

TRB Committee on Roundabouts ANB75
2013 Annual Meeting
Wednesday, January 16, 2013, 2:30pm- 6:00pm,
Washington, DC (Marriott Wardman Park, Virginia C)
Meeting Minutes

COMMITTEE SCOPE: The TRB Committee on Roundabouts is concerned with all factors encompassing modern roundabouts. The Committee provides focus within TRB on current issues and future research needs pertaining to modern roundabouts. It serves as a forum for discussions about roundabout research, projects, and policy for all interested stakeholders; identifies research needs and develops research problem statements to meet the needs; and facilitates the exchange of knowledge by various media, meetings, and conferences.

AGENDA:

1. Call to Order (Gene Russell, Chair)
2. Self-Introductions (All present)
3. Comments from the Chair (Gene Russell)
4. Approval of Mid-Year and/or Previous Minutes (Marcus Brewer, Secretary)
5. TRB Report/Comments (Rick Pain, Bernardo Kleiner if/when they arrive)
6. Research Subcommittee & Research Mini-Workshop (Phil Demosthenes)
 - a. Status of RNS and submissions to NCHRP
 - b. Mini-Workshop (15 to 20 minutes)
 - c. Future *working* subcommittee –Who? How?
7. Ongoing Research:
 - a. NCHRP 3-78B (Howard McCulloch – New Chair)
 - b. FHWA (New studies: Roundabout Capacity, RRFB & Safety (Jeff /Hillary)
 - c. Kansas State Business, OSOW, State Routing (Gene)
 - d. NCHRP Project 3-100 Evaluating Performance of Roundabout Corridors (Lee Rodegerdts)
 - e. Signing and Marking (Mark Johnson)
 - f. Others?
8. Other Subcommittee Reports:
 - a. Human Factors workshop recap and future efforts (Janet Barlow)
 - b. Committee-sponsored sessions (Brian Walsh/Hillary Isebrands)
 - c. Video Theatre (Brian Walsh)
 - d. Sunday free workshop recap (Mark Lenters)
 - e. Communications Coordinator & Web Site (Marcus Brewer)
 - f. Subcommittee on Liaison (Bastian Schroeder)
 - g. Webinars (Gene Hawkins and Mark Johnson)
 - h. Truck Issues (Peter Lynch)
 - i. Roundabout Guide Update (Lee Rodegerdts)
 - j. Strategic Planning (Marcus Brewer)
 - k. Younger Member activities (Robert Rescot)
9. 2014 International Conference, Seattle, April 16, 2014
10. Awards

- a. Frank Blackmore Award, presented to Bernard Guichet (Gene Russell – to be accepted by Joe Bared; video recorded by Ken Sides)
 - i. Background
 - ii. Instructions for future nominations
 - b. ANB75 Best Paper Award (Gene Russell)
- 11. BREAK- 15 minutes
- 12. SCHEDULED PRESENTATION BIM in Intersection Design; Considering Post-Construction Operational Factors in the Design of Roundabouts (P13-6837), Mike J. Hutt, Savoy Computing
- 13. Agency Liaison Reports:
 - a. NCUTCD (Lee Rodegerdts or others)
 - b. ITE (Hillary Isebrands)
 - c. AASHTO (Jim Brewer)
 - d. FHWA (Jeff Shaw, Mark Doctor, Ed Rice, Joe Bared, or others)
 - e. NCHRP (Ray Derr or others)
 - f. ASCE/TD&I (Gene Russell)
 - g. TAC/ Canada (Keith Boddy)
- 14. International Issues of Interest
 - a. Germany: Dr. Werner Brilon
 - b. Australia: Andy O'Brien
 - c. UK: Colin Ridding
 - d. Others as available
- 15. Old Business
 - a. Inventory of roundabout locations update (Lee Rodegerdts)
 - b. Needs list from 2011 Carmel conference
 - c. Other?
- 16. New Business
 - a. Mega poster session for 2014? 2014 Call for papers?
 - b. Ideas and volunteers for added activities, new committees
 - c. Other?
- 17. Committee Liaisons as Available and Time Permits (**or give report to secretary**) (Work in progress as previously reported by subcommittee chair, sorting these out)
 - a. ANB20 Safety Data, Analysis and Evaluation, former parent committee (?)
 - b. ANF10 Pedestrian (?)
 - c. AHB70 Access Management (Phil Demosthenes)
 - d. AHB60 Hwy-Rail Grade Crossings (Gene Russell)
 - e. AHB50 Traffic Control Devices (Gene Russell)
 - f. AHB25 Traffic Signal Systems (?)
 - g. AHB65 Operational Effects of Geometrics (?)
 - h. ANF20 Bicycle Committee (?)
 - i. AHB40 Highway Capacity (Lee Rodegerdts)
 - j. ABE60 Accessible Transportation and Mobility (?)
 - k. ANB30 Operator, Education and Regulation (?)
 - l. Intersection Subcommittee (Jeff Shaw?)
- 18. Open for Attendee Comments or Questions
- 19. Adjourn (*Next Meeting: Mid-Year Meeting likely at ITE Annual Meeting--August 4-7, Boston*)

MEETING MINUTES

- I. Chair Gene Russell called the meeting to order at approximately 2:30 PM.
- II. Self-introductions around the room were made and a sign-in sheet was distributed. There were 79 people in attendance (see Attachment 1 for attendance list).
- III. Comments from the Chair
 - a. Congratulations to Phil Demosthenes for his appointment as Member Emeritus of the Access Management committee.
 - b. Congratulations to Hillary Isebrands for winning the [Waller Award](#) at this year's Chairman's Luncheon for her paper on "Quantifying the Safety of Rural Roundabouts with High Speed Approaches".
 - c. Announcement of Rick Pain's retirement and plans to recognize him during this meeting.
- IV. Approval of Mid-Year and/or Previous Minutes (Marcus Brewer). Minutes of the Committee mid-year meeting and the final Task Force annual meeting in 2012 were previously distributed and corrections/revisions made as provided. MMS&C to approve those minutes.
- V. Research Subcommittee & Research Mini-Workshop
 - a. Status of Research Needs Statements (RNS) and submissions to NCHRP
 - i. A number of previous RNS have been expanded and submitted through NCHRP under the leadership of committee research coordinator Phil Demosthenes and some were funded, including the ongoing NCHRP 3-100, "Evaluating the Performance of Corridors with Roundabouts".
 - ii. An NCHRP project, "Life-Cycle Cost of Various Intersection Control Strategies", should have a contractor named soon. Impacts could be critical for all road agencies to make intelligent decisions on intersection control for the long-term. A contractor should be under contract in the spring. The project will look at all intersection control strategies but should include roundabouts.
 - iii. There is a need for more RNS and a need to revise and re-submit worthy previous RNS that were not accepted for funding. NCHRP RNS fall under the categories of research projects and synthesis projects. Larger research projects, usually over \$300,000, investigate issues that do not have established answers within the existing literature. Synthesis projects, funded at about \$35,000, collect information on existing agency practices and compile that information into a single document.
 - b. Mini-Workshop (Phil Demosthenes)
 - i. Phil distributed "idea sheets" for all attendees to compose their ideas on research needs so that they might be further developed into research needs statements.
 - ii. The idea sheet asks three questions:
 1. What is your research idea?
 2. How will this research help you?
 3. What is its importance?
 - iii. Participants submitted 37 sheets at the workshop, and some sheets contained multiple research ideas.
 - iv. Any interested parties that develop ideas after the meeting can send their research ideas to Phil (pdemos@ecentral.com). Please include your name, title, agency, and e-mail address (or phone number) for follow-up contact.
 - v. Synthesis statements are due to NCHRP on February 15. Any synthesis ideas in the 37 will be submitted.

- vi. Project statements are due September 15. After collected ideas are tabulated, best ideas will move forward for further development and discussion. State DOT support is necessary for large projects submitted in September.
- vii. Phil and Gene (and others) will be working together to evaluate existing RNS as well as those that are being written and submitted during this cycle.
- c. Future Working Subcommittee
 - i. Phil and Gene will be discussing ideas going forward about how to incorporate the efforts and ideas of others in future cycles on a regular basis.
- VI. TRB Report/Comments (Rick Pain, Bernardo Kleiner)
 - a. A plaque was presented to Rick Pain by the committee in recognition of his retirement. (CITATION: Happy Retirement to Dr. Richard F. Pain. From the Joint Subcommittee on Roundabouts ANB20(3) in 2002, to the Task Force on Roundabouts ANB75T in 2006, to Roundabouts Committee ANB75 in 2012. We couldn't have done it without your commitment, effort and support over those years. All past and present members love you and wish you many years of happy retirement.)
 - b. Rick presented Annual Meeting statistics.
 - i. Attendance: estimated 11,300 (Note: final attendance was a record 11,700)
 - ii. Number of papers submitted: 4,800
 - iii. Number of papers reviewed: 4,600
 - c. Rick stressed the importance of peer reviews for those papers that are submitted each year; the peer review is critical to the success and relevance of the Transportation Research Record.
 - d. The 2014 Annual Meeting will return to the traditional locations of the Marriott, Omni, and Hilton.
 - e. The 2015 Annual Meeting will move to the [Walter E. Washington Convention Center](#), with the new attached Marriott Marquis Hotel.
 - f. Rick introduced Bernardo Kleiner as his successor at TRB.
- VII. Ongoing Research
 - a. NCHRP 3-78B (Howard McCulloch – New Chair): They have selected a contractor and are getting ready to schedule a panel kickoff meeting with the research team.
 - b. FHWA (Hillary Isebrands/Jeff Shaw)
 - i. Accelerating Roundabout Implementation In The United States
 - a. Effectiveness of Rectangular Rapid Flashing Beacon (RRFB) Treatments at Multilane Pedestrian Crossings at Roundabouts – Bastian Schroeder presented about the status of this effort at TRB. Data collection continues. WA and OR sites have been preliminarily analyzed showing promise for RRFB under certain circumstances (i.e. turning and circulating volumes, crosswalk location, etc.).
 - b. Operational Analysis: Reassessment of and Guidance on Roundabout Capacity Analysis Procedures – Data was collected this summer/fall and the analysis is currently underway.
 - c. Assessment of the Environmental Characteristics of Roundabouts – underway
 - d. Forensic Analysis and Investigation of Severe Crashes at Roundabouts – underway
 - ii. FHWA Roundabout Peer to Peer Program
 - a. Program Email and Phone - RoundaboutsP2P@dot.gov or (866) P2P-FHWA [727-3492]
 - b. Program Website - <http://safety.fhwa.dot.gov/intersection/roundabouts/P2P>
 - iii. FHWA Mini Roundabout Safety and Operational Study – Before and After studies are being conducted at 15/16 locations, some of which will be constructed this year.

- c. Kansas State project on Oversize/Overweight (OSOW) Loads at Roundabouts is nominally complete, awaiting review and release of the final report by the lead state, Kansas DOT.
 - d. Lee Rodegerdts provided an overview of NCHRP 3-100; more detailed information was provided during the TRB Annual Meeting in presentation P13-6713 in Session 570. Major efforts on the project included:
 - i. Interviewing corridor owner-operators.
 - ii. Collecting operational data to develop models.
 - iii. Developing a Corridor Comparison Document to assist other practitioners in performing future evaluations.
 - e. Presentation on Signing and Pavement Markings at Roundabouts (Mark Johnson)
 - i. Overview of Guiding Principles
 - ii. Case Study (Richfield, MN) – both signs and markings were replaced at a multilane roundabout, with a decrease in crashes and in failure-to-yield incidents
 - iii. Evaluation of the number of violations is currently ongoing. A paper was presented on preliminary results in Session #626; the paper is entitled “Effect of Signs and Striping on Roundabout Safety: Observational Before and After Study” (13-4568) by Veronica Richfield and John Hourdos (University of Minnesota, Twin Cities).
 - f. Other
 - i. Projects from Visibility Committee, Wade Odell, Texas DOT: Driver glance patterns at roundabout entry and exit points, and Eco-luminance (reducing the need for artificial lighting) at roundabouts
 - ii. Ruth Steiner, University of Florida: Roundabouts and Access Management (Co-PIs: Scott Washburn and Albert Gan (Florida International University))
 - 1. Review of state guidance on roundabouts
 - 2. Analysis of crashes at roundabouts in Florida
 - 3. Review of capacity issues and data collection
 - 4. Make recommendations on access management (driveway placement, left-turns, etc.) in the context of roundabouts
 - 5. **Ruth requests information from others on access management practices from other states and jurisdictions; please send information to rsteiner@dcp.ufl.edu.**
 - iii. Bastian Schroeder: Developing simulation algorithms for pedestrian-vehicle interaction. (ITRE, U. of Florida, and others)
 - iv. Wen Hu, IIHS: Study of operations of selected roundabouts in Bellingham, Washington.
 - v. Nathan Belz, University of Vermont: Ph.D. research on behaviors near roundabout entries that are not compliant with gap acceptance; includes roundabouts in Maine, New Hampshire, Vermont, and New York.
 - vi. NCDOT: Fuel emission comparison between roundabouts and signalized intersections
 - vii. University of Wisconsin: Evaluation of roundabouts at ramp terminals
- VIII. Other Subcommittee Reports
- a. Human Factors Workshop (Workshop #1471) recap and future efforts (Janet Barlow/Bastian Schroeder)
 - i. Topic: Innovative pedestrian/bicycle treatments at roundabouts (overcoming barriers to implementation).
 - ii. Program agenda consisted of presentations during the morning session, with workshop activities on case studies in the afternoon.
 - iii. Session was sold out, and registration was even expanded to accommodate five additional attendees.

- iv. Janet and Bastian will be developing a report documenting the activities that were conducted during the workshop.
- b. Committee-Sponsored Sessions (Hillary Isebrands/Jeff Shaw/Andrew Paul)
 - i. There were 30 papers submitted. Each was reviewed by up to five reviewers; thanks to all who reviewed the papers they were assigned.
 - ii. There were two podium sessions; one (Session #570) was an invited-speaker session to discuss ongoing research, while the other (Session #626) was populated with four submitted papers.
 - iii. There was also one poster session (Session #542), containing 24 papers.
- c. Video Theatre (Brian Walsh/Rachel Price)
 - i. There were 40-50 people in attendance, with a great deal of useful conversation.
 - ii. Scheduled Tuesday from 9:45 to 2:45. A shorter session than in previous years, as requested during session planning. Future sessions will likely be this duration or slightly shorter.
 - iii. The continued success of the Video Theatre is sparking interest among other groups to do similar events to engage their members.
- d. Sunday Workshop on Roundabout Knowledge Exchange (Workshop #110) recap
 - i. By Phil Weber for Mark Lenters (See Attachment 2)
- e. Communications Coordinator & Web Site (Marcus Brewer)
 - i. Update on current tools, including the committee website, located at <https://sites.google.com/site/trbroundaboutscommitteeanb75/>
 - ii. Request for ideas on committee-specific tools (e.g., LinkedIn, separate e-mail list). In an impromptu straw poll, a majority of those attending the meeting indicated that they participated in LinkedIn.
- f. Subcommittee on Liaison (Bastian Schroeder)
 - i. Compiled a spreadsheet containing the membership roster and the list of all of the other committees of which ANB75 members are members and/or friends.
 - ii. All members and friends are encouraged to update Bastian's spreadsheet (now and on an ongoing basis) to indicate not only which committees they are involved in, but also which committees for which they are willing to serve as an ANB75 liaison.
- g. Webinars (Gene Hawkins/Mark Johnson)
 - i. In order to emphasize the need to have knowledgeable roundabout designers, there is an opportunity to present a webinar on one or more case studies on locations where a roundabout was initially designed/implemented but later "fixed" to remedy issues that were realized after the roundabout was opened to traffic. This webinar could be offered up to twice per year to practitioners.
 - ii. Request was made for feedback on this concept, as well as interest from volunteers who could provide case study materials, speakers, hosting facilities, etc.
 - iii. Consensus was in favor of the idea. Gene H. and Mark will lead the effort to develop the concept and plan a webinar series, with input from Gene R. and other members.
- h. Truck Issues (Peter Lynch)
 - i. Encouraged the roundabout community to seek the "middle ground" of explaining to the trucking community what is expected of truck drivers to do when approaching and negotiating a roundabout.
 - ii. There is an ongoing Minnesota/Wisconsin truck-in-lane study; this involves standard-size trucks, not OSOW.
 - iii. **Looking for three more participants from state DOTs and potentially two younger (under-35) professionals on the subcommittee.**

- i. Roundabout Guide Update (Lee Rodegerdts)
 - i. Presented the idea at the mid-year meeting that this committee would “own” the Roundabout Guide with its updating and maintenance. While funding would come from FHWA, the expertise will come from within the committee to identify needs and conduct tasks.
 - ii. Ideas include establishing a strategic plan for updating the Guide, identifying appropriate research needs statements, and collecting user feedback on the current Guide.
 - iii. Lee has already identified eight volunteers to participate, but is open to receive a few more if people are willing to fill needs.
- j. Strategic Planning (Gene Russell)
 - i. Gene mentioned that he had a web meeting with four key, veteran members of the committee and it was decided to not officially call the group a Strategic Subcommittee, and perhaps not call it a subcommittee (still to be determined). However, it will be a “group” Gene will confer with from time to time on a number of issues.
- k. Younger Member activities (Robert Rescot)
 - i. Robert discussed the findings of a recent survey on Younger Member activities at the annual meeting and in committees. He emphasized the difference between younger members and new attendees at the annual meeting, and that TRB needs to accommodate that difference. He also discussed the need to integrate younger members at the annual meeting so that they are fully engaged and not marginalized because of their status.
 - ii. Robert counted the number of young attendees and new attendees for reference.
- IX. Awards (Gene Russell)
 - a. Frank Blackmore Award
 - i. Background on Frank Blackmore’s career and Award guidelines
 - ii. Award given to Bernard Guichet; Gene Russell presented the award to Joe Bared on Bernard’s behalf. Ken Sides recorded video of the presentation to send to Bernard along with the award. Joe Bared and Hillary Isebrands offered comments to Bernard.
 - b. ANB75 Best Paper Award
 - i. Presented to Katayoun Salamati, Bastian J. Schroeder, Duane R. Geruschat, and Nagui M. Roupail for their paper “Event-Based Modeling of Driver Yielding Behavior to Pedestrians at Two-Lane Roundabout Approaches”.
 - ii. (Note: the main topics of Ken’s videos are Best Paper Award, Blackmore Award, and Rick Pain’s retirement plaque award; they are available upon request if anyone is interested but could use some minor editing if any volunteer is interested.)
- X. Break
- XI. Presentation: **BIM in Intersection Design; Considering Post-Construction Operational Factors in the Design of Roundabouts** (P13-6837), Mike J. Hutt, Savoy Computing
- XII. International Reports
 - a. Canada (Keith Boddy) – See Attachment 3
 - b. Collin Ridding (UK)
 - c. Germany, Netherlands, and Switzerland (Werner Brilon)
 - d. Australia (Andy O’Brien)
- XIII. 2014 International Conference, Seattle, April 16-18, 2014 (Brian Walsh)
 - a. Call for Papers expected in Spring, submission deadline expected in September
 - b. Draft conference agenda planned for summer
 - c. More details will be released as they become available

XIV. Agency Liaison Reports:

- a. Access Board (Melissa Anderson) Requirements for pedestrian activated signals at multi-lane roundabouts and multi-lane channelized turn lanes are included in the proposed Public Right of Way Accessibility Guidelines in Section R306. We received many comments regarding the signalization from engineers, communities, organizations and individuals. Roundabout signalization was presented to the Board as a major issue and further discussion is taking place. It is our goal to have the final rule published by the end of 2013 and it will then be available for the US Department of Transportation and the US Department of Justice to adopt the Guidelines as enforceable Federal standards.
- b. NCUTCD (Gene Hawkins) The focus of the January 2013 NCUTCD meeting was the development of a response to the Federal Register notice published by FHWA regarding splitting the MUTCD into two documents. The notice seeks input on the benefits of splitting the MUTCD into one document that would serve as the official MUTCD (would contain mostly the Standard statements in the current MUTCD) and an applications supplement (would contain mostly the Guidance, Option, and Support statements in the current MUTCD). The notice suggests two different strategies for splitting the MUTCD. The docket, which can be accessed at <http://www.regulations.gov/#!searchResults;rpp=25;so=ASC;sb=docId;po=0;s=fhwa-2012-0118;fp=true;dct=FR%252BPR%252BN%252BO>, presents two examples of how the MUTCD might be split into two documents. Significant portions of both General Sessions of the NCTUCD meeting plus most of the Wednesday technical committee meetings were devoted to developing the NCUTCD response to the docket. The response was approved by the NCUTCD Council on Friday, January 11 and submitted to the docket on January 22, 2013. The Federal Register notice and the NCUTCD docket response are provided at the link shown above.
- c. ITE Roundabout Committee (Rachel Price) The ITE Roundabout Committee is starting quarterly online meetings doing a "Roundabouts in the Ground" series that highlights construction of RBs across the country. If you have candidates that were constructed in the last 6 months, send them to me (rprice@reidmiddleton.com). Below are the following upcoming meeting dates for the ITE Roundabout Committee:
 - i. Quarterly online meetings:
 1. February 26th (Robin Lewis – Roundabouts in Bend; Ken Sides – RBT Briefs)
 2. May 28th (ACHD – Fastest Path Cad Method; Roundabouts in the Ground)
 3. August 27th (Highlights from Annual Meeting Presentations)
 4. October 22nd
 - ii. Technical Conference (March 3-6, San Diego, CA)
 - iii. Annual Meeting (August 4-7, Boston, MA)
- d. AASHTO (Jim Brewer) With the publication of the 2011 AASHTO *Green Book*, released in early 2012, it contains about 15 pages concerning roundabouts as compared to 5 pages in the 2004 edition. It also contains a reference to the NCHRP Report 672: *Roundabouts: An Informational Guide*, Second Edition, 2010. The Technical Committee, charged with writing the Green Book, is now in the review and research stage in developing the next edition. Needed research is in various stages of development, and when completed, results from the research will be reviewed and added to the *Green Book* as decided by AASHTO.
- e. FHWA (Hillary Isebrands/Jeff Shaw) – See report under Item VII: "Ongoing Research".
- f. ASCE/T&DI (Gene Russell) The T&DI adopted a statement encouraging consideration of roundabouts when intersections are upgraded (similar to the ITE statement) and it is now being considered by the ASCE board of direction.

- XV. Committee Liaisons (This discussion was omitted due to time constraints. The list of committees to consider in future meetings will be revised based on the responses to the liaison spreadsheet developed by Bastian.
- XVI. Closing Discussion
 - a. Andrew Paul suggested Boston as a possible host for the 2017 International Roundabouts Conference.
 - b. Next meeting will likely be held at the ITE Annual Meeting August 4-7 in Boston.
- XVII. The meeting was adjourned by the chair at approximately 6:30 PM.

Minutes taken and typed by Marcus Brewer, Secretary.

Attachment 1 – Meeting Attendance List

<u>Name</u>	<u>Organization</u>	<u>Name</u>	<u>Organization</u>
Majed Al Ghandour	NC DOT	Mike McBride	City of Carmel, IN
Justin Bansen	Kittelson & Associates	Howard McCulloch	NY DOT
Joe Bared	FHWA	Martin Michalek	Ontario Ministry of Transportation
Janet Barlow	Accessible Design for the Blind	Ricky Mitchell	Mobile County (AL) Public Works
Joel Barnett	Portland State U.	Kazunori Munehiro	CERI
Nathan Belz	U. of Vermont	Goran Nikolic	Ontario Ministry of Transportation
Ray Benekohal	U. of Illinois	Andrew O'Brien	O'Brien Traffic
Mark Besley	SIDRA Solutions	Mitchell O'Laughlin	MRIGlobal
Tom Blust	Road Commission for Oakland County (MI)	Wade Odell	TX DOT
Keith Boddy	Nova Scotia Transportation and Infrastructure Renewal	Craig Parks	American Structurepoint
Jim Brewer	KS DOT	Daniel Pass	GA DOT
Marcus Brewer	Texas A&M Transportation Institute	Andrew Paul	MA DOT
Werner Brilon	Ruhr-University Bochum	Alek Pochowski	Kittelson & Associates
Henry Brown	U. of Missouri	Rachel Price	Reid Middleton
Zachary Bugg	Kittelson & Associates	Charles Proctor	VA DOT
John Burnside	Ins & Outs of Roundabouts	Robert Rescot	Purdue U. Calumet
Steven Chan	Transoft Solutions	Lee Rodegerdts	Kittelson & Associates
Gil Chlewicki	Wallace Montgomery	Rory Rowan	VA DOT
Phil Demosthenes	Consultant	Gene Russell	Kansas State U.
Said Easa	Ryerson U.	Katy Salamati	ITRE at NC State U.
Sepideh Eshragh	U. of Delaware	Victor Salemann	David Evans and Associates
James Foster	Mobile County (AL) Engineer Office	Dona Sauerburger	Orientation & Mobility Specialist
Karen Giese	PTV Group	Bastian Schroeder	ITRE at NC State U.
Joe Gustafson	Washington County (MN) Public Works	Hardik Shah	American Structurepoint
Samuel Hammond	U. of Rhode Island	Jeffrey Shaw	FHWA
Gene Hawkins	Texas A&M U.	Ken Sides	City of Clearwater, FL
John Hourdos	U. of Minnesota	Hamilton Smith	Mobile County (AL) Engineering Dept.
Wen Hu	IIHS	Daniel Spann	RPM Transportation Consultants
Chris Hunter	U. of Rhode Island	Ruth Steiner	U. of Florida
Mike Hutt	Savoy Computing	Edward Stollof	ITE
Vaughan Inman	SAIC	Lee Stuart	ATSSA
Hillary Isebrands	FHWA	Chris Tiesler	Kittelson & Associates
Reza Jafari	RSTS, Inc.	Brian Walsh	WA DOT

<u>Name</u>	<u>Organization</u>	<u>Name</u>	<u>Organization</u>
Mark T. Johnson	MTJ Engineering	Philip Weber	Ourston Roundabout Engineering
Randy Johnson	PTV Group	Ting Wei	American Structurepoint
Michael Kennerly	IA DOT	Todd West	WV DOT
Zhixia (Richard) Li	U. of Wisconsin-Madison	Keith Wilson	Santa Fe MPO
Tomas Lindheimer	U. of Kansas	Scott Windley	US Access Board
Peter Lynch	U. of Wisconsin	Wei Zhan	FHWA
Wanjing Ma	Tongji U.		

Attachment 2 – Report on TRB Workshop #110 - Roundabout Knowledge Exchange

The session was reasonably well attended in spite of the overlap with the Human Factors session. Perhaps we should have charged admission and given lunch too ;)

The Length of Workshop #110 - Roundabout Knowledge Exchange was good, we had approximately 40 in attendance.

Topics were attractive thanks to our capable volunteer subject matter experts:

1. Organizing your agency to implement roundabouts and to develop outreach strategies – when to contact, who to contact, with what resources, and the structure of your organization for success. (Joe Gustafson, Washington County, MN)
2. Right Sizing Roundabouts to Improve Operations and Safety– issues with staging the capacity and expandability of roundabouts. (Tom Blust, Oakland County Road Commission)
3. Trucks and roundabouts – reaction of the industry and how agencies are responding. (Peter Lynch, University of Wisconsin Traffic Operations Lab)
4. Evaluating roundabouts – how are agencies responding? (Jim Dunlop, NCDOT)

Each presenter took approximately 45 minutes including a lively Q&A session of approximately 20 minutes. The level of interest and dialogue points to the need for additional sessions of a similar kind next year.

Research topics were evident from the dialogue suggestions include:

- Research on whether to paint lane lines on the circulatory because of truck space problems and crash incidence of a particular kind.
- Research on design for standard trucks with greater participation from the freight industry
- Research on sizing roundabouts versus our funding models and the pitfall of oversizing for the early years of operation
- Techniques for evaluating in-service roundabouts – human factors and field techniques for reviewing and troubleshooting problem designs in service.

A suggestion is to try having the session on Sunday afternoon next time to avoid the conflict with human factors and late arriving conference delegates.

Respectfully submitted,

Mark Lenters

Presiding: Workshop #110 - Roundabout Knowledge Exchange, 2013

Attachment 3 – Canada Report by Keith Boddy

TAC Update – The TAC Joint Roundabout Sub-committee met in October 2012 during the TAC Annual conference held in Fredericton.

It appears most Provincial Jurisdictions in Canada are either installing Roundabouts or are strongly considering them. A rough count of roundabouts constructed in Canada has been established at 150-200 roundabouts. A volunteer lead effort has begun to establish a comprehensive list of installed roundabouts to ensure we have more accurate statistics. (no update)

British Columbia

- 23 roundabouts on Ministry roads. Most tend to be around interchanges. We don't have a count for how many are installed in municipalities.
- BC has developed a policy for "the look/style" for our overhead guide signs for multi-lane roundabouts, as well as our shoulder mounted signs. We borrowed from the Nova Scotia model.
- Ongoing efforts
 - Roundabout Design – based on placing roundabouts on extra-ordinary load haul routes
 - Development of Radar Controlled Active Yield Ahead Signs –to improve Yield Compliance
 - Development of Sign Strategies for Overhead Guide Sign Practice on Multi-Lane Roundabouts

Quebec

- 3 Items in conference
 - All You Wanted to Know About Roundabouts: Capacity, Safety, Trucks, and Modeling
 - Crash Severity Analysis at Roundabouts: Case Study in Quebec Detailed
 - Driver Behavior Analysis and Trajectory Interpretation at Roundabouts Using Computer Vision Data
- From the Quebec perspective, it is business as usual; it is 1 to 3 roundabouts per year on the MTQ's road network. The majority of design is based on MTQ's guide. To date there are around 40 on the MTQ's road (14 more for the next 5 years) and more than 40 on the municipalities.

Alberta

- Alberta Transportation opened a new rural roundabout this year near Cold Lake. It has been designed to accommodate some large oil services modules (the largest being 98 m long plus any push tractors). There are now 6 roundabouts in operation on the provincial highway system.
- There are approximately 10 in the planning or design stages including many at interchange ramp terminals. Our current design practice is that roundabouts are the "first choice" where a degree of traffic control beyond the "two way stop control" is needed. Designers and planners are

required to justify any proposals that do not include roundabouts. We are referencing NCHRP 672 as a key technical guide.

- Many municipalities in Alberta are also building roundabouts, especially in new developments. This helps with driver acceptance of the concept.

Ontario

- The MTO will be completing construction of a roundabout at the termination of Highway 406 in Welland in the spring. We're still in design for an 11-roundabout corridor in Waterloo Region. Construction is expected 2014-2015. (8-10 RBTs constructed)

Nova Scotia

- 21 RBTs constructed, 1-2/year in the future

New Brunswick

- 8-10 RBTs constructed

Prince Edward Island

- 6-8 RBTs constructed