

## THE NEW ITE ROUNDABOUT TASK FORCE

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The Institute of Transportation Engineers (ITE) International Board of Direction voted to establish the ITE Roundabout Task Force at its March 2008 meeting. The task force first convened at the ITE Annual Meeting and Exhibit in Anaheim, CA, USA, on August 19, 2008. Today the task force has a diverse membership of more than 60 people representing 26 states and four countries.

The goals of the task force are to provide products and services that advance the knowledge of roundabouts within the engineering profession and to promote broader acceptance of roundabouts by the public. The task force takes a holistic view of roundabouts and works to disseminate roundabout information and products to better serve the ITE membership at all levels. The task force also strives to disseminate information in a timely manner.

The task force serves as a forum for transportation practitioners to discuss design practices, considerations and standards affecting the design of roundabouts. Transportation practitioners can be a resource for and actively work with policy-makers in the transportation industry to develop a better understanding of the benefits roundabouts can provide to the transportation network.

During the first task force meeting, education stood out overwhelmingly as the profession's greatest need when it comes to roundabouts. The notion of who needs to be educated was widespread. Education is needed at all levels—for some agencies it is engineers, planners, policy-makers and decision-makers—for others it is council members, the general public, project and community stakeholders, maintenance and construction staff—for some, it is everyone.

The task force is working on a Roundabout Outreach Toolbox that will be a series of one- to four-page briefings on a wide range of roundabout topics (such as design philosophy, dispelling myths, maintenance issues, capacity, pedestrians/bicycles, visually impaired and access management). The task force also sponsored two roundabout sessions at the ITE 2009 Technical Conference in Phoenix, AZ, USA and will sponsor two roundabout sessions at the ITE Annual Meeting in San Antonio, TX, USA, in August 2009. The task force is working on a number of other initiatives and considers its efforts an excellent start.

## FOLLOWING A GOOD DESIGN THROUGH CONSTRUCTION

By Leah Ness, P.E., Traffic Engineer, Ayres Associates

The iterative process of design and the details put into the plan set are the beginning stages of constructing a roundabout. Executing the intended plans and efficiently completing construction while maintaining traffic flow at an intersection is another process in itself. The following construction notes describe the purpose of the bid item and tips for the field engineer and staff during the construction of a roundabout.

### *Pavement Markings*

Purpose: Pavement markings provide guidance to drivers as they approach and

traverse an intersection. The placement of pavement markings is critical to the operation of the roundabout (see Figure 1). A lane line that is off by inches at a multi-lane entry roundabout could direct motorists into the incorrect lane, causing path overlap and a potential increase in collisions.

What to look for: Make sure to meet with the contractor prior to laying out the pavement markings. Discuss the importance of the degree of accuracy in the location of the markings.

- Use survey equipment to locate and mark the key transitions of the pavement markings prior to placement.
- Use a string line to confirm that the entry pavement marking is directing traffic into the correct lane on a dual-lane approach.
- Be aware of the upcoming changes to the *Manual on Uniform Traffic Control Devices* (MUTCD) and related pavement marking changes.

### *Signing*

Purpose: Warning, regulatory and guide signs are all present at roundabouts to help drivers maneuver through intersections safely and efficiently. Signs having a clear message provide motorist information that can be easily observed and processed. Signing, in conjunction with pavement markings and geometry,

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Figure 1. Lane lines and circulating lane pavement markings at a multi-lane roundabout.

Photo courtesy of Ayres Associates.

guides motorists in making the correct decisions at roundabout intersections.

What to look for: Make sure the signage is not placed in the sight triangle of drivers on the approaches. Check the sign messages to confirm that they do not conflict with the pavement markings or other signs that are present. The signs and placement of signs should meet MUTCD standards and other warranted guidelines, if applicable.

### Curbing

Purpose: The sloped curb and barrier curb provide traffic calming effects for drivers (see Figures 2 and 3). The transitioning of a sloped curb in a high-speed area to a barrier curb near the intersection helps slow vehicular speeds. Mountable curbs on the truck apron allow trucks to complete turning movements while discouraging other vehicles from using the designated truck aprons. Curbing also aids in drainage of the intersection.

What to look for: Talk with the contractor about the curb transition areas prior to the pour and make sure the curb type is being constructed to the specifications of the detailed drawings. For mountable curb, measure the height of the curb face and slope to confirm that the curb will be able to accommodate large vehicles.

## NCHRP 3-65A, UPDATE OF FHWA'S ROUNDABOUTS: AN INFORMATIONAL GUIDE

By Lee A. Rodegerdts, P.E., Associate Engineer, Kittelson & Associates Inc., Portland, OR, USA and Justin A. Bansen, P.E., Senior Engineer, Kittelson & Associates Inc., Orlando, FL, USA

A team of U.S. and international researchers and practitioners is in the midst of developing the second edition of the Federal Highway Administration's (FHWA) *Roundabouts: An Informational Guide*. Since the publication of the first edition in 2000, recent research reports, including National Cooperative Highway Research Program Report (NCHRP) 572, *Roundabouts in the United States*, have provided new operational, safety and design tools anchored to how people use roundabouts in the United States.

In addition, practitioners throughout North America have gained new practical experience in implementing roundabouts and have prepared several sets of guidelines for state departments of transportation. These items are being incorporated in a critical and thoughtful way into a comprehensive update of the first edition.

The second edition is expected to retain much of the structure of the first edition, although some sections are expected

to be rearranged, moved to other chapters, or split into separate chapters to improve readability, understanding and its use as a reference. Among the items that will be updated:

- an increased emphasis on fundamental principles and the evaluation of trade-offs in planning and design decisions;
- operational analysis procedure consistent to the extent possible with the proposed 2010 *Highway Capacity Manual*, NCHRP Report 572 and guidance on the use of other commonly used operational models;
- safety analysis procedure consistent to the extent possible with the proposed *Highway Safety Manual*, anchored to NCHRP Report 572 and other research;
- a restructured geometric design chapter that emphasizes fundamental principles and more clearly differentiates single-lane, multilane, and mini-roundabout design;
- updated guidance on accommodating bicycles and pedestrians, including accommodating persons with disabilities consistent to the extent possible with recent research and U.S. Access Board policies;
- updated guidance on traffic control device application consistent to the extent possible with the proposed next edition of FHWA's *Manual on Uniform Traffic Control Devices*;
- guidance on illumination consistent with the recently released design guide on roundabouts by the Illuminating Engineering Society of North America;
- new information on construction and maintenance; and
- more photographs of U.S. and international applications, drawings of non-ideal geometric conditions and case studies.

The project is scheduled for completion in 2009, with publication anticipated in 2010. For further information or to contribute photographs or examples, please contact Lee Rodegerdts, 503-228-5230, lrdegerdts@kittelson.com, or Justin Bansen, 407-540-0555, jbsansen@kittelson.com. ■



Figure 2. Mountable curb on the splitter island and mountable island nose.



Figure 3. Barrier curb on the splitter island.