ROUNDABOUTS AND ACCESS MANAGEMENT
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With recent emphasis on the use of roundabouts – whether alone or along a corridor – there are increasing questions about driveway spacing and access management near roundabouts.
**Research Objectives**

• To review literature on roundabouts and their applications throughout the United States to understand how access management, capacity, and safety are addressed in other states.

• To recommend changes in Florida’s guidance documents, including access management resources, Median Handbook, and Driveway Information Guide.
Specific Questions to be Addressed

• How do states across the country address access management and driveway spacing near roundabouts?

• Can the differences in safety and capacity be associated with access characteristics?

• How should the state of Florida modify their guidance documents to address roundabouts, access management, and driveway spacing?
Roundabout & Access Management Literature Key Findings

• Significant **lack** of literature on access management relating to capacity and safety near roundabouts.
Most safety literature used short periods of study time, lacked location variation, and included small sample sizes.

Most comprehensive safety study is Rodegerdts’ 2007 roundabout analysis of 310 roundabouts.

Very little literature examining access management and roundabout safety.
• Lack of literature examining the impacts of roundabouts in corridors, unbalanced traffic conditions, pedestrians, bicycles.

• Lack of literature examining the effects of access management on roundabout capacity.
• 15 of the 50 states have significant roundabout guidance
  • Arizona, Florida, Kansas, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, New Hampshire, Pennsylvania, Virginia, Washington, Wisconsin

• 9 of the 50 states have significant access management guidance
  • Florida, Kansas, Indiana, Iowa, Kentucky, Maryland, Minnesota, Virginia, Washington

• High variation across the states with regard to guidance type and use of roundabouts in the state
Other Literature Findings

• Importance of roadway classification in developing driveway guidance/access management guidelines.

• Florida has a large amount of guidance compared to other states with a Roundabout Handbook, Median Handbook, Driveway Spacing Guide, a Bicycle/Pedestrian report, and a Driveway Information Guide.

• However, very little on both Roundabouts AND Access Management/Driveway Guidance.
Field Data Collection to Identify:

- Access management issues.
- Relationships between crash patterns and specific roundabout characteristics.
- Relationships between access management, capacity, and safety at roundabouts.
219 roundabouts were identified in FDOT’s 2011 Roadway Characteristics Inventory (RCI)

- 10 on state roads
- 209 on non-state roads

Additional 71 roundabouts on other non-state roads were identified from Google Earth manually.
• Extracted crashes within 500 ft of each 219 roundabout location

• 3,163 crashes in 2007-2011

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<td>616</td>
<td>619</td>
<td>679</td>
<td>652</td>
<td>597</td>
<td>3,163</td>
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• Downloaded police reports for these crashes
Crash Locations on Google Maps

Nassau County; Roadway ID: 74110100
Police Sketches
Police Description

V1 attempted to negotiate the roundabout at the intersection of Sadler Rd. and South Fletcher Ave. While doing so, a witness observed the driver of V1 strike the outer curb on the east side of the intersection. The driver of V1 then struck the west side curb of the northbound lane exiting the roundabout. Upon striking the curb, the driver of V1 stalled the vehicle. The driver of V1 then restarted the vehicle and aggressively accelerated losing control of the vehicle striking V2 in the right rear with the front of V1. The driver of V1 had a small cut on the bottom of his lip. V1 was checked out and released by rescue on the scene.

Upon making contact with the driver of V1, I detected the strong odor of an alcoholic beverage on or about V1's person. While interviewing the driver of V1, he was noticably unsteady on his feet as well as having slurred and delayed speech. The driver V1 submitted to field sobriety exercises to which he performed poorly.

The driver of V1 was cited for Driving without a driver's license (never had one), D.U.I., and no proof of motor vehicle insurance.

There is no further information to report at this time.
Sideswipe Crashes
More Sideswipe Crashes
Vehicles Lost Control
Involved Large Vehicles
Example Questions for Safety Analysis

- Do specific driveway and median conditions (e.g., proximity of driveway and median opening, direct vs. indirect driveway connection) contribute to certain types of crashes involving access traffic?

- Does the presence of driveways and median openings result in more severe crashes?

- What are the impacts under different traffic conditions?

- Have there been a significant number of crashes involving pedestrians near roundabouts and how was safety impacted when pedestrian crossings are affected by driveway locations?
Selected Roundabout Study Sites

Legend
- **Selected Sites**
- **Potential Sites**
- **Florida County Boundaries**
Selected Roundabout Study Sites

The State of Florida

Legend
- Roundabout Location
- 17
- rural
- suburban
- urban
- County Boundaries

Miles
0 25 50 100 150 200
Selected Roundabout Sites
Selected Roundabout Sites
Selected Roundabout Sites
Next Steps

- Site visits to the 18 roundabout sites will be ongoing through May 2013 to collect data and observations
  - Crash data analysis
  - Site safety analysis
  - Capacity analysis
- Ongoing interviews with roundabout experts
- Final report should be completed by December 2013
Questions?

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