



Citizens Advisory Committee (CAC)

October 21, 2014

Meeting Summary

- Approved the minutes of the September 16, 2014 CAC meeting
- Recommended approval of Resolution 2014-## amending the FY 2014/15 – FY 2018/19 Transportation Improvement Program (TIP)
- Recommended approval to direct FDOT to allocate \$160,330 from the Bicycle/Pedestrian box to a pedestrian safety and mobility study on SR A1A and \$75,031 from the Traffic Ops/ITS/Safety box to an intersection study on Belle Terre Parkway
- Received PowerPoint presentation on the 2040 Long Range Transportation Plan (LRTP) alternative land use forecast activities underway
- Received presentation on recommended priority process program changes under review by the TIP Subcommittee
- Received presentation on roundabouts
- Introduced Mr. Gene Ferguson as the new FDOT liaison
- Received FDOT report noting there no project updates to report
- Received Volusia County construction report and a handout on the Flagler County construction report
- Received TPO staff update on the Coast to Coast Summit, the budget impact of the Volusia Council of Governments closing, comments on statewide and metropolitan transportation planning and update on SunRail

*****The next meeting of the CAC will be November 18, 2014*****

Beverly Beach
Bunnell
Daytona Beach
Daytona Beach Shores

DeBary
DeLand
Deltona
Edgewater

Flagler Beach
Flagler County
Holly Hill
Lake Helen

New Smyrna Beach
Oak Hill
Orange City
Ormond Beach

Palm Coast
Pierson
Ponce Inlet
Port Orange

South Daytona
Volusia County



Technical Coordinating Committee

October 21, 2014

Meeting Summary

- Introduced new TCC members, Mr. Gene Ferguson, FDOT Liaison, and Mr. Bob Owens, Flagler County Public Transit
- Approved the minutes of the September 16, 2014 TCC meeting as amended
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Alternative Population & Employment Forecast

2040 Long Range Transportation Plan
for River to Sea TPO

October 22, 2014

Analyzing Alternatives

<h4>Constrained Trend Socioeconomic Data</h4> <ul style="list-style-type: none">Similar to the approach of previous LRTP updatesUp to date and consistent with Comp PlansCommittees supply a check for local accuracy	<h4>Land Use Alternative</h4> <ul style="list-style-type: none">Builds on the Trend ForecastOptimizes land use efficiencyCollaborative process to test opportunities
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Potential Measure of Success



An Atlanta Study measured:

- Land Use Mix
- Density
- Connectivity

Correlated to:

- Lower VMT
- More walk/bike trips
- Lower emissions

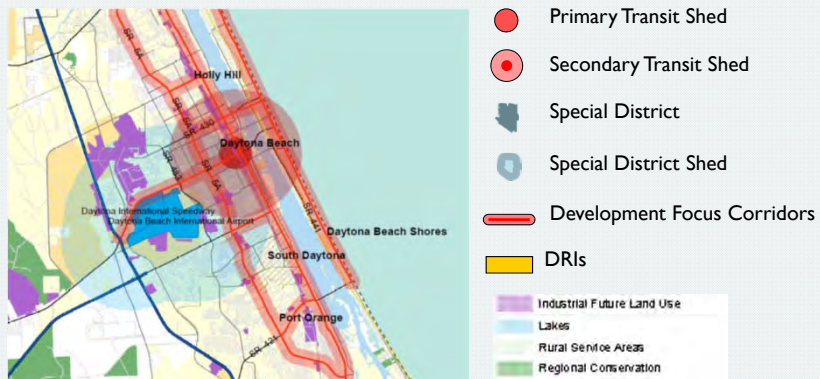
"This pattern holds true regardless of many other factors ... age, whether they had a driver's license, their household income, vehicles per household, household size, transit accessibility and regional location" - SMARTRAQ report

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The Process

Characterization Framework

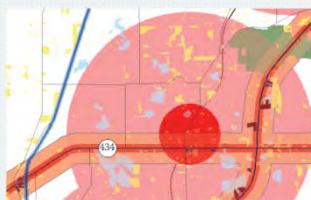
- The Characterization process identifies the most relevant characteristics of different areas within the study area



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Characterization: Centers

Make transit convenient and comfortable by promoting mixed use, higher density, and walkability near the transit stations and activity centers



- Primary Transit Oriented Development Shed
- 1/2 mile from station
- Secondary Transit Influence Shed
- 2 miles from station



Characterization: Corridors

Appropriate density, mixed use development is necessary for viable multimodal transportation.

Where:

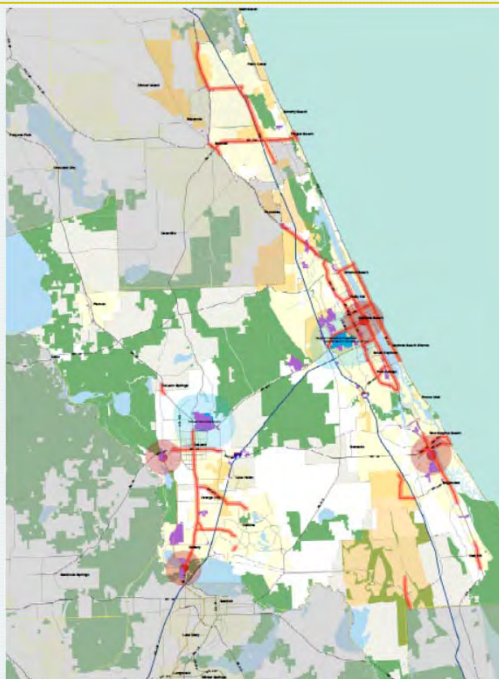
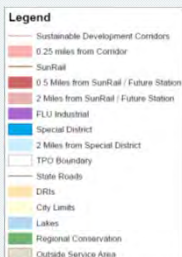
- Along transit routes
- Along corridors with redevelopment opportunity
- Along future transit-ready corridors

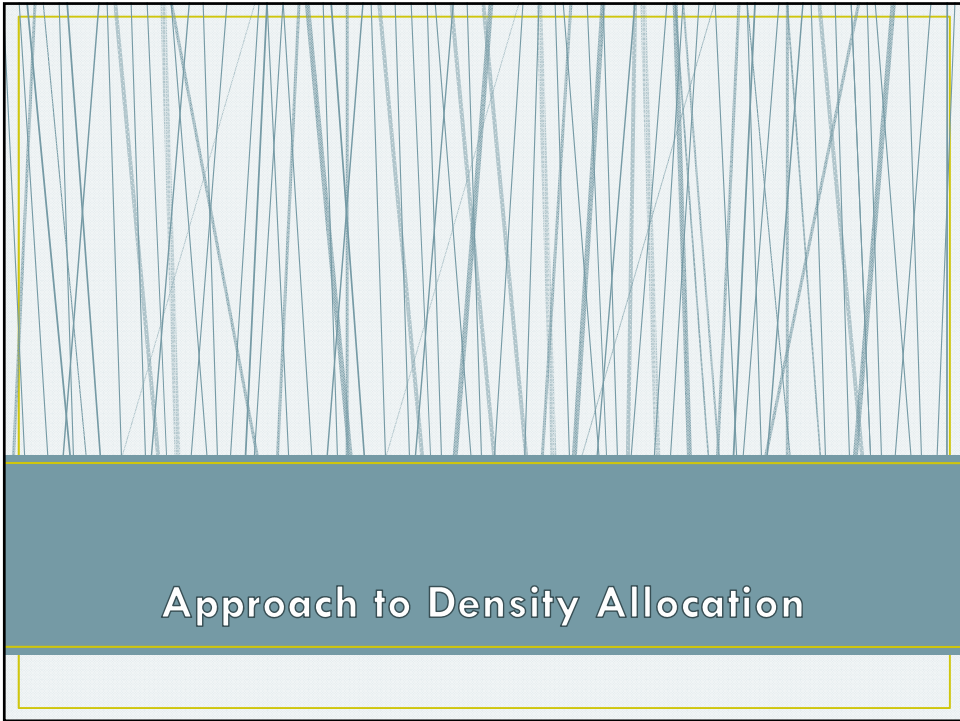


1 to 4 stories - 12 units/acre - 20 jobs/acre
Primarily surface parking with one 2-level deck.

Land Use Workshop

The land use working group has been helping to identify characterization areas.





Approach to Density Allocation

Density examples

New England Manor
402 W. Welbourne Ave. & 433 W. New England Ave.
Winter Park, FL 32789

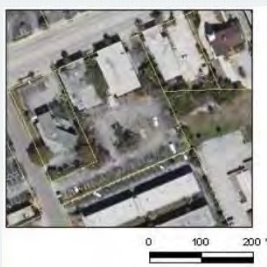
Density: Medium
Total Acres: 1.22 (53,310 s.f.)
Units: 40
Units/Acre: 33
Retail: 5,708 s.f.
Building Size: 2-3 stories
Employees per Acre: 12
Estimated Total FAR: 1.08
Parking: Approximately 30 surface lot spaces and 16 covered surface lot spaces



Density examples

Fountain Square Shops
 142 E. Granada Blvd. (Florida 40)
 Ormond Beach, FL 32176

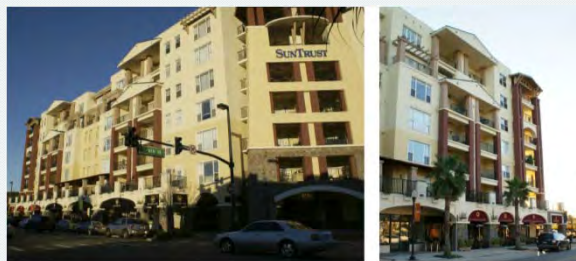
Density: Medium
Total Acres: 1.1 (48,397 s.f.)
Retail Space: 22,610 s.f.
Office Space: 1,066 s.f.
Building Size: 2 stories
Employees per Acre: 55
Estimated Total FAR: 0.49
Parking: 50 surface lot spaces



Density examples

Wellesley Condos
 2305 Edgewater Drive

Density: High
Total Acres: 2.14
Building Size: 7 stories, 75' tall
Total Units: 147
Units/Acre: 69
Retail Space: 7,500 s.f. bank
 12,500 s.f. other
Employees/Acre: 23
Estimated Total FAR: 2.1
Estimated Cost: \$1.5 million



Typical Densities and Intensities

Intensity

Category	Average Story Height
Downtown	10-12 stories
High	5-8 stories
Medium	3 stories with structured parking
Medium-Low	3 stories with surface parking
Low (Residential)	Single Family and Townhouse

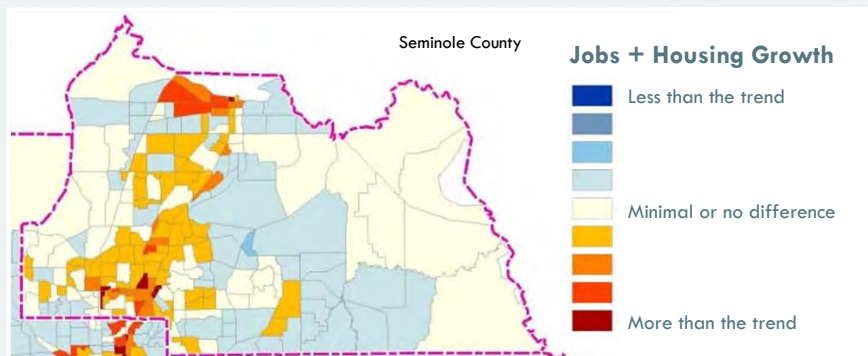
Other categories

Special Districts
Industrial
Trend TAZ-based
Rural Trend
Major Existing Plans



Examples of Results

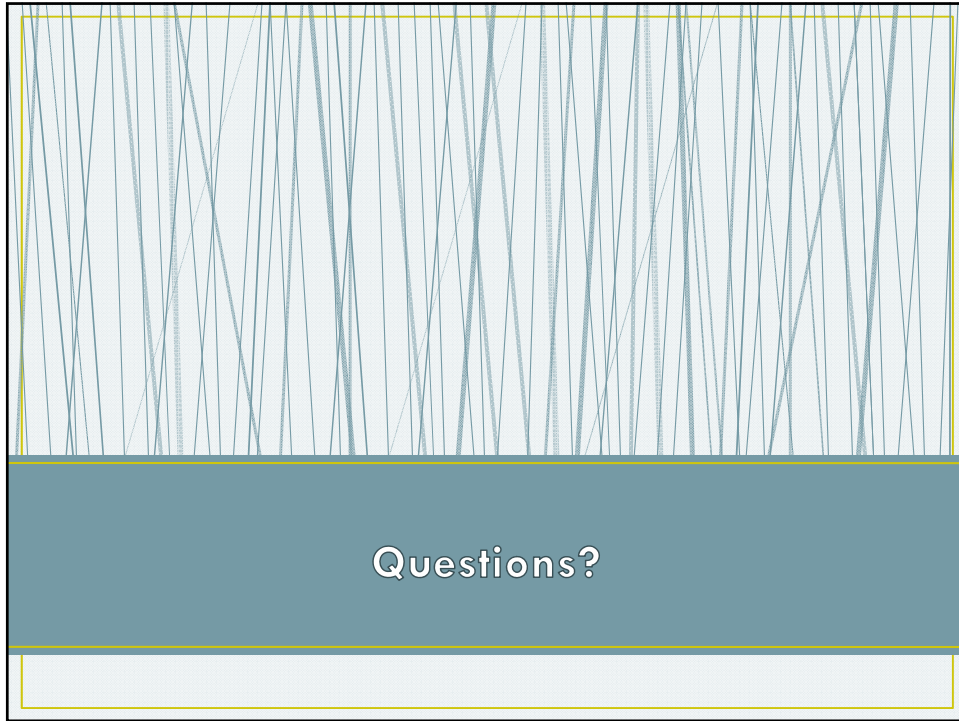
Comparing Results to the Trend



Past Results

Typical results from previous studies

Goal	Alt.
Reduce Congestion	✓
Improve Air Quality	✓
Reduce Energy Dependency	✓
Improve Safety	✓
Improve Accessibility/Reduce Vehicle Dependency	✓
Improve System Operating Efficiency	✓



Questions?



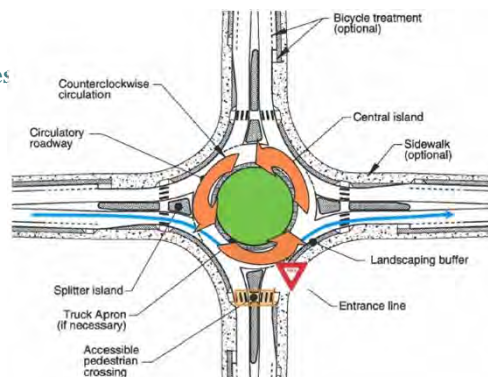
Roundabouts 101

Martha Moore, P.E.
 Ghyabi & Associates
 October 10, 2014



What is a Roundabout?

- Yield control on entry
 - Priority to circulating vehicles
- Slow, consistent speeds
- Landscaping
- Pedestrian access & crossing
- No parking
- Direction of circulation
 - Channelization



What is not a modern roundabout?



Modern roundabouts vs. traffic circles

- Yield on entry – first rule (UK 1966)
- Counter-clockwise circulation
- Lower speeds necessary - deflection
 - Splitter islands
 - Central island
- Pedestrian movements restricted to crossing legs
- No parking

First Roundabout in USA – Summerlin, NV early '90s



Types of Roundabouts and Typical Volumes

Type	Typical Diameter	Typical Entering Volumes
Mini-roundabout	45-90'	15,000 ADT
Single lane	90-180'	34,000
Multi-lane	150-300'	45,000-70,000



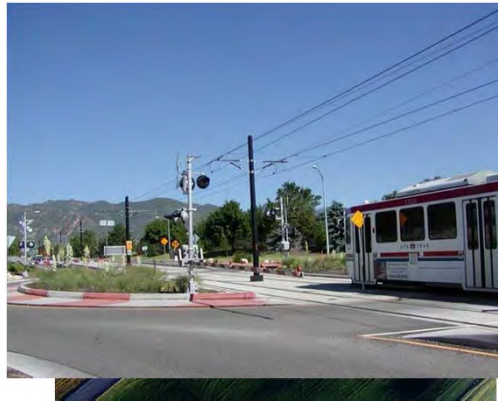
Roundabouts vs. 4 Way Intersection

- The “Mythbusters” TV show did a test comparing a roundabout to a 4 way stop intersection.
- During two 15-minute tests, 385 vehicles passed through the 4 way intersection.
- During the same time period, 460 vehicles passed through the roundabout intersection.
- In this test, the roundabout improved traffic flow by 20%.

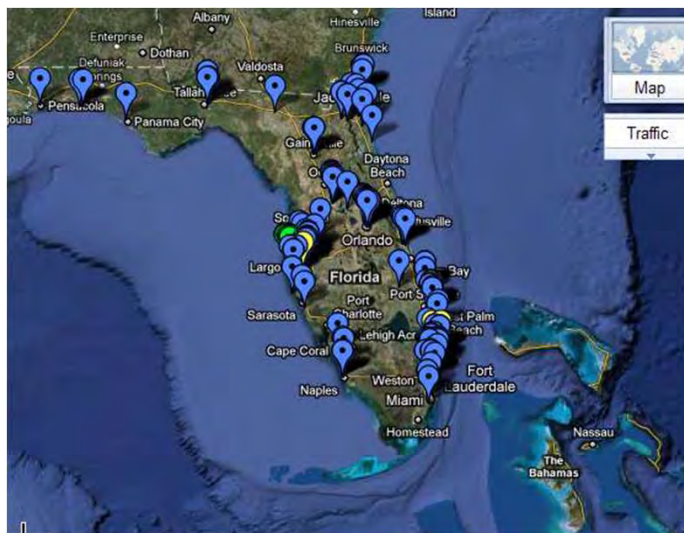


Roundabouts are being utilized under a wide variety of conditions

- Freeway interchanges
- High speed rural
- High volume conditions
- High pedestrians
- High truck volumes
- Awkward geometry
- Near schools
- Gateways into lower speed facilities
- Light rail corridors



Florida Roundabouts - About 280 in Florida



Urban Roundabout Examples

**Multi-lane roundabout in
Clearwater, FL**



**Single lane roundabout in
Jacksonville, FL**



Key roundabout advantages - Better use of intersection space and time

- Safety
- Delay
- Emissions
- Fuel Savings
- Aesthetics
- Flexible to low volumes/high volumes (doesn't require timing plans)
- Low maintenance

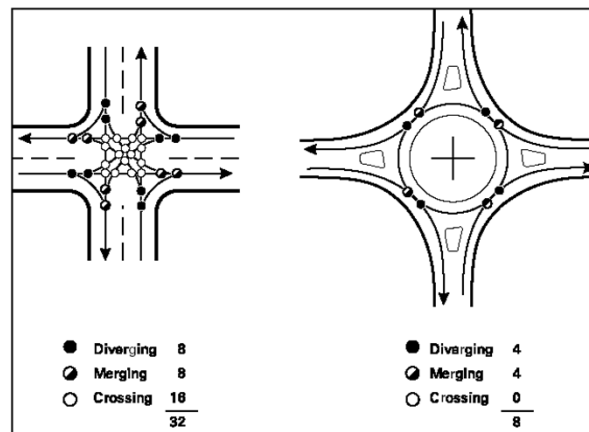


Safety Advantages

- Slower speeds
- Simplified decision making
- Over 90% reduction in fatalities
- 76% reduction in injuries
- 35% reduction in total crashes



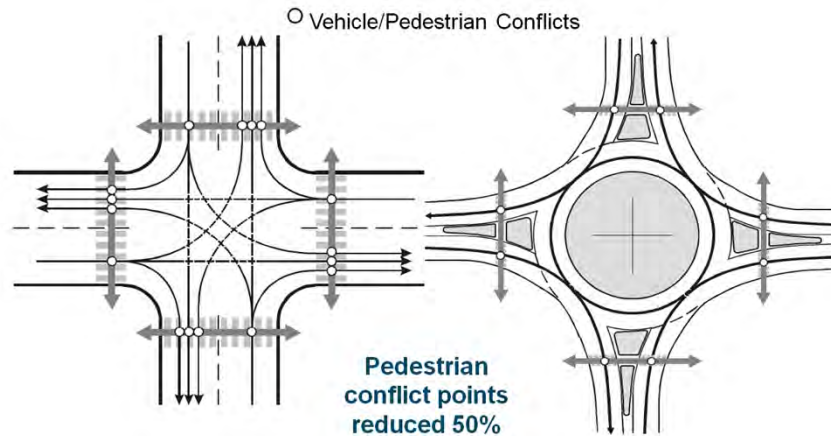
Comparison of Vehicle Conflict Points



75% fewer vehicle conflict points



Comparison of Pedestrian Conflict Points

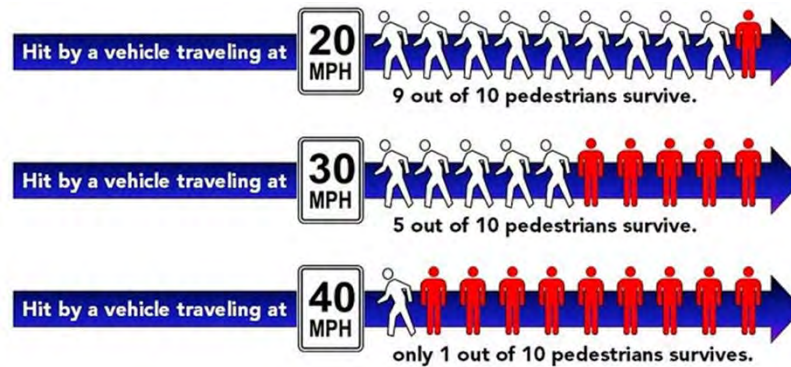


Safety - Increase Pedestrian Safety

- Shorter crossing distance
- Pedestrian only looks one direction
- Drivers at signals watch the light
- Drivers at typical intersection tend to look left and turn right
- Pedestrian crossing separated from intersection – allows the driver to pay more attention to the pedestrian



Lower speeds due to Roundabouts lead to less pedestrian deaths



Pedestrian Safety Issues

- Disadvantage is that vehicles aren't completely stopping
- Possible issues with visually impaired pedestrians



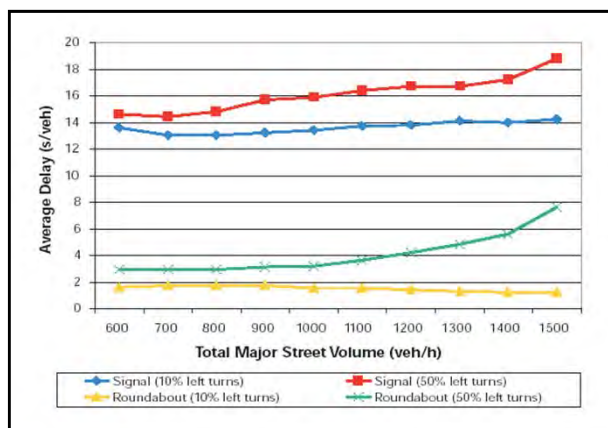
Advantages - Reduced Delay

- **Delay is the difference between**
 - **Travel time with no intersection control**
 - **Travel time with intersection control**
 - Includes slow down, stop, and speed up time
- **Always better than AWSC**
- **Usually better than TWSC if minor road volumes are close to major road volumes**
 - 50/50, 60/40, 70/30
- **Usually better than signal**



Delay Reduction - Signalized

Lower Delay = Lower Emissions



Roundabouts Save fuel & Reduce Emissions

- At least two studies have noted that roundabouts can reduce fuel consumption by about 30%.
- In one study, replacing a signal with a roundabout reduced CO emissions by 29% and Nitrous Oxide emissions by 21%.



Where are Roundabouts Appropriate?

- Entering volumes less than 8,000 vph
- Roughly same functional classification
- Entry volumes balanced = higher capacity
 - The upper capacity limits of a roundabout will be higher with balanced flows.
- All levels of pedestrian volumes.



Locations Not Recommended for Roundabouts

- Corridors with a well operating coordinated signal system
- Where satisfactory geometric designs can't be provided
 - Deflection
 - Inscribed circle diameter
 - Roadway width
 - Approach grades



Where Roundabouts May Excel

- Locations with unusual geometry or number of legs
- Rural intersections with high crashes or high delay
- Intersections with high amounts of left turns on one or more legs
- Interchange locations with right of way, bridge width, or bridge crest restrictions
- Near schools or playgrounds
- Through small towns or commercial corridors



Design for Appropriate Vehicle - Critical at Planning Stage

Poor Design



Good Design



Public Attitude Toward Roundabouts Before and After Construction

Attitude	Before Construction	After Construction
Very Negative	23%	0%
Negative	45%	0%
Neutral	18%	27%
Positive	14%	41%
Very Positive	0%	32%

Source: NCHRP Synthesis 264



Roundabouts and the Visually Impaired

- According to the Federal Highway Administration, people who are visually impaired may experience difficulty using roundabout crosswalks.
- This problem consists of three parts:
 - Motorists do not yield to pedestrians where the crossing is not signal controlled.
 - At roundabouts, noise from circulating traffic may make aural detection of gaps difficult.
 - Gaps large enough to be aurally detected may be infrequent
- The American with Disabilities Act requires that all new and modified intersections, including roundabouts, be accessible to and usable by people with disabilities.



Questions?

