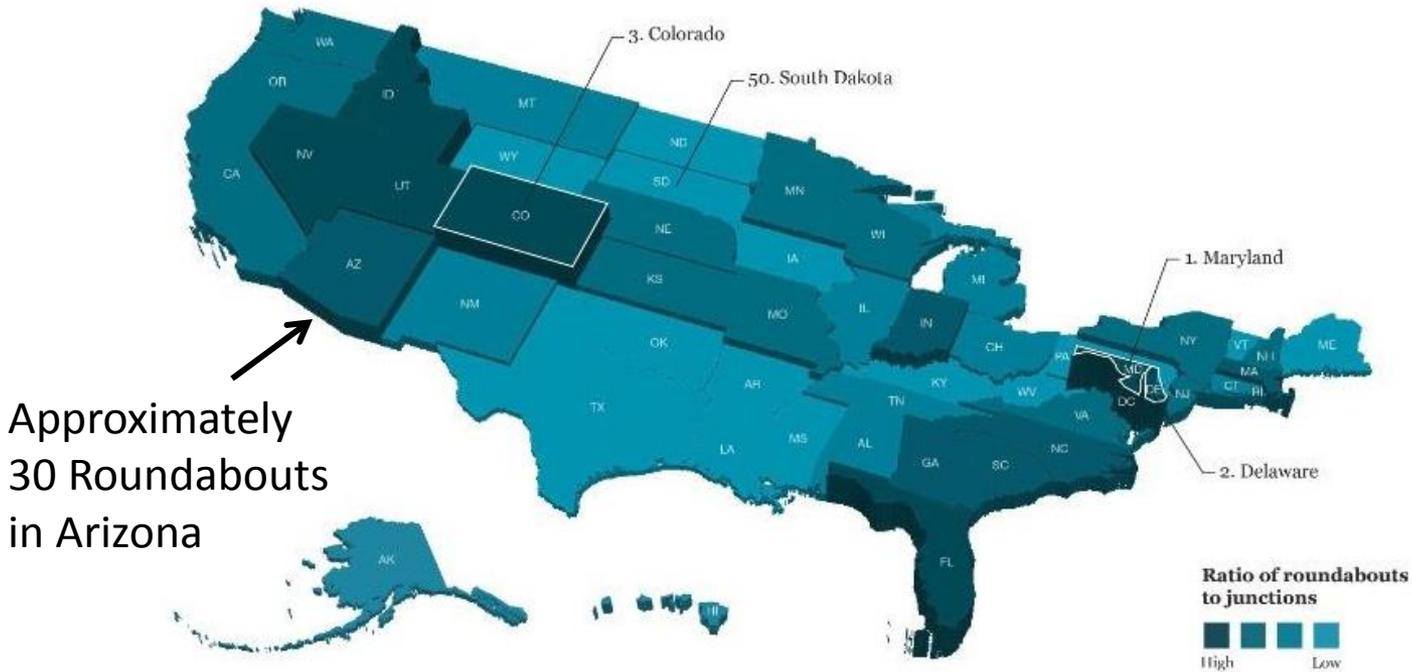
Roundabout Conversion

(click on image to play video)



Roundabout Locations

Source: Nokia's 2014 Here Maps (Graphic by Damien Hauser with ESRI)



Roundabout Locations in Pima County:

- Hardy Rd/ Calle Buena Vista (Town of Oro Valley)
- I-19 at Canoa Rd Traffic Interchange (Green Valley)
- Continental Rd/Camino Del Sol (Green Valley)

Roundabout Locations

Camino Del Sol at Continental Road in Green Valley

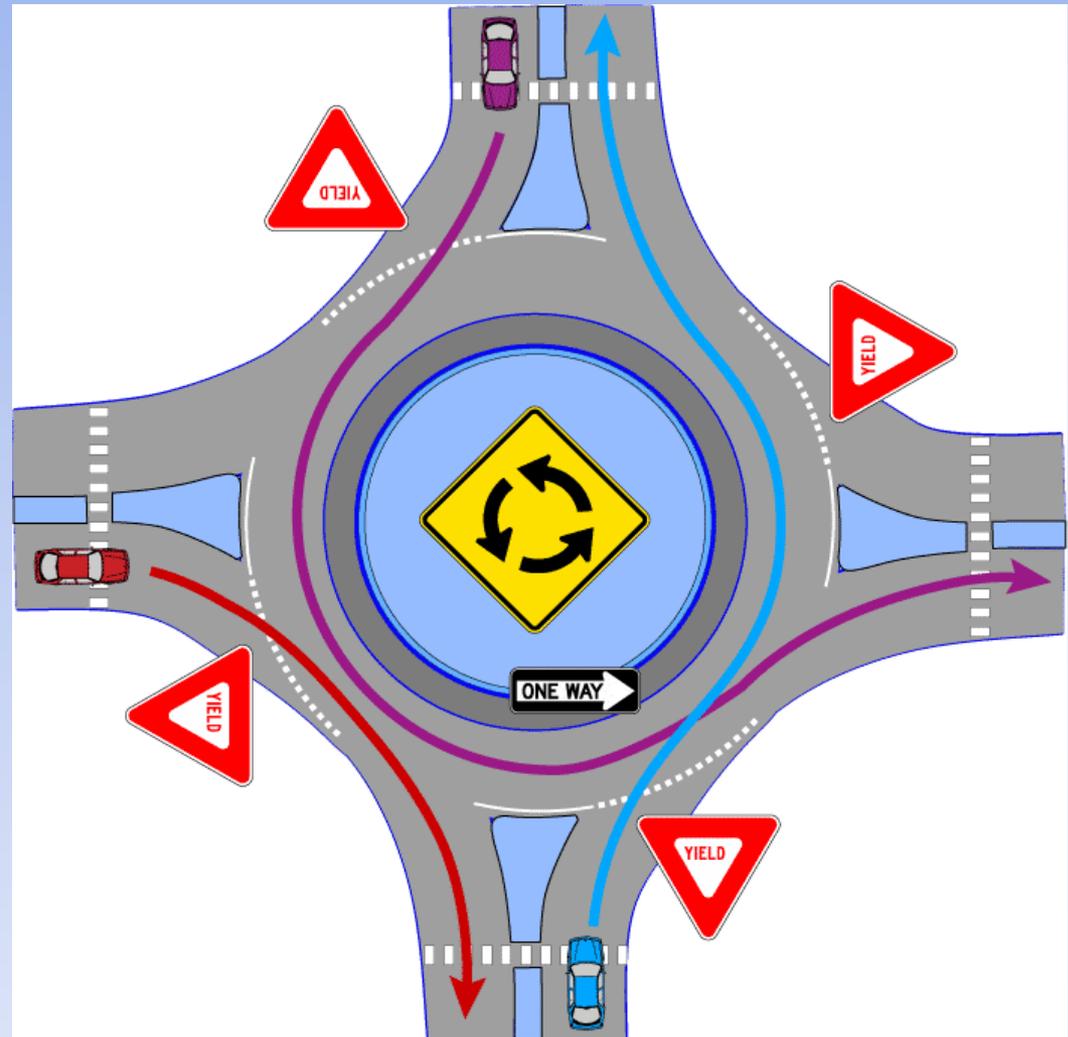


Before: 12 crashes in five years

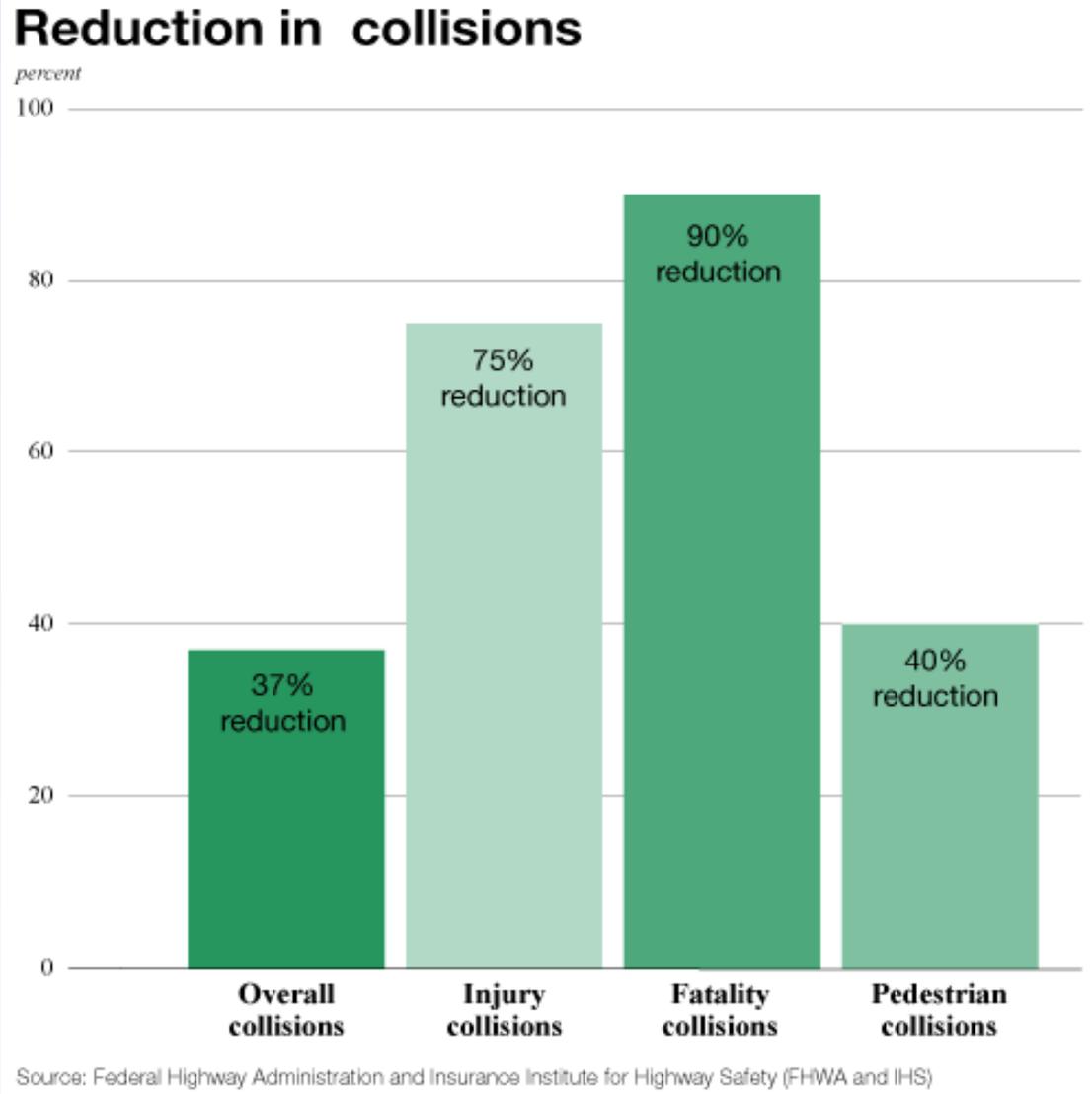
After: 0 crashes in five years

Frequently Asked Questions

- ✓ How to Use Them
- ✓ Vehicular Safety
- ✓ Pedestrian Safety
- ✓ Bicycle Safety
- ✓ Large Trucks
- ✓ Buses
- ✓ Fire Engines
- ✓ Emergency Vehicles
- ✓ Access to Businesses
- ✓ Cost
- ✓ Aesthetics



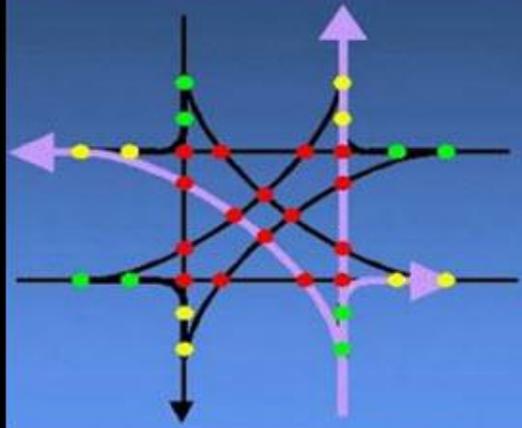
Roundabouts and Safety



Conflict Points at Intersections



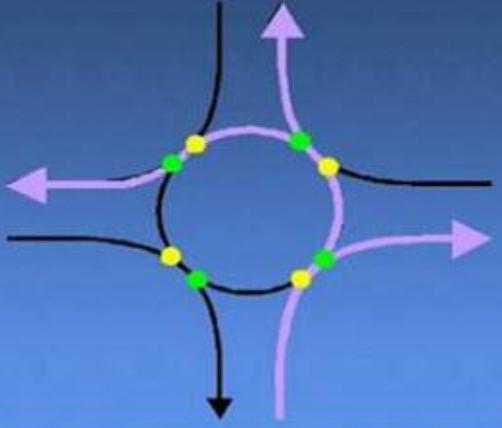
Vehicle conflict points: Conventional intersection



Conflict Types	
● Diverge:	8
● Merge:	8
● Crossing:	16
Total:	32

vs.

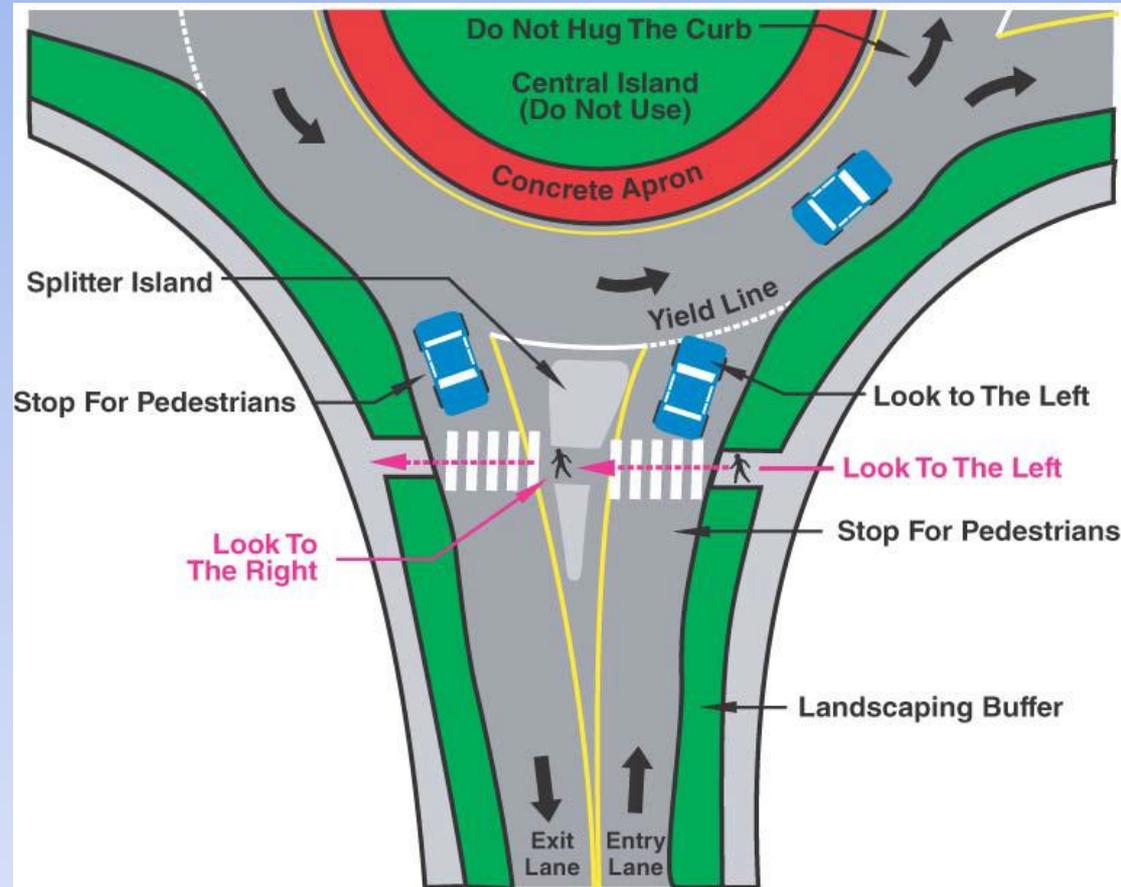
Vehicle conflict points: Roundabout



Conflict Types	
● Diverge:	4
● Merge:	4
● Crossing:	0
Total:	8

Pedestrian Safety

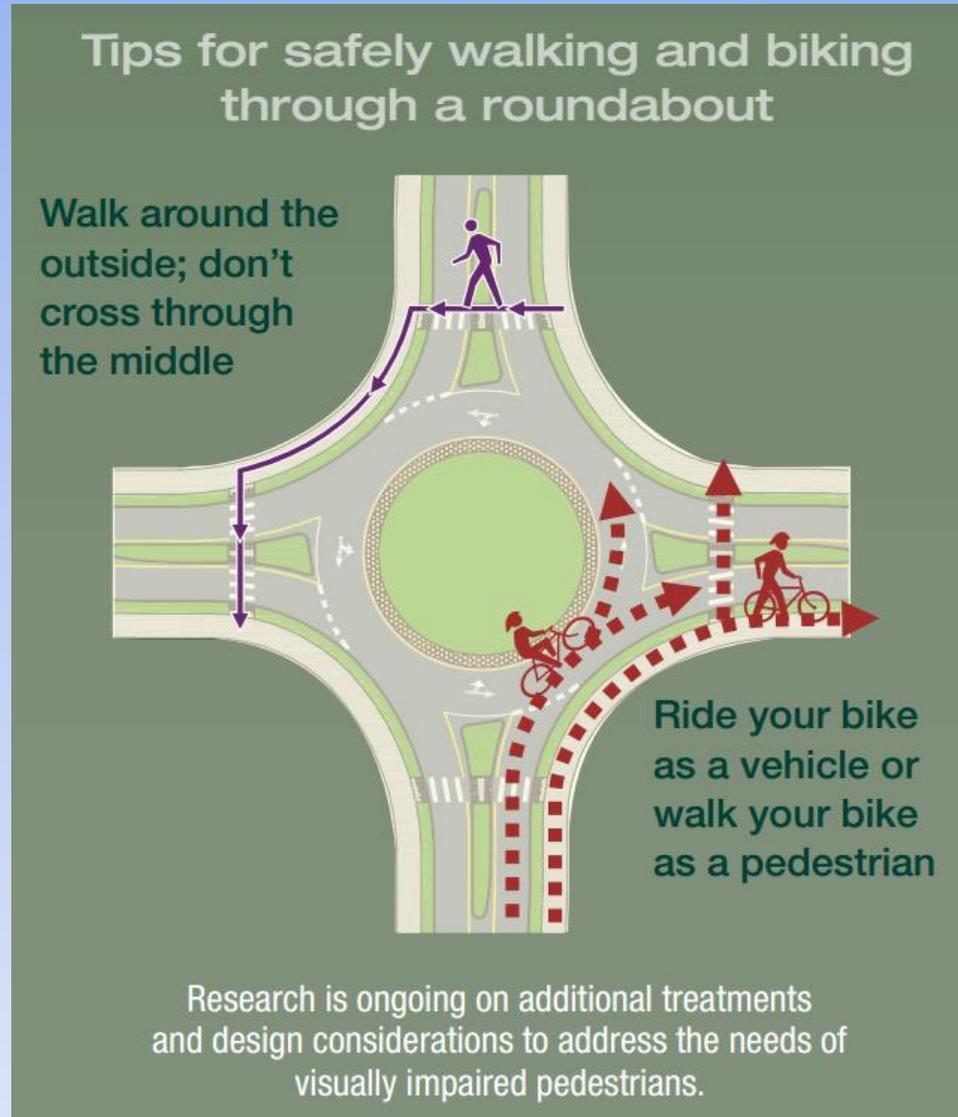
- Roundabouts are safer than signalized intersections
- Slower traffic speeds
- Two stage crossing for pedestrians
- Crosswalk set back from circulatory roadway



Bicycle Safety

TIPS for using a Roundabout:

- Riders follow the same rules as vehicles.
- Be assertive when merging with traffic.
- Riders should travel at approximately the same speed as motorists.
- Cyclists should ride in the center of the lane, not along the curb line.
- Be sure to use proper hand signals when exiting the roundabout.



Buses



104th Street & Cactus Street in Scottsdale

Semi-Tractor Trailers

(click on image to play video)



Fire Trucks

(click on image to play video)



Roundabouts and Businesses



- ***Inviting:*** roundabouts provide for green space, have little or no congestion, and provide easy access to destinations.
- ***Increase Visibility:*** Slower vehicle speeds give drivers/passengers more time to see nearby businesses.
- ***Improve Connectivity:*** Slower vehicle speeds improve access for cyclists and pedestrians.
- ***Increase Sales:*** Sales tax revenues increased 60% after roundabouts were installed.



Roundabout Cost vs. Traffic Signals



- *Initial capital cost about slightly higher*
- *Serviceable life 2x longer*
- *Annual equipment maintenance costs \$10,500 less*
- *Safety costs significantly lower*
- ***Overall life-cycle cost ½ the life-cycle cost of a signal***

Roundabouts Landscaping



More Information on Roundabouts

Pima County Department of Transportation website:

<http://webcms.pima.gov/Transportation/Single-Lane Roundabouts>

Arizona Department of Transportation website:

<https://azdot.gov/about/transportation-safety/roundabouts/overview>

Federal Highway Administration Roundabouts - An Informational Guide:

<https://www.fhwa.dot.gov/publications/research/safety/00067/000671.pdf>

NCHRP Report 672 – Roundabouts: An Informational Guide

https://onlinepubs.trb.org/.../nchrp_rpt_672.pdf

RoundaboutsUSA: www.roundaboutsusa.com

Roundabouts Resources: www.roundaboutresources.org