



# Traffic Safety Improvements Countywide for area of Linda Vista at Camino De Oeste

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Pima County Department of Transportation

# Welcomes You!

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# Project Life Cycle



*Public Input*



You are here

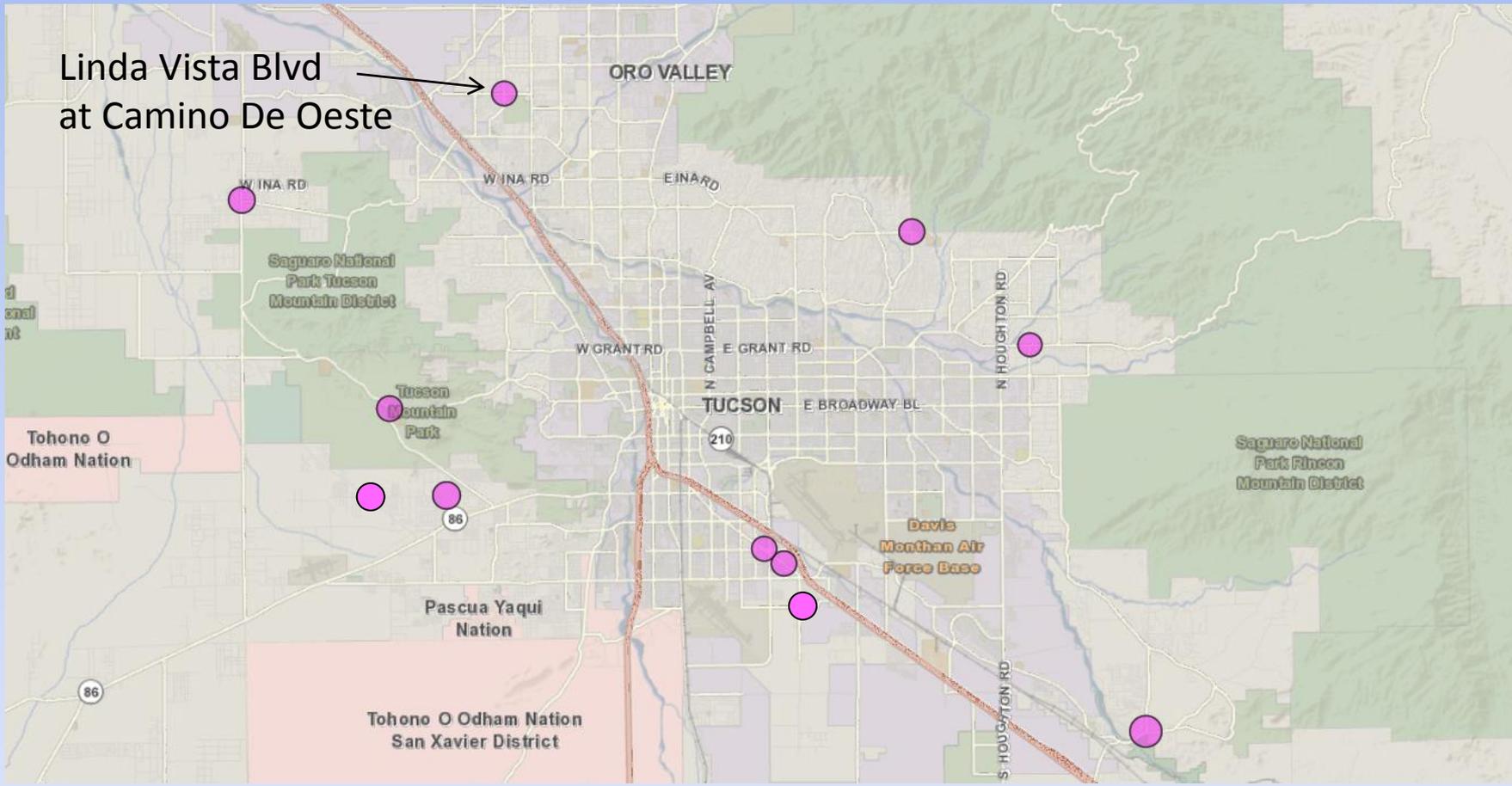


*Life Cycle of the Project Development Process*

# 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



Linda Vista Blvd at Camino De Oeste



# Traffic Operations



Linda Vista Blvd at Camino De Oeste

Safety and Capacity related issues:

- Crash History - 9 crashes total; 6 rear-end crashes, 1 loss of control  
2 angle crashes
- Average Daily Traffic (ADT) – 10,675 vpd Linda Vista Blvd  
and 1,069 vpd on Camino De Oeste
- Congested Area – Back-up on Westbound Linda Vista Blvd  
exceeds 30 vehicles

# Traffic Operations



Traffic backs-up on Linda Vista Blvd from 4-way stop at Camino De Oeste



# Traffic Operations

30 plus vehicle back-up in peak hour



# Traffic Operations



# Traffic Operations



# Possible Solutions



Linda Vista Blvd at Camino De Oeste

*Reasonable alternatives:*

- Improve intersection at Linda Vista Blvd and Camino De Oeste
- Improve pedestrian access and facilities
- Improve bicycle facilities
- Add lighting at intersection

# Intersection Types

Stop Control

Traffic Signals

Roundabouts



Hannah Olsen E.I.T

# Modern Roundabout Example



96<sup>th</sup> 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

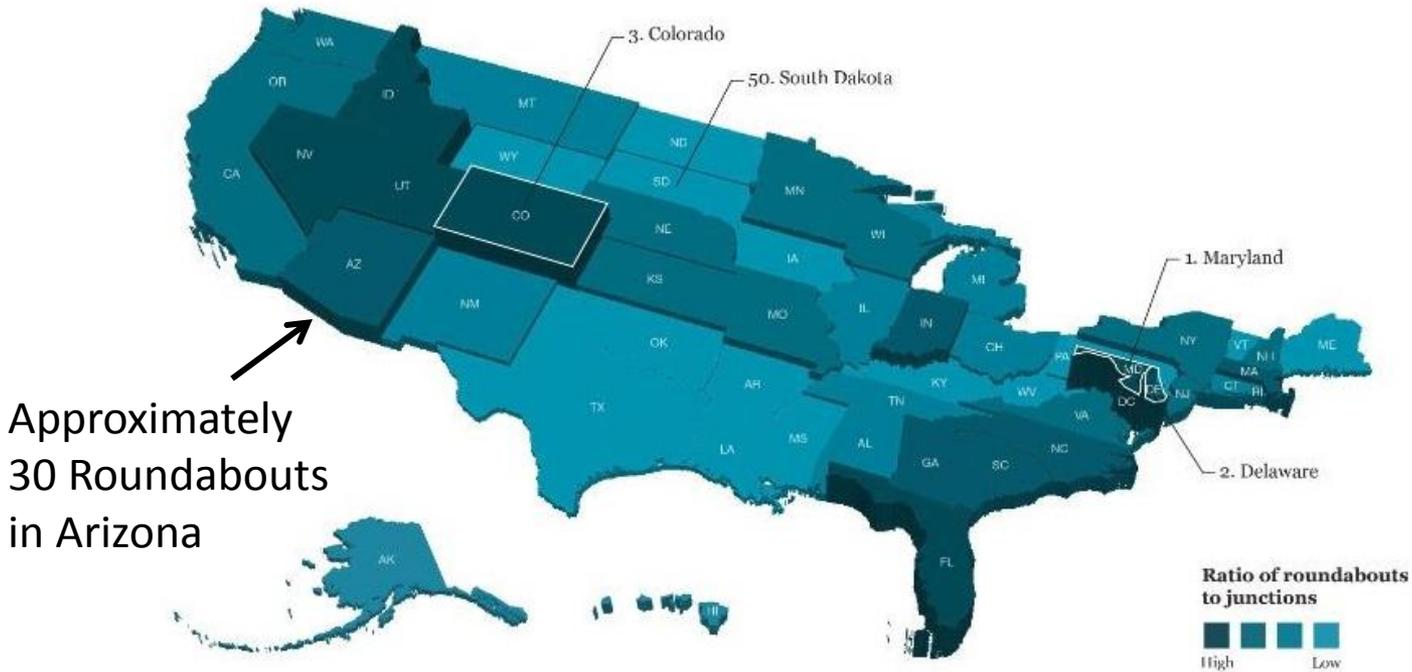
# Roundabout Conversion

(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

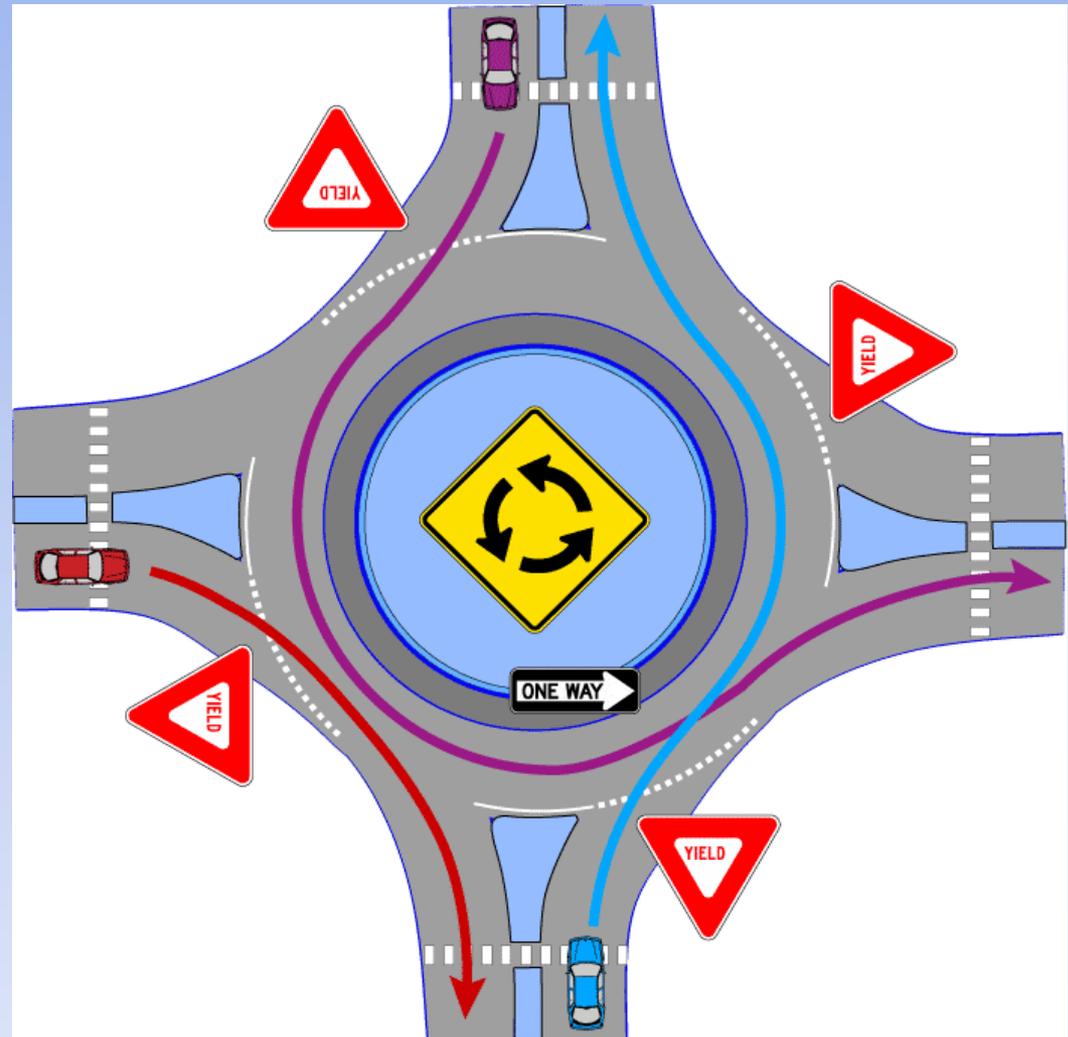


Before: 12 crashes in five years

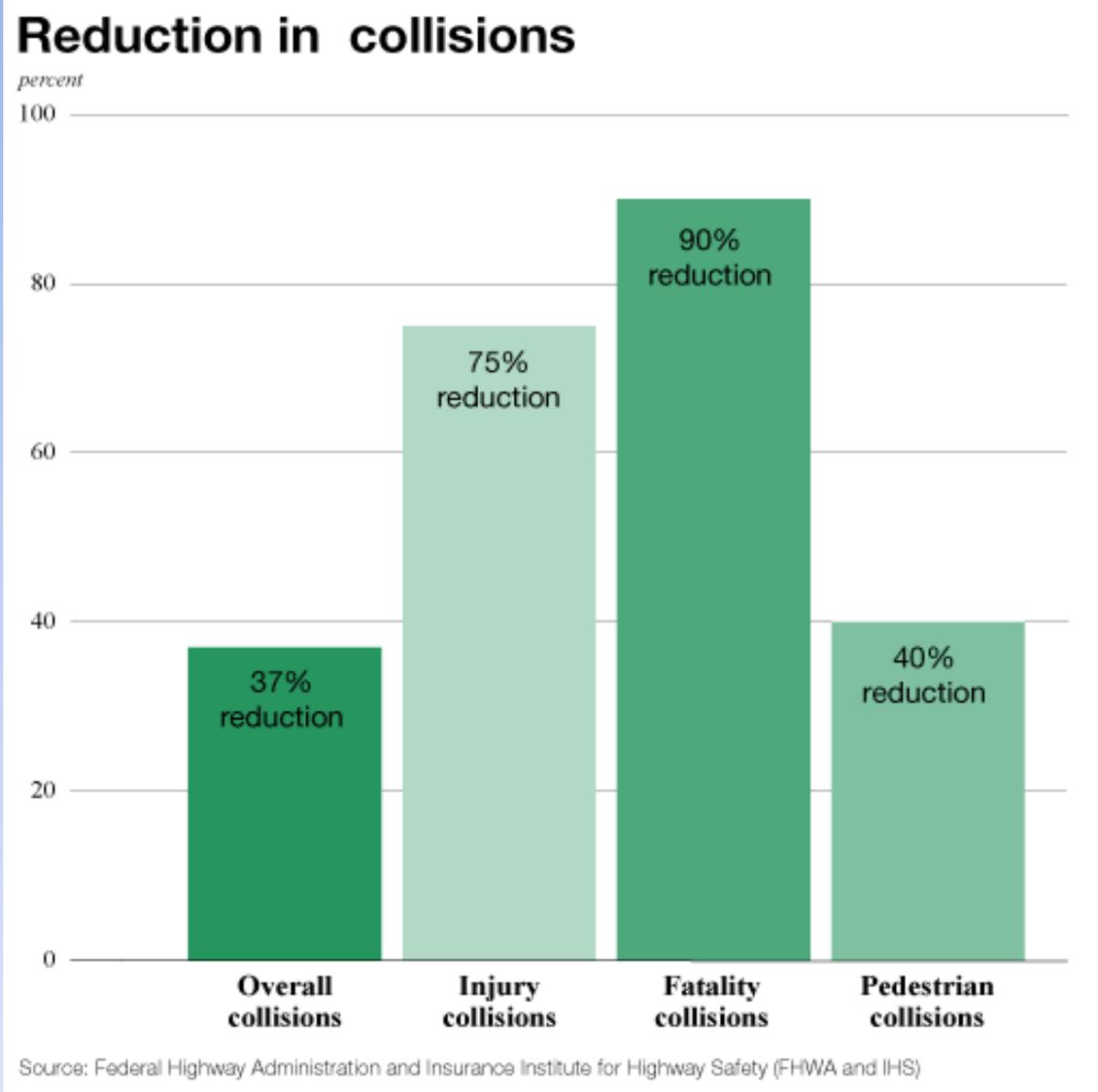
After: 0 crashes in five years

# 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



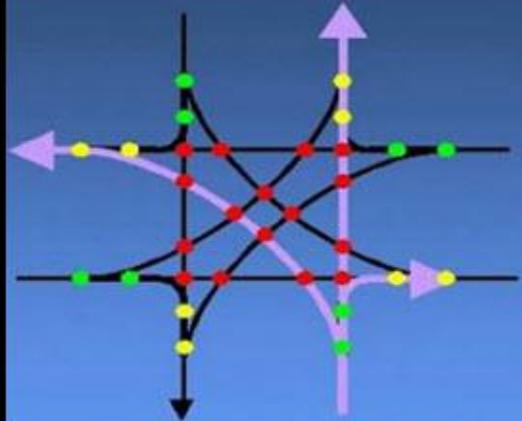
# Roundabouts and Safety



# Conflict Points at Intersections



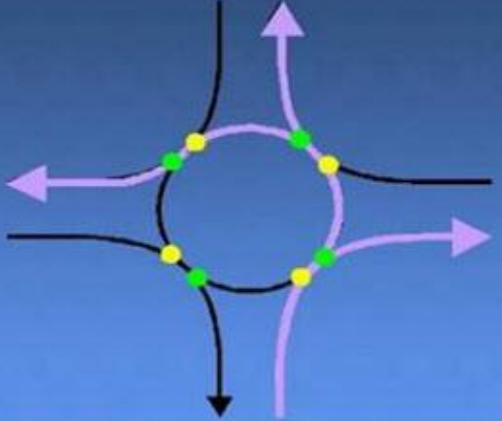
## Vehicle conflict points: Conventional intersection



Conflict Types	
● Diverge:	8
● Merge:	8
● Crossing:	16
<b>Total:</b>	<b>32</b>

vs.

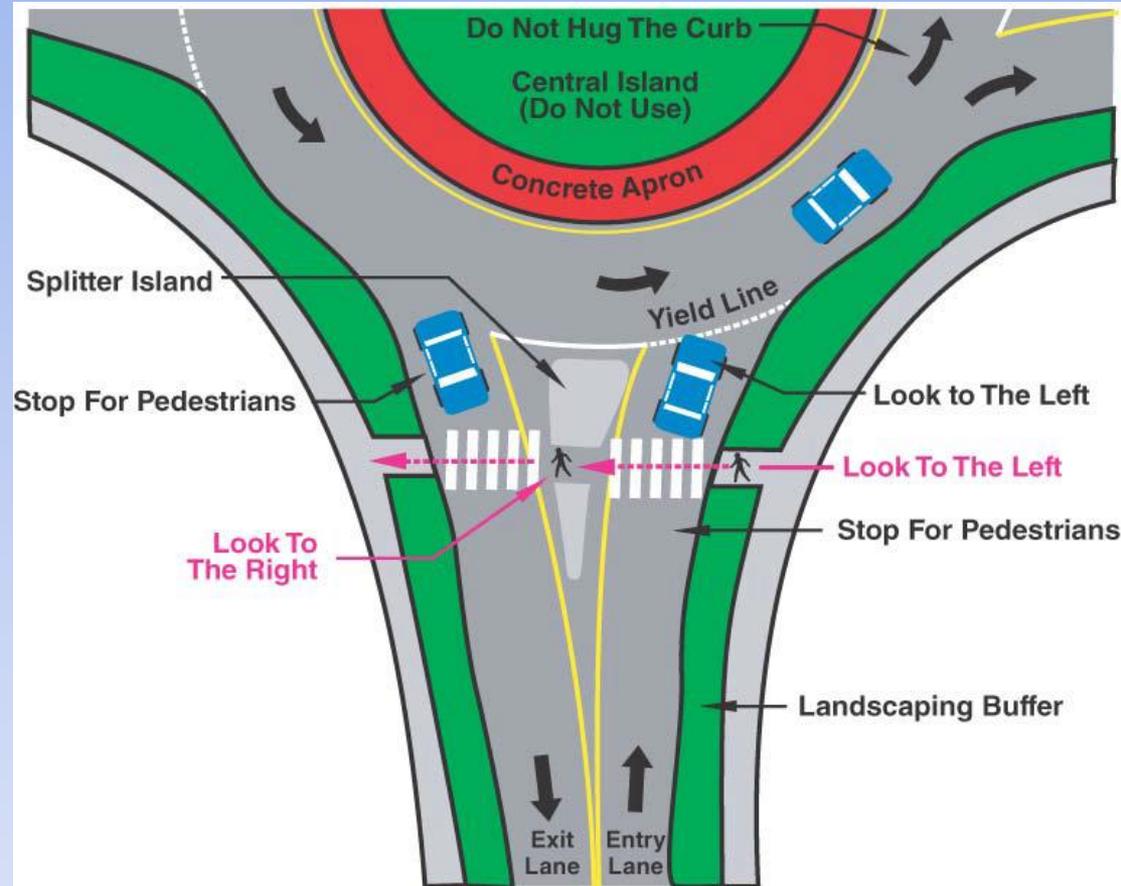
## Vehicle conflict points: Roundabout



Conflict Types	
● Diverge:	4
● Merge:	4
● Crossing:	0
<b>Total:</b>	<b>8</b>

# Pedestrian Safety

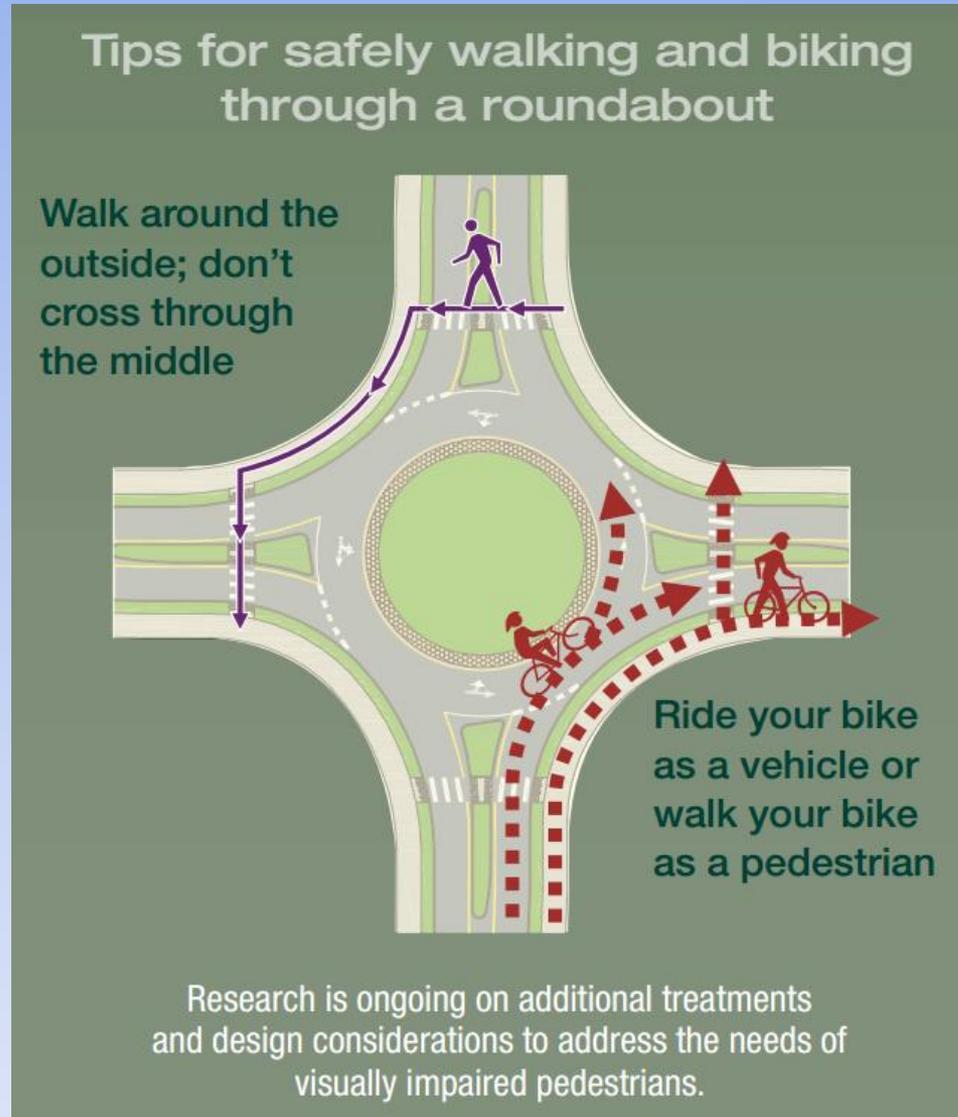
- Roundabouts are safer than signalized intersections
- Slower traffic speeds
- Two stage crossing for pedestrians
- Crosswalk set back from circulatory roadway



# 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



104<sup>th</sup> Street & Cactus Street in Scottsdale

# Semi-Tractor Trailers

(click on image to play video)



# Fire Trucks

(click on image to play video)



# Access to Businesses



- *Most business owners agree that slower speeds and safer travel enhance business*
- *Roundabouts provide better access to businesses near the intersection than traffic signals because roundabouts do not have left-turn storage lanes with raised medians*

# 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](https://onlinepubs.trb.org/.../nchrp_rpt_672.pdf)

**RoundaboutsUSA:** [www.roundaboutsusa.com](http://www.roundaboutsusa.com)

**Roundabout Resources:** [www.roundaboutresources.org](http://www.roundaboutresources.org)