Access Issues and Mitigations at Roundabouts

Thomas G. Blust, P.E.
Director of Engineering
Road Commission for Oakland County, MI
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Access Issues

- Geometrics may be confusing
  - Locating crosswalk
  - Aligning to cross
  - Deciding when to cross
- Constant traffic noise in the circle
  - Masks noise from approaching vehicles
  - 2\textsuperscript{nd} or 3\textsuperscript{rd} lane yielding?
- Sometimes- fewer, shorter Gaps on some legs
Example Mitigation Measures

- Landscaping for Wayfinding
- HAWK (High Intensity Activated Crosswalk)
- RRFB (Rectangular Rapid Flash Beacon)
- Elevated ("Tabletop") Crosswalk
- Alternate Location

- Also – Rumble Strips, Bollards, In-pavement lighting, etc
RRFB
Alternate Pedestrian Routing
RCOC’s PHB and RRFB Study

- Western Michigan University
  - Dept of Blindness and Low Vision Studies
- North Carolina State University
  - Inst. For Transp. Research and Educ. (ITRE)
- Accessible Design for the Blind
- Kittleson & Associates
RCOC’s PHB and RRFB Study

- Twin 3x2 Lane Roundabouts
- Approximate ADT = 42,000
- Peak Hour Flow = 1700 vph
Cost Comparison: HAWK and RRFB (3X2 Rbt.)

**HAWK:** $247,000
- 20 Signal Heads
- 8 Signal Pedestals (poles)
- 4 Cantilever Signal Poles (for 3 in. legs)
- 16 Push Buttons
- Control Cabinet, wiring, etc.

**RRFB** $85,000
- Ped Signs with RRFB
- 16 Push Buttons
- Wiring, conduit, etc.
HAWK, Driver Yield Rates
(on Solid Red Phase)

- 2 Ln. Entry  95%  (5%)
- 2 Ln. Exit  87%  (13%)

- 3 Ln. Entry  94%  (6%)
- 3 Ln. Exit  69%  (31%)
RRFB Driver Yield Rates

- **2 Ln.**
  - Entry: 83% (Blind) (17%)
  - Exit: 71% (sighted) (29%)

- **Did NOT Yield**
  - Entry: 83% (Blind) (17%)
  - Exit: 71% (sighted) (29%)

- **Exit**
  - 50% (Blind) (50%)
  - 22% (sighted) (78%)
RRFB Driver Yield Rates

- 3Ln. Yield (Did Not Yield)
  - Entry 73% (Blind) (27%)
  - 47% (sighted) (53%)
- Exit 27% (Blind) (73%)
  - 16% (sighted) (84%)
From RCOC’s Comments on PROWAG

• **Requiring** PHBs at multi-lane roundabouts may have negative consequences:
  – False sense of security to pedestrians
  – Low driver Yield Rate = ????
  – Requiring PHBs will stifle research on alternative treatments which may prove more effective
Pedestrian Accessibility at Multi-lane Roundabouts

• **Accessibility** without **Safety** is not Acceptable

• **We Can and Must Find Better Solutions!**
RCOC HAWK and RRFB Study 2011

Available on line at:
• rcocweb.org
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OR
rcocweb.org
-search for “HAWK Study”