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TRB Committee on Roundabouts (ANB75)

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Hosted by
Washington State Department of Transportation

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## AGENDA AT A GLANCE

### Tuesday, April 15

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<tr>
<td>2:00 p.m. - 6:00 p.m.</td>
<td>Registration</td>
<td>Spruce</td>
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### Wednesday, April 16

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<td>7:00 a.m. – 5:00 p.m.</td>
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<td>7:15 a.m. – 8:00 a.m.</td>
<td>Continental Breakfast</td>
<td>2nd Floor Pre-Function Area</td>
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<tr>
<td>8:00 a.m. – 9:00 a.m.</td>
<td>Opening Plenary Session</td>
<td>Grand Ballroom CD</td>
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<tr>
<td>9:00 a.m. – 9:45 a.m.</td>
<td>Break</td>
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<tr>
<td>9:45 a.m. – 11:30 a.m.</td>
<td>Breakout Sessions 2A, 2B, 2C</td>
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<tr>
<td>2A) Driver and Other User Behavior Relationship to Capacity/Safety</td>
<td>Grand Ballroom CD</td>
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<td>2B) Evaluation Elements of Roundabout Intersection Choices</td>
<td>Redwood</td>
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<td>2C) Metering and Other Operational Considerations for Roundabouts</td>
<td>Willow</td>
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<td>11:30 a.m. – 1:00 p.m.</td>
<td>Lunch</td>
<td>Grand Ballroom AB</td>
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<td>12:30 p.m. – 1:00 p.m.</td>
<td>Poster Session 1 Continued [Presenters Available]</td>
<td>2nd Floor Pre-Function Area</td>
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<tr>
<td>1:00 p.m. – 2:45 p.m.</td>
<td>Breakout Sessions 3A, 3B, 3C</td>
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<td>3A) Constructing Roundabouts, Work Zone Design and the Use of Temporary Roundabouts</td>
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<td>3:15 p.m. – 4:45 p.m.</td>
<td>Breakout Sessions 4A, 4B, 4C</td>
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<tr>
<td>4A) Truck Accommodations / Considerations at Roundabouts</td>
<td>Grand Ballroom CD</td>
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<td>4B) Larger Policy, Planning, and Design Aspects of Roundabouts</td>
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<td>4C) Bicycle Design, Path Tendencies, and Accommodation of Vulnerable Users</td>
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<td>5:15 p.m. – 7:30 p.m.</td>
<td>Reception with Patrons</td>
<td>Grand Ballroom AB</td>
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<td>7:30 p.m. – 9:30 p.m.</td>
<td>TRB Roundabouts Committee (ANB75) Meeting</td>
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<td>Breakout Sessions 5A, 5B, 5C</td>
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<td>5A) Pedestrian Design, Accessibility, and Driver Yielding Studies in the U.S. and Other Countries</td>
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<td>5B) Agency Policy Development for Roundabouts</td>
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<td>5C) Modeling Capacity, Calibrating, Performance and Operational Evaluation of Roundabouts – Individual Intersections and Corridors</td>
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<td>Poster Session 2 Opens [Presenters Available]</td>
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<tr>
<td>10:00 a.m. – 11:45 a.m.</td>
<td>Guided Roundabout Tour [Preregistration Required]</td>
<td>Union Street Entrance</td>
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<td>10:15 a.m. – 11:45 a.m.</td>
<td>Breakout Sessions 6A, 6B, 6C</td>
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<td>6A) International Perspectives – Roundabout Intersections</td>
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<td>6B) Micro-Simulation Studies on Existing Roundabouts – Calibration and Modeling 3D</td>
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<td>6C) Accelerating Roundabout Implementation in the United States – FHWA TOPR 34</td>
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<td>11:45 a.m. – 1:00 p.m.</td>
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<td>Poster Session 2 Continued [Presenters Available]</td>
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<td>1:00 p.m. – 2:45 p.m.</td>
<td>Breakout Sessions 7A, 7B 7C</td>
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<td>7A) Turbo Roundabouts and Unconventional Geometry Roundabouts</td>
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<td>7B) Organizational Structure for Delivering Innovative Roundabouts</td>
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<td>7C) Various Models/Tools that Support Roundabout Choice in Design, Environmental, and Network Arenas</td>
<td>Willow</td>
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<td>3:15 a.m. – 4:45 p.m.</td>
<td>Breakout Sessions 8A, 8B, 8C.</td>
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<td>8A) Mini-Roundabouts</td>
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<td>8B) Unique Roundabout Applications – Case Studies, Part 2</td>
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<td>8C) Design Checks and Validation</td>
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Friday, April 18

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<td>9A) Citizen Activism, Engineering Outreach, and Elected Official Perspectives</td>
<td>Grand Ballroom CD</td>
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<td>9B) Evolution of Roundabout Practice in the United States – A Conversational Panel with Audience Participation</td>
<td>Redwood</td>
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<tr>
<td>9:45 a.m. – 11:00 a.m.</td>
<td>Breakout Sessions 10A, 10B, 10C</td>
<td>Grand Ballroom CD</td>
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<td>10A) Complexities of Multi-Lane Roundabouts and Safety</td>
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<td>10B) Unique Roundabout Applications – Case Studies, Part 3</td>
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<td>10C) Speed Management for Roundabouts</td>
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<tr>
<td>11:00 a.m. – 12:15 p.m.</td>
<td>Closing Plenary Session</td>
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<td>11)</td>
<td>Town Hall Roundabout Forum</td>
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Guided Roundabout Tour

*Thursday, April 17*

10:00 a.m. - 11:45 a.m.

*(Preregistration Required - $25.00)*

*Gathering at Union Street Entrance*

Participants will visit two multi-lane roundabouts and one single lane roundabout in Bellevue and Issaquah, WA. The three roundabouts have many different design/operations innovations, including: bypasses, hybrid circulating lane configurations, teardrop shapes, internally illuminated bollards, full pedestrian and bike connectivity (including a regional trail connection), and different forms of central island landscaping to enhance visibility. Each of the three roundabouts has a unique history: the first WSDOT roundabout built, the last WSDOT roundabout built, and a local agency roundabout on a high volume arterial that included the removal of a traffic signal.
Welcome to the fourth successful international roundabout conference by TRB’s Roundabouts Committee, ANB75. On behalf of the committee, I welcome to Seattle attendees from a range of public and private organizations throughout the United States as well as many international delegates from several countries.

It has been very gratifying as chair to see the strong interest shown in this conference, which has continually grown from an initial idea and efforts in 2002 to successful roundabout conferences in Vail (2005), Kansas City (2008), and Carmel, IN (2011). The call for abstracts for this 2014 roundabout conference easily produced over 120 presentations on a range of topics and is another indication of the strong interest in all phases of roundabouts, both in the United States and worldwide. It is especially notable and indicative of the strong interest in roundabout issues in these tough economic times with travel budget restrictions. Many thanks to the hosts, WSDOT planning committee chair, and local members of the planning committee for their efforts—and to the roundabout committee members and friends who contributed ideas, reviewed papers, agreed to be moderators, and contributed in other ways. And thanks to the TRB staff for their constant input and liaison efforts to soothe difficult issues as they arose.

Thanks to our cosponsors, the Federal Highway Administration, our nine patrons, and the roughly 110 presenters who will make the conference one of the best ever, covering a wide variety of current roundabout intersection topics. To you all, a most warm welcome!

Finally, the local planners have made efforts to enhance your stay and enjoyment of the Seattle area. I hope you take advantage of all the extra suggestions and tour.

May your conference experience be pleasant and rewarding.

—Eugene R. (Gene) Russell, Sr., Roundabouts Committee Chair, Professor Emeritus of Civil Engineering, Kansas State University
The Roundabout Committee

Chair
Dr. Eugene Robert Russell, Sr.
Kansas State University

Secretary
Mr. Marcus A. Brewer
Texas A&M Transportation Institute

Members
Ms. Melissa A. Anderson
U.S. Access Board

Ms. Janet M. Barlow
Accessible Design for the Blind (ADB)

Mr. Keith W.H. Boddy
Nova Scotia Department of Transportation and

Mr. James O. Brewer
Kansas Department of Transportation

Prof. Dr. Werner Brilon
Ruhr University, Bochum

Mr. Philip B. Demosthenes
Philip B. Demosthenes, LLC

Mr. James D. Foster
Mobile County Engineer Office

Dr. H. Gene Hawkins, Jr.
Texas A&M University

Mr. Mike J. Hutt
Savoy Computing

Mr. Vaughan W. Inman
Science Applications International Corporation (SAIC)

Dr. Hillary Nicole Isebrands
Federal Highway Administration (FHWA)

Mr. Mark T. Johnson
MTJ Engineering, LLC

Mr. Mark S. Lenters
GHD

Mr. Peter G. Lynch
University of Wisconsin

Mr. Michael Thomas McBride
City of Carmel

Mr. Howard M. McCulloch
New York State Department of Transportation

Mr. Andrew P. O’Brien
O’Brien Traffic

Mr. Wade Odell
Texas Department of Transportation

Mr. Andrew Keating Paul
Massachusetts Department of Transportation

Mr. Colin S. Ridding
Mott MacDonald, United Kingdom

Mr. Lee A. Rodegerdts
Kittelson & Associates, Inc. (KAI)

Mr. Jeffrey B. Shaw
Federal Highway Administration (FHWA)

Mr. Kenneth Sides
City of Clearwater

Mr. Edward R. Stollof
Institute of Transportation Engineers (ITE)

Mr. Brian J. Walsh
Washington State Department of Transportation

Mr. Ting Wei
American Structurepoint, Inc.

Young Members:
Mr. Alek L. Pochowski
Kittelson & Associates, Inc. (KAI)

Mrs. Rachel S. Price
Reid Middleton, Inc.

Dr. Robert Andrew Rescot
Purdue University

Dr. Bastian J. Schroeder
Institute for Transportation Research and Education (ITRE)

TRB Staff
Bernardo Kleiner
Transportation Safety Specialist

Mary Kissi
Associate Program Officer

Freda Morgan
Associate Program Officer
**Tuesday, April 15**

2:00 p.m. - 6:00 p.m., Spruce

Registration

**Wednesday, April 16**

7:00 a.m. - 5:00 p.m., Spruce

Registration

7:15 a.m. - 8:00 a.m., 2nd Floor Pre-Function Area

Breakfast

8:00 a.m. - 9:00 a.m., Grand Ballroom CD

Opening Plenary Session

1) Welcome and Opening Remarks

Moderator: Brian Walsh, Washington State DOT

**Presenters**

- Gene Russell, Emeritus Professor, Kansas State University, Welcome and Remarks from the TRB Roundabout Committee
- Mike Griffith, Federal Highway Administration, Office of Safety, Washington, DC, Welcome and Remarks from Federal Highway Administration
- Linea Laird, Chief Engineer, Washington State DOT, Welcome and Remarks from Washington State DOT

9:00 a.m. - 9:45 a.m., 2nd Floor Pre-Function Area

Break

Poster Session 1 Opens – Presenters Available

**Presenters**

- Rahmi Akcelik, Akcelik & Associates, Modeling Queue Spillback and Upstream Signal Effects in a Roundabout Corridor
- Ellen Poling, Fehr & Peers, Does it Fit? Considering the Roundabout in a Campus Setting
- N. Nezamuddin, Valparaiso University, Feasibility Study of a Multilane Roundabout in Valparaiso, Indiana
- Craig Lyon, Persaud and Lyon Inc., A Model for Average Speed Estimation and Crash Prediction Using Design Vehicle Path Data
- Katsumori Fujioka, Oriental Consultants Co.,Ltd., An Innovative Example of Roundabout Implementation in Iida City, Japan
- Mark Lenters, GHD Inc., Capacity Effects of Converting Rotaries to Roundabouts
- Paul Chan, Traffic Solutions Consulting Ltd., Research on Roundabout Applications on Various Transportation Systems in Multiple Cities and Countries
Breakout Sessions

2A) Driver and Other User Behavior Relationship to Capacity/Safety - Grand Ballroom CD
Moderator: Kelli Owen, Reid Middleton

Presenters
- Michael Hunter, Georgia Institute of Technology, Georgia Roundabout Model Calibration
- Kun Zhang, DPTI, Government of South Australia, An Innovative Dual Roundabout - Design Drives Behaviour Change
- Nathan Belz, University of Alaska – Fairbanks, Cellular Automata and the Influence of Driver Behavior at Roundabouts
- Hiroyuki Kageyama, Civil Engineering Research Institute, Japan, Driving Behavior Analysis at Roundabouts under Snowy and Dry Road Conditions

2B) Evaluation Elements of Roundabout Intersection Choices - Redwood
Moderator: Jerry Champa, California DOT

Presenters
- Michelle Stevens, Felsburg Holt & Ullevig, Blending a Roundabout into an Art District in Lakewood, Colorado
- Koji Suzuki, Nagoya Institute of Technology, Japan, Subjective Evaluation for Driving Conditions at Roundabout by Before-After Analysis
- Diego Fernandes Neris, University of Sao Paulo, Brazil, An Adaptation of Roundabouts Operation for High-Volume Traffic Conditions

2C) Metering and Other Operational Considerations for Roundabouts - Willow
Moderator: Ken Sides, City of Clearwater, Florida

Presenters
- Bastian Schroeder, ITRE at N.C. State University, SuperCircles: Using a Part-Time Entry Signal to Create All-Day Operational and Safety Benefits at Intersections
- L.G.H. (Bertus) Fortuijn, Delft University of Technology, The Netherlands, Robustness of Roundabout Metering Systems (RMS)
- A. Maria Salomons, Delft University of Technology, The Netherlands, Optimizing the Traffic Control of Signalized Turbo Circles
- Bill Baranowski, RoundaboutsUSA, Roundabouts Located Near Traffic Signals

11:30 a.m. - 1:00 p.m., Grand Ballroom AB
Lunch

12:30 p.m. - 1:00 p.m, 2nd Floor Pre-Function Area
Poster Session 1 Continued – Presenters Available
1:00 p.m. - 2:45 p.m.

**Breakout Sessions**

**3A) Constructing Roundabouts, Work Zone Design and the Use of Temporary Roundabouts** - *Grand Ballroom CD*

Moderator: Scott Zehngraff, Georgia DOT

**Presenters**

- **Kevin House**, Parametrix, Inc., *Lessons in Scripting the Construction Sequencing Dance*

- **Jennifer Atkinson**, Leidos, *Temporary Traffic Control for Building and Maintaining Single and Multi-Lane Roundabouts*

- **Nathan Beauheim**, City of Cheyenne, Wyoming, *Constructing the Pershing / Converse / 19th Roundabout in the Middle of Cheyenne, Wyoming*

- **Shane King**, Olsson Associates, *Temporary Roundabout in Work Zone*

- **Jay VonAhsen**, Kimley-Horn and Associates, Inc., *Recent Challenges with Modern Roundabout Construction*

**3B) Unique Roundabout Applications - Case Studies PART 1 - Redwood**

Moderator: Martina Wilkinson, Larimer County, Colorado

**Presenters**

- **Daniel Spann**, RPM Transportation Consultants, LLC, *A Case Study of the Music Row Roundabout in Nashville, Tennessee*

- **David A. Henkel**, CHA Consulting, Inc., *Heading Home - The Story of the US 31 Mega-Project*

- **Alan Woodmansey**, Federal Highway Administration, Montana Division, *Montana's Roundabout Corridor: Convincing the Stakeholders and Ourselves*

- **Christopher Tiesler**, Kittelson & Associates, Inc., *Gilberts Corner (US 50 / US 15) Roundabout Retrofit*

- **Becky Bucar & Dan Wilkins**, Town of Truckee, California, *Policies, Planning and Strategies to Fund Roundabouts*

**3C) Safety: From HSM and State Safety Summaries of North America to Context for Needed Illumination - Willow**


**Presenters**


- **Andrea Bill**, University of Wisconsin-Madison, and **Ghazan Khan**, California State University – Sacramento, *Safety Evaluation of Wisconsin Roundabouts*

- **Franklin Gbologah**, Georgia Institute of Technology, *Evaluation of Roundabout Illumination and Safety*

- **Andrew Duerr**, GHD Inc., *Statewide Roundabout Implementation Using the HSM Implementation Plan as a Model*
2:45 p.m. - 3:15 p.m., 2nd Floor Pre-Function Area

Break
Poster Session 1 Continued – Presenters Available

3:15 p.m. - 4:45 p.m.

Breakout Sessions

4A) Truck Accommodations / Considerations at Roundabouts - *Grand Ballroom CD*

Moderator: Daniel Spann, RPM Consultants

**Presenters**

- **Anabele Lindner**, University of Sao Paulo, Brazil, *Traffic and Safety Compatibility of LCV in Modern Roundabouts*

- **Amanda Ruksznis**, Reid Middleton, Inc., *Trucks and Roundabouts: Friends or Foes?*

- **Scott Ritchie**, Roundabouts & Traffic Engineering, *Accommodating Trucks at Multi-Lane Roundabouts*

- **Ranjit Godavarthy**, Great Plains Transportation Institute, NDSU, *Accommodating Oversize Overweight Vehicles at Roundabouts*

4B) Larger Policy, Planning, and Design Aspects of Roundabouts - *Redwood*

Moderator: Jeanette Taylor, Jacobs

**Presenters**

- **Phil Rust**, City of San Diego, California, *Greasing the Skids and Shifting into Overdrive*

- **Michael MacDonald**, Hatch Mott MacDonald, *Development of the Canadian Roundabout Design Guide*

- **Mark T. Johnson**, MTJ Engineering, LLC, and **Ken Sides**, City of Clearwater, Florida, *Implications of Modern Roundabouts for Communities and Roadway Planning Standards*

- **Frank Broen**, Certified Roundabout Champions, *Certified Roundabout Champions*

4C) Bicycle Design, Path Tendencies, and Accommodation of Vulnerable Users - *Willow*

Moderator: Robin Lewis, City of Bend, Oregon

**Presenters**

- **Rachel Price**, Reid Middleton, *Bike Lane Ends...Now What?*

- **Hiroshi Kobayashi**, National Institute for Land and Infrastructure Management, Japan, *Experimental Validation of Appropriate Bicycle Traveling Method in Urban Roundabouts*

- **Brad Shea**, HDR Engineering, *Pedestrian and Bicycle Accommodation at Roundabouts*

- **Colin Ridding**, Mott MacDonald, *Vulnerable Road Users at Roundabouts in the UK*

5:15 p.m. - 7:30 p.m., Grand Ballroom AB

Reception with Patrons

7:30 p.m. - 9:30 p.m., Cedar

**TRB Roundabouts Committee (ANB75) Meeting**
Thursday, April 17

7:00 a.m. - 4:00 p.m., Spruce

Registration

7:15 a.m. - 8:00 a.m., 2nd Floor Pre-Function Area

Breakfast

8:00 a.m. - 9:45 a.m.

Breakout Sessions

5A) Pedestrian Design, Accessibility, and Driver Yielding Studies in the U.S. and Other Countries - Grand Ballroom CD
Moderator: Hillary Isebrands, Federal Highway Administration

Presenters
- Bastian Schroeder, ITRE at N.C. State University, NCHRP 3-78b Project Overview and Status - A Look Ahead at National Guidance for Making Roundabouts Accessible to Pedestrians Who are Blind
- Hidekatsu Hamaoka, Akita University, Japan, Comparison of the Head-Turning Behavior of Pedestrians in Japan
- Janet M. Barlow, Accessible Design for the Blind, Roundabouts and Pedestrians who are Visually Impaired
- Katy Salamati, ITRE at N.C. State University, A Cross-Cultural Study of Driver Yielding Behavior to Pedestrians at Roundabouts: An American-Portuguese Comparison

5B) Agency Policy Development for Roundabouts - Redwood
Moderator: Matthew Enders, Washington State DOT

Presenters
- Martin Hétu, WSP Canada Inc., Current Situation of Roundabouts in the Province of Quebec
- Andrew Cibor, Ada County Highway District, Idaho, Countywide Roundabout Right-of-Way Preservation Plan
5C) Modeling Capacity, Calibrating, Performance and Operational Evaluation of Roundabouts – Individual Intersections and Corridors - *Willow*

**Moderator:** Doug McClanahan, Washington State DOT

**Presenters**

- **Andrea Bill**, University of Wisconsin-Madison, *Operational Evaluation of Roundabouts at Ramp Terminals*
- **Majed Al-Ghandour**, North Carolina DOT, *Experimental Analysis with a Scramble Large Volume of Pedestrians in Single-Lane Roundabout Slip Lane*
- **Andrea Bill**, University of Wisconsin-Madison, *Comprehensive and Numerical Calibration Guideline for VISSIM Roundabout Models*
- **Wang Weiqi**, Beijing University of Technology, China, *Exploration on Capacity Estimation of Roundabouts of Beijing, China*

9:45 a.m. - 10:15 a.m., 2nd Floor Pre-Function Area

**Break**

**Poster Session 2 Opens – Presenters Available**

**Presenters**

- **Nan Kang**, Nagoya University, Japan, *Estimation of roundabout entry capacity considering the impact of pedestrians*
- **Haizhong Wang**, Oregon State University, *Roundabout Capacity Models: From Deterministic to Stochastic*
- **Dan Dovey**, King County DOT, Washington, *Radial or Offset Left Entries – What Really Controls Speed?*
- **Hideki Tatematsu**, Oriental Consultants Co., LTD, *Analysis of Eye-mark Recorder Data Collected at Towacho Roundabout in Iida City*
- **Hillary Isebrands**, Federal Highway Administration, *The True Story of Roundabouts with High Speed Approaches*
- **Christoff Krogscheepers**, ITS Engineers, The Development of a Roundabout Policy for the Western Cape Government, South Africa
- **Mohammadreza Khalilzadeh**, Islamic Azad University (South Tehran Branch), *Tehran, Iran, Comparing Results of the Two-Lane Roundabout Capacity Models and Selecting the Most Appropriate Model for Iran Using Microscopic Simulation – Case Study*
- **Zachary Bugg**, Kittelson & Associates, Inc., *A Methodology to Compute Roundabout Corridor Travel Time*
- **Mike Hawkins**, Fehr & Peers, *Using the Versatility of VISSIM to Model the Versatility of Roundabouts*
- **Troy Pankratz**, GHD Inc., *Design Considerations for 5 and 6 leg Roundabouts*
- **Rob Livingston**, Transoft Solutions Inc., *Study of Roundabout Grading to Accommodate Lowboys Using Computer Modelling*
10:00 a.m. - 11:45 a.m., Union Street Entrance

**Guided Roundabout Tour – Preregistration Required $25.00**

10:15 a.m. - 11:45 a.m.

**Breakout Sessions**

6A) **International Perspectives – Roundabout Intersections** - *Grand Ballroom CD*

Moderator: Patrick Hasson, Federal Highway Administration

**Presenters**

- **Werner Brilon**, Ruhr-University Bochum, Germany, *Roundabouts: A State of the Art in Germany*
- **Keith Boddy**, Nova Scotia Transportation & Infrastructure Renewal, Canada, *Canadian Roundabouts - Practice Review*
- **Hideki Nakamura**, Nagoya University, Japan, *The State of the Art of Roundabout Implementation in Japan*
- **Howard McCulloch**, NE Roundabouts, *Status of Roundabouts in New York State*

6B) **Micro-Simulation Studies on Existing Roundabouts – Calibration and Modeling 3D - Redwood**

Moderator: Will Britnell, Connecticut DOT

**Presenters**

- **Sewa Ram**, School of Planning and Architecture, New Delhi, India, *Performance Indices for Roundabouts in Heterogeneous Traffic Conditions*
- **Sean Riley & Matt Hamel**, DLZ Corporation, *Roundabout 3D Modeling*
- **Amphone Soupharath**, Vanasse Hangen Brustlin, Inc., *Integrating RSAs and 3-D Visualization Tools to Enhance Roundabout Design Process*

6C) **Accelerating Roundabout Implementation in the United States – FHWA TOPR 34 Willow**

Moderator: Jeff Shaw, Federal Highway Administration

**Presenters**

- **Katy Salamati & Nagui Rouphail**, ITRE at N.C. State University, *Assessment of the Environmental Characteristics of Roundabouts*
- **Bastian Schroeder**, ITRE at N.C. State University, *Evaluation of Rectangular-Rapid-Flashing Beacons (RRFBs) at Multilane Roundabouts*

11:45 a.m. - 1:00 p.m., Grand Ballroom AB

**Lunch**

12:30 p.m. - 1:00 p.m., 2nd Floor Pre-Function Area

**Poster Session 2 Continued – Presenters Available**
Breakout Sessions

7A) Turbo Roundabouts and Unconventional Geometry Roundabouts -

*Grand Ballroom CD*

Moderator: Gene Russell, Kansas State University

**Presenters**

- **Bill Baranowski**, RoundaboutsUSA, *Turbo Roundabout Design? - Redesign of Park City’s 14 Year Old Deer Valley Roundabout*
- **Tim Murphy**, Delcan Corporation, *The Turbo Roundabout, A First in Canada*
- **Radoslaw Bak**, Cracow University of Technology, Poland, *Operational Problems and Capacity Analysis of Turbo Roundabouts – Polish Experiences*
- **Steven Chan**, Transoft Solutions Inc., *Design Vehicle’s Influence to the Geometric Design of Turbo Roundabouts*
- **Tomaz Tollazzi**, University of Maribor, Slovenia, *Alternative Types of Roundabouts*

7B) Organizational Structure for Delivering Innovative Roundabouts - *Redwood*

Moderator: Chris Tiesler, Kittelson & Associates, Inc.

**Presenters**

- **Dina Swires**, Washington State DOT, *A Region Traffic Engineer Perspective: Developing and Delivering Roundabout Intersections*
- **Chris Damitio**, Washington State DOT, *Project Development, Public Input & Delivery from a Design and Construction Project Engineer Perspective*
- **Kurt Stiles**, Washington State DOT, *Visual Communications (Design Visualization) During Project Development Stage*
- **Brian Walsh**, Washington State DOT, *The Road to Sustain Success and Project Concurrence*

7C) Various Models/Tools that Support Roundabout Choice in Design, Environmental, and Network Arenas - *Willow*

Moderator: Ahmed Aburahmah, City of San Diego, California

**Presenters**

- **Antonio Pratelli**, University of Pisa, Italy, and Gene Russell, Kansas State University, *Unconventional Roundabout Geometry for Large Vehicles or Space Constraints*
- **Kazunori Munehiro**, CERI, Japan, *Driving Behavior and Travel Path of Semi-Trailer on Roundabout*
- **Sepideh Eshragh**, Iowa State University, *Network Performance Improvement During Hurricane Evacuation Using Roundabouts*

2:45 p.m. - 3:15 p.m., 2nd Floor Pre-Function Area

Break

Poster Session 2 Continued – Presenters Available
3:15 p.m. - 4:45 p.m.

**Breakout Sessions**

**8A) Mini-Roundabouts - Grand Ballroom CD**
Moderator: Colin Ridding, Mott MacDonald

**Presenters**
- **Michael A. Gingrich Sr.**, Alternative Intersection Control, *Origins, Applications, and Examples of Double Mini Roundabouts*
- **Wei Zhang**, Federal Highway Administration, *Mini-roundabout Case Studies*
- **Scott Ritchie**, Roundabouts & Traffic Engineering, *FHWA Mini Roundabout Study*
- **Marko Rencelj**, University of Maribor, Slovenia, *Slovenian Experiences with Mini Roundabouts and Assembled Roundabouts*

**8B) Unique Roundabout Applications – Case Studies PART 2 - Redwood**
Moderator: Kirk Spaulding, Sanderson Stewart

**Presenters**
- **Tatsuo Takase**, Shinshu University, Japan, *Report on Pilot Project of Roundabout in Karuizawa Roppontsuji*
- **Kenneth Voigt**, Ayres Associates, *Challenges of Constructing Cheyenne’s First Dual Lane Five-Leg Roundabout*

**8C) Design Checks and Validation - Willow**
Moderator: Tom Blust, Oakland County Road Commission, Michigan

**Presenters**
- **Patrick McGrady**, Reid Middleton, *Roundabout Relationships: Validating Your Design*
- **Michael J. Wallwork**, Alternate Street Design, PA, *Improving Roundabout Designs*
- **Mark Lenters**, GHD Inc., *Geometric Design Heuristics for Modern Roundabouts*
Friday, April 18

7:00 a.m. - 10:00 a.m., Spruce

Registration

7:15 a.m. - 8:00 a.m., 2nd Floor Pre-Function Area

Breakfast

8:00 a.m. - 9:30 a.m.

Breakout Sessions

9A) Citizen Activism, Engineering Outreach, and Elected Official Perspectives -

*Grand Ballroom CD*

Moderator: Craig Parks, America Structurepoint

**Presenters**

- **Jeannette Taylor**, Jacobs Engineering, *Built It and They Will Come - Woodinville Tourist District Roundabouts*
- **Robert Dell-Ross**, City of Roswell, Georgia, *Lessons Learned from Roswell’s First Modern Roundabout*

9B) Evolution of Roundabout Practice in the United States – A Conversational Panel with Audience Participation - *Redwood*

Moderator: Brian Walsh, Washington State DOT

**Presenters**

- **Ken Sides**, City of Clearwater, Florida
- **Howard McCulloch**, NE Roundabouts
- **Jeff Shaw**, Federal Highway Administration


Moderator: Dan Dovey, King County, Washington

**Presenters**

- **Patrick Fleming**, Wisconsin DOT, *Shared Use Paths & Roundabout Sidepaths*
- **Mark T. Johnson**, MTJ Engineering, LLC, *Effective Lane Utilization with Flared Entry Design*
- **Troy Pankratz**, GHD Inc., *Design Considerations for 5 and 6 Leg Roundabouts*
- **Yashi Tandon**, National Capital Region Planning Board, India, *Designing Pedestrian Friendly Roundabouts in Rapidly Growing Cities of India*
9:30 a.m. - 9:45 a.m., 2nd Floor Pre-Function Area

**Break**

9:45 a.m. - 11:00 a.m.

**Breakout Sessions**

**10A) Complexities of Multi-Lane Roundabouts and Safety - Grand Ballroom CD**
Moderator: Nathan Belz, University of Alaska – Fairbanks

**Presenters**
- Andrew Plowman, WSB & Associates, Inc., *Safety Performances of Multi-Lane Roundabouts*
- Hillary Isebrands, Federal Highway Administration, *The Multi-lane Roundabout PDO Dilemma*
- Mark T. Johnson, MTJ Engineering, LLC, *Optimizing Roundabout Safety and Operations*
- Sam Bobko, Hatch Mott MacDonald, *The Roundabout Was Supposed to Reduce Crashes. What Happened?*

**10B) Unique Roundabout Applications – Case Studies PART 3 - Redwood**
Moderator: Lee Stuart, American Traffic Safety Services Association

**Presenters**
- Phil Weber, GHD Inc., *Freeway Termination Roundabouts*
- Pete Jenior, Kittelson & Associates, Inc., *Walnut Lane Traffic Circle Retrofit*
- Anne Sherwood, Halifax Regional Municipality, Canada, *North Park Street Roundabouts: A Halifax Urban Challenge*

**10C) Speed Management for Roundabouts - Willow**
Moderator: Andy Duerr, GHD, Inc.

**Presenters**
- John Denholm III, Lee Engineering, LLC, *A Review of Speeds at Roundabouts in North Texas*
- Victor L. Salemann, Transportation Solutions Inc., *Case Study of a Rural Roundabout*
- Stephan Kellner, WSP Canada Inc., *High-Speed Roundabouts: Case Studies in Quebec*

11:00 a.m. - 12:15 p.m., Grand Ballroom CD

**Closing Plenary Session**

**11) Town Hall Roundabout Forum**
Many licensure and certification agencies require the demonstration of continuing professional competency. Your attendance at this meeting entitles you to earn Professional Development Hour (PDH) units. This form is for your use in maintaining a record of the PDH units you have earned at this meeting. Complete this form and retain it. **Please do not return it to TRB.**

We recommend that you save this entire Final Program for your records should the licensure or certification agency request information from you. Reporting is done on an honor basis, and members are responsible for maintaining their own records.

The table below shows PDHs that can be earned for the continuing education activities included in the Transportation Research Board **4th International Conference on Roundabouts** held in Seattle, Washington on April 16-18, 2014.

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**Mark R. Norman**
Director, Technical Activities

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<table>
<thead>
<tr>
<th>APRIL 2014</th>
<th>SESSIONS</th>
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<tr>
<td>DAY</td>
<td>TIME</td>
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<tr>
<td>Wednesday, April 16, 2014</td>
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<td>2A) Metering and Other Operational Considerations for Roundabouts</td>
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<td>2B) Evaluation Elements of Roundabout Intersection Choices</td>
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<td>2C) Driver and Other User Behavior Relationship to Capacity/Safety</td>
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<td>1:00-2:45 p.m.</td>
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<td>3A) Constructing Roundabouts, Work Zone Design and the Use of Temporary Roundabouts</td>
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<td>3B) Unique Roundabout Applications - Case Studies PART 1</td>
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<td>3C) Safety: From HSM and State Safety Summaries of North America to ... Illumination</td>
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<td>4A) Truck Accommodations / Considerations at Roundabouts</td>
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<td>4B) Larger Policy, Planning, and Design Aspects of Roundabouts</td>
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<td>4C) Bicycle Design, Path Tendencies, and Accommodation of Vulnerable Users</td>
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<td>5A) Pedestrian Design, Accessibility, and Driver Yielding Studies in the U.S.</td>
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<td>5B) Agency Policy Development for Roundabouts</td>
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<td>5C) Modeling Capacity, Calibrating, Performance and Operational...Corridors</td>
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<td>10:00-11:45 a.m.</td>
<td>Guided Roundabout Tour</td>
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Total PDH Units:

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