

Institute of Transportation Engineers

**DESIGNING FOR ALL USERS  
ITE MEGA ISSUE WHITE PAPER**

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DRAFT WHITE PAPER

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Designing for All Users  
Mega Issue White Paper  
Institute of Transportation Engineers  
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**Introduction**

Increased attention is being paid to the need for transportation professionals to better accommodate the needs of *all* roadway users in the planning and design of transportation systems. To stimulate discussion and raise awareness of this issue, “Designing for All Users,” has been identified as a Mega Issue and special focus area for the consideration of the International Board of Direction (IBOD). The outcome of this effort is intended to help set the course for ITE’s future role in addressing this issue.

This paper discusses the emergence of this issue, outlines the challenges it presents to the transportation professional and identifies ITE’s potential role in helping meet these needs. For additional background information, a supplementary appendix is provided to detail related ITE resources and initiatives.

**Defining the Issue**

*Background*

Today, transportation professionals find themselves working in a complex world. They strive to balance the needs of a broad range of transportation users within diverse neighborhoods and contexts. To succeed, they must design transportation systems that not only provide safe access and mobility but also enhance the community and surrounding areas they serve. The successful design of roadways is largely dependent on the transportation professional’s ability to define, understand and meet the needs of a diverse set of roadway users.

*What is Designing for All Users?*

“Designing for all users,” as defined for the purpose of this paper, is a “catch all” phrase that incorporates many important principles related to transportation design that meets community needs. These qualities include:

- Safe and efficient travel on all modes of transportation for individuals of all ages and abilities
- Access and mobility on all modes of transportation for individuals of all ages and abilities
- Quality transportation systems that enhance communities by complementing neighborhood character and qualities
- Street systems that offer a variety of modal choices and security to all travelers

*Who are the Users?*

Transportation professionals must be concerned with designing roadway systems that not only accommodate automobiles, but also—pedestrians and bicyclists, freight, buses, rail—and travelers of all ages and abilities. The following list highlights the primary user groups other than automobiles that should be considered in roadway design.

- **Pedestrians and Bicyclists**—Pedestrians and bicyclists are among the most vulnerable road users and thus require special consideration. Many roadways lack sidewalks, have inadequate crosswalks or lanes too narrow to share with bicycles. Inadequate consideration of these users has contributed to significant safety problems. Recent statistics show that thirteen percent of traffic fatalities are pedestrians or cyclists, with less than 6 percent of all trips made on foot or by bicycle. In addition to safety benefits, successful accommodation of pedestrians and bicyclists contributes significantly to overall improved quality of life within communities.
- **Persons with Disabilities**—Transportation systems must accommodate a broad range of users in this category including blind persons and those who are partially sighted, people with mobility and cognitive impairments and persons who deaf or hard-of-hearing. Specific access requirements apply to all elements of the transportation system including parking spaces, pedestrian pathways, and roadways, bus stops and shelters, and public transportation.
- **Older Drivers and Pedestrians**—The demographic character of the U.S. is changing in dramatic fashion. In 2002, 12 percent of the U.S. population was 65 or older. It is expected that the percentage will grow by 79 percent with an estimated 18 percent of the population being 65 or older in 2025. Older drivers and older pedestrians have unique individualized needs such as slower walking speeds, slower reaction times and decreased vision. These qualities result in a significant reduction in overall mobility and consequently lead to a higher risk of serious injury or fatality.
- **Younger Drivers and Pedestrians**—Special attention needs to be given to addressing the needs of younger drivers and pedestrians. This user group typically demonstrates a lack of experience and higher likelihood of risk taking.
- **Freight/Trucks**—Accommodation of trucks and other large vehicles is critical to the design of any successful transportation system. Improvements such as enhanced off-street loading and unloading areas, improved loading dock facilities and more effective long-range strategies for handling urban goods movement will result in significant benefits to the transportation system and community as a whole. Particular attention to accommodating large vehicles is required in areas that service a predominance of oversized vehicles such as event centers or industrial areas.
- **Transit**—A balanced transportation system must allow choices for alternative modes of transportation such as transit. Street systems that adequately accommodate transit service have been shown to contribute to the livability of a community. Consideration of transit early in the design process allows road design to facilitate improved reliability of transit service and safer and more convenient access to transit stops.
- **Emergency and Maintenance Services**—Appropriate consideration must also be given to emergency and maintenance services. Problems arising from accommodation of these services can often be minimized if they are considered early in the project-planning phase.

Although not specifically identified above, transportation designers need to be cognizant of other less common modes of travel also accommodated within the public right-of-way. Examples of such uses include segways and specific types of non-motorized transportation such as skateboards and in-line skates. Finally, special thought may also need to be given to adequately serve individuals who do not speak or understand the primary language that is used for traffic control in a specific locality.

### **Designing for All Users—A Change in Philosophy**

Transportation services have traditionally been focused on the provision of roadways that satisfy the safety and mobility needs of the driving public and maximize the use of the right-of-way and investment. A centralized goal has been providing a cost-efficient transportation facility, generally complying with established design criteria (Source: ITE, Smart Growth Guidelines).

However, recent pressures from diminished funding, regulatory changes, and community activism have brought about a shift in this thinking. In an era of decreased funding, the use of the existing roadway facilities to accommodate all transportation users has become paramount. The reality suggests that more funding must be invested into the existing infrastructure requiring existing roadways to be stretched to accommodate all system users. Transportation right-of-way must now serve a broader set of functions. This emerging philosophy recognizes that right-of-way should be used to best serve the *total* need of the public. It includes using the right-of-way to accommodate multi-modal transportation such as roadways, pedestrian-ways, bikeways, transit facilities and other multi-modal transfer locations. (Source: ITE, Smart Growth Guidelines)

Changes in legislation have also inspired a change in the way transportation systems are developed. The 1991 passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) has been identified as a key catalyst to setting the stage for a new era of transportation. This legislation allowed dramatic increases in the flexibility of funding and stressed the importance of preserving historic and aesthetic character as well as highlighting the need to enhance communities through transportation design. The recent passage of SAFETEA-LU heightened this shift by highlighting new opportunities for closer coordination with communities, civic organizations and businesses.

New design guidelines that cover access for people with disabilities also sparked change with the release of the Americans with Disabilities Act (ADA) of 1990. Subsequent updates to these guidelines have provided detailed access requirements for a wide range of transportation facilities included within the public right-of-way. This legislation has resulted in major changes to where and how road users are accommodated.

The emergence of many new community activists groups and transportation reform advocates such as Project for Public Spaces and the Surface Transportation Policy Project has also done much to bring to light the need for change in the way we develop our transportation systems. The landmark 1998 National Thinking Beyond the Pavement workshops hosted by the Maryland State Highway Authority furthered this sentiment and encouraged a new way of thinking amongst the transportation community (Source: Gary

Toth, NJFIT: Future in Transportation). This conference brought to light many ideas related to designing for all users and emphasized the importance of designing with context in mind.

This new philosophy along with a renewed awareness of the essential nature of the integration of land use and transportation within the planning process has helped lead this paradigm shift.

### **What are the benefits?**

The easily identifiable benefits of designing for all users include improved access, improved safety, reduced emissions, and contribution to improved livability within communities. One other benefit that should not be overlooked is the potential health benefit.

The design of a transportation system can have a direct impact on the ability for non-motorized users to travel safely and comfortably on the street network. Auto-oriented design and lack of transportation choices forces car dependency and decreases opportunity for walking and cycling. The Center for Disease Control (CDC) considers obesity to be the nation's fastest rising public health problem and has identified the built environment and the transportation infrastructure as a contributor to this epidemic. The number of trips taken by pedestrians has dropped 42% in the last 20 years. Creating safer places to walk and bicycle could have a significant impact on health as more than one quarter of all trips in this county are one mile or less. (Source: CDC, Transportation and Health website).

### **Other Related Concepts**

The following terms are often used in the transportation industry to convey concepts that are directly related to designing for all users.

- **Smart Growth**—Smart Growth is defined as “a set of principles that have been identified as desirable methods to achieve urban growth, which includes transportation system efficiency, preservation of transportation resources, maximum effectiveness of transportation investment, reduced urban sprawl and reduced vehicle pollutant emissions.” (Source: ITE, Smart Growth Transportation Guidelines)
- **Context Sensitive Solutions (CSS)/Context Sensitive Design (CSD)**—The Federal Highway Administration defines CSS as “ a collaborative, interdisciplinary, approach that involves all stakeholders in developing a transportation facility that complements its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. Context sensitive design applies to the project’s engineering design features, and may include features that help the project fit harmoniously into the community.” (Source: FHWA, CSS in the Transportation Planning Process)
- **Complete Streets**—Complete streets are defined as “streets designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.” (Source: Complete the Streets Web site, completethestreets.org)

- **Traffic Calming**—Traffic calming is another proposed way of reclaiming roads for more equitable use by different users. Many communities around the world have demonstrated successful cases of sharing the road with non-motorized users by implementing area-wide traffic management and speed reduction measures. Traffic calming is defined by ITE as “the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.” (Source: ITE, Traffic Calming State of the Practice)

### **ITE’s Strengths**

The purpose of the Institute is to enable transportation and traffic engineers, transportation planners, and other professionals with knowledge and competence in transportation and traffic engineering to contribute individually and collectively toward meeting *human needs for mobility and safety*. A key aspect in this purpose statement is the implication for the need to meet the safety and mobility needs for all users of the roadway.

ITE has many unique characteristics that position it to effectively address many of the challenges set forth by issues related designing for all users. The following list summarizes some of ITE’s distinguishing characteristics:

- **International network** of over 17,000 individual members in sections, districts and chapters
- Ability to promote **information exchange** through a variety of established communication channels (Conference Sessions, *ITE Journal*, newsletters, specialty councils, web site, Washington Weekly, bookstore, listserves, direct mail and email)
- Ability to connect with **local government officials** and **private sector practitioners**
- Recognized and respected organization responsible for high quality **professional development** training and resources
- Respected voice in the community that can serve as effective **advocate**
- Ability to **convene** and gain feedback from a diverse cross section of stakeholders.

### **ITE’s Role**

There are many aspects to designing for all users and multiple roles that ITE can play in meeting these challenges. However, it is recognized that it is not feasible for ITE to be a leader in all areas.

The intent of this process is to allow the IBOD the opportunity to discuss the subject areas and roles identified in this paper and to identify the areas where ITE contributions and leadership would be most beneficial. This is not to say that areas not listed in this paper will be eliminated from ITE activities such as conference sessions, publications, newsletters, etc. ITE members themselves will continue to shape and define the list of target issues. The knowledge-based approach presented here is intended to set an agenda and establish a rational plan for utilization of staff, volunteer and financial resources.

The remainder of this paper defines the target audience and summarizes what are perceived to be the key institutional/policy and technical activity areas where ITE could play a role.

*Who is our audience?*

Before considering the question of ITE's appropriate role in the variety of targeted areas, it is important to identify the intended audience and how they might be best served.

The most obvious audience to benefit from ITE's involvement is transportation professionals, including federal, state and local practitioners and consultants. Other audiences we may wish to influence are universities, appointed and elected officials and the communities being served. In determining the appropriate role for ITE to play, it is important to keep in mind the broad range of audiences that we could potentially address.

**Positioning ITE's Involvement in the Issue**

There are several challenges or target areas that transportation professionals face in attempting to achieve a quality transportation system that sufficiently meets the needs of all of its users. With the numerous challenges, there are also many dimensions to each of these challenges. The key to this process is to identify those areas and roles that ITE is best suited to lead.

Two primary categories of issues are presented in the following discussion: Institutional/Philosophical Challenges and Technical Challenges. ITE may play a role in some or all of these issues. Suggested roles and actions are provided for the consideration of the IBOD.

Possible ITE roles include:

- Provider
- Partner
- Convener
- Advocate
- Clearinghouse

Primary audiences:

- Transportation professionals
- Communities (general public)
- Decision makers
- Universities (and other research communities)

**Institutional/Policy Challenges**

There are several institutional topics that must be addressed in order to successfully design to accommodate all users.

### Flexibility in Design

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Advocate Provider Partner	High	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	High

A key challenge to designing for all users is understanding and accepting the notion that transportation design is unique to a specific situation. One size does not fit all; the setting and character of the area, values of the community, and needs of the highway users vary considerably by location. This requires the transportation professional to have a very clear understanding of the goals of a specific community in order to develop a solution that truly meets its needs.

#### Candidate ITE Actions:

- Promote the benefits and need for jurisdictions to adopt flexible design criteria including the use of guidance documents developed by ITE and others such as AASHTO and FHWA
- Work with partners to identify and overcome barriers to successful implementation of flexible design criteria
- Work within and outside ITE to identify needs for additional research
- Disseminate and encourage widespread use of the new ITE proposed recommended practice on context sensitive solutions for major urban thoroughfares
- Develop recommended practices or informational reports on traffic calming measures that allow flexibility
- Develop training courses that demonstrate successful applications of flexible design
- Partner with other associations to develop additional guidance on comprehensive planning and site design to support CSS and diverse community needs.

### Prioritizing the Needs of Users

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Advocate	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> <li>• Communities</li> <li>• Decision makers</li> </ul>	Medium

A key concept for communities and professionals to understand is that *all* needs of *all* users can never be fully accommodated. Roadways are intended to serve different functions and with this, have differing abilities to accommodate the needs of its different users. Roadway “improvements” intended to benefit safety and mobility for one mode may in fact have a negative effect on another mode of travel. For example, wider roads may allow for more vehicle mobility and safety, but may also lead to a decrease in mobility and safety for pedestrians. The transportation professional and public need to be cognizant of a balance that is appropriate for each individual situation.

It is generally agreed that all roadways should meet some minimum level of accommodation for all potential users; however, it may also be important to establish priority for certain modes under certain conditions. A process of determining the best solution for a street network may involve balancing the needs of the user groups that it is intended to serve. In part, the measure of success is determined by how well the prioritization matches the established community goals.

Candidate ITE Actions:

- Promote the concept of prioritizing individual modes of travel on each roadway segment based on community desires

### **Professional Development**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Provider Clearinghouse Advocate	High	<ul style="list-style-type: none"> <li>• Transportation professionals</li> <li>• Universities</li> </ul>	Medium

Candidate ITE Actions:

- Assess ITE and outside training courses and identify gaps in existing training
- Develop relevant training courses, webinars and technical sessions
- Work to include concepts of designing for all users in transportation curriculum
- Compile ITE resources and organize on web site for easier dissemination
- Provide training on new guidance materials, standards and recent legislation

### **Awareness and Outreach**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Advocate Partner	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	Low/Medium

Candidate ITE Actions:

- Encourage ITE councils, districts, sections and chapters to promote increased awareness of concepts relating to designing for all users
- Partner with other organizations such as TRB, FHWA, FTA, EPA, APA, CNU, ASLA, and AASHTO to widely disseminate the broad range of existing guidance documents that promote design for all users
- Provide updates to our membership on relevant changes to existing design guidance (i.e., AASHTO) and legislation that has a direct impact on designing for all users (i.e., ADA)

### **Community and Stakeholder Involvement**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Partner Advocate	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	Low/Medium

		<ul style="list-style-type: none"> <li>• Communities</li> <li>• Decision makers</li> </ul>	
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It is widely accepted that successful project development and design processes must engage both the designer and a broad cross-section of the stakeholders from the conceptual phase of the project development process. Stakeholders include residents, developers, emergency service providers, transit providers, transportation and urban planners, landscape architects, and business owners. An understanding of each of the unique needs of the stakeholders is critical to the process.

Candidate ITE Actions:

- Work with advocacy organizations that promote citizen participation to educate transportation professionals on successful communication techniques
- Sponsor seminars/training on successful techniques for community participation that are developed by others, such as design charrettes
- Promote the importance of community involvement through all levels of ITE membership

## Technical Issues

In addition to the institutional/policy topics, there are numerous technical challenges that must also be addressed.

### Pedestrians and Bicycles

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Provider Partner Advocate	High	<ul style="list-style-type: none"> <li>• Transportation professionals</li> <li>• Communities</li> <li>• Universities</li> </ul>	High

It is the policy of the Institute of Transportation Engineers that the safe and efficient movement of pedestrians should be an integral part of the planning, design, operation and management and maintenance of transportation facilities. The Institute urges that effective pedestrian safety programs be developed and maintained, and that transportation agencies actively participate in formulating, guiding and administering these programs. (ITE Policies 1989; Revised 1999)

It is also the policy of the Institute of Transportation Engineers that the safe and efficient movement of bicycles should be considered in the planning, design, operation and management and maintenance of transportation systems. The Institute urges that effective bicycle safety programs be developed and maintained and that transportation agencies actively participate in formulating, guiding, and administering these programs. (1994; Revised 1999)

Candidate ITE Actions:

- Develop tools to allow transportation professionals the ability to more accurately predict trip generation for pedestrians and bicyclists
- Work with advocacy groups to help increase awareness of the individual needs of pedestrians and cyclists
- Identify the need for additional research and work with partnering organizations to establish a framework for funding new research
- Update the ITE website to include a comprehensive list of existing ITE tools and resources available addressing pedestrian and bicycle design and establish links to other related sources of information such as the clearinghouse of information available through the University of North Carolina, Pedestrian Bicycle Information Center
- Establish a mechanism through the ITE Councils to continue to update existing innovative practice reports for pedestrians and bicyclists
- Continue to work with partnering organizations such as the Robert Wood Johnson Foundation to develop new tools and case studies demonstrating successful examples of pedestrian design
- Work with the ITE Pedestrian and Bicycle Council or other organizations to develop guidance on the use of shared lane pavement markings and when and how to appropriately mark bicycle lanes
- Work with the ITE Pedestrian and Bicycle Council or other organizations to develop guidance for mid-block crossings
- Work to include design elements for pedestrians and bicyclists into transportation curriculum
- Provide timely dissemination of research related to design of pedestrian and bicycle facilities
- Support efforts to include accommodation of pedestrians and bicyclists in national standards and design manuals such as the MUTCD, AASHTO Green Book and upcoming reports such as the Highway Safety Manual.
- Continue to develop and conduct training courses on pedestrian and bicycle design

**Accessibility**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Partner Convener Advocate Provider	High	<ul style="list-style-type: none"> <li>• Transportation professionals</li> <li>• Communities</li> </ul>	Medium

It is the policy of the Institute of Transportation Engineers to support efforts by governmental authorities with input from older persons and persons with disabilities and their representative organizations to improve mobility of these groups throughout the transportation system, provided that sufficient flexibility is given to determine the most effective and efficient combination of services possible. (ITE Policies, Revised 1994)

Candidate ITE Actions:

- Provide timely information on changes to legislation with direct impact on transportation professionals
- Facilitate member response to proposed legislation such as the ADA Notice of Proposed Rule Making
- Continue working with the US Access Board and Easter Seals Project Action to provide sessions at our technical conferences, web seminars and face to face training
- Foster dialogue amongst the many stakeholders representing differing viewpoints on this issue. ITE is uniquely positioned to perform this role by maintaining a close working relation with the US Access Board and many members of the visually and mobility impaired communities
- Maintain and update our website containing an electronic toolbox on accessible intersections
- Continue to disseminate technical resources developed by other organizations to aid in designing transportation systems that accommodate all users
- Support research that helps to better define the needs of this user group such as research on travel speeds of the visually and mobility impaired

**Older/Younger Driver/Pedestrians**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Partner Advocate	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> <li>• Communities</li> <li>• Universities</li> </ul>	Low

Candidate ITE Actions:

- Continue working with partner organizations such as AAA to research and document characteristics such as walking speeds for older pedestrians
- Partner with organizations with expertise in human factors and disseminate information to our membership
- Disseminate and promote awareness of existing guidance materials such as FHWA's *Older Driver Handbook*
- Take a lead role in promoting the importance of designing highways and traffic control devices to meet the needs of younger and drivers
- Promote research that investigates the design and application of traffic control devices as they apply to the specific needs of younger and older populations

**Safety Impacts of Designing for All Users**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Clearinghouse Partner Provider	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	Low

Perhaps one of the most significant challenges in designing for all users is to understand the safety and operational impacts of alternative designs.

Candidate ITE Actions:

- Gather existing research on safety implications of alternative designs and direct our membership to relevant studies
- Identify design features associated with designing for all users that may involve safety implications and identify successful approaches to address those issues
- Assess safety impacts of lateral clearances to trees and other design features adjacent to the traveled way (urban roadside clearance)
- Gather existing research on the impact of roadway and lane width on operating speeds and develop guidance on how to make narrower lanes work more safely and efficiently (i.e., NCHRP Panel 3-72)
- Identify gaps in existing resources and work with partnering organizations to establish a framework for funding new research

### **Freight/Curbside Management**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Advocate Partner Provider	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	Low

Candidate ITE Actions:

- Conduct research and develop truck trip generation rates for major retail and industrial uses
- Promote the application of guidance materials aimed at improving the design of loading dock facilities
- Promote the need for intersection design that accommodates the turning requirements of large vehicles as well as the needs of other users such as pedestrians and bicycles
- Support the development of properly designed intermodal connections (port, rail, air) that are well integrated with the surface transportation system
- Disseminate information and conduct sessions at technical meetings on freight trends, parking needs and loading and service demands
- Promote the need for more effective long range strategies for handling freight

### **Transit**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Partner Provider	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	Low/Medium

Candidate ITE Actions:

- Disseminate information that supports accommodation of transit in the design of urban roadways

- Support dissemination and use of guidelines on the proper location and design of bus stops
- Work with the ITE Transit Council to develop of an informational report on successful examples of transit oriented development
- Continue training and information dissemination on BRT through partnership with FTA and ASCE
- Disseminate updated FTA report on Characteristics of BRT
- Promote the use of new technologies to improve transit customer service such as real time traveler information
- Promote the development of tools to help provide safe and secure transit systems

**Site Development for All Users**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Provider	High	<ul style="list-style-type: none"> <li>• Transportation professionals</li> </ul>	Medium

Candidate ITE Actions:

- Continue to provide tools with techniques for integrating land use development with the surrounding street network, sidewalks, and adjacent land uses to better accommodates all users
- Work with the ITE Transportation Planning Council and the Canadian District of ITE to progress ITE’s existing proposed recommended practice on promoting sustainable transportation through site design

**Safe Routes to School/School Siting**

Primary Role	Level of Effort	Primary Audience	Current Level of Effort
Provider Partner Advocate	Medium	<ul style="list-style-type: none"> <li>• Transportation professionals</li> <li>• Communities</li> </ul>	Medium

Safe routes to school programs help provide a safer environment for children who walk or bicycle to school. They also encourage more children to become physically active and improve traffic safety in the vicinity of schools.

Candidate ITE Actions:

- Work with the ITE Traffic Engineering Council to develop a technical resource on transportation issues related to school siting. Support this effort by encouraging necessary research into safety implications of school locations.
- Continue partnership with other organizations such as the University of North Carolina, Pedestrian Bicycle Information Center, the Robert Wood Johnson Foundation and the Partnership for a Walkable America to develop new tools
- Advocate for partnerships between PTA’s, school boards and the transportation profession for improved transportation planning in school areas

## Appendix

### ITE Resources for Designing for All Users

#### **Publications**

##### *Publications—Design*

#### **Guidelines for Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities**

ITE, in a partnership with FHWA, EPA, and the Congress for New Urbanism, is developing a guidance document for implementing the principles of context sensitivity, smart growth, and new urbanism on major roadways (arterials and collectors) in urbanized areas. Walkability will be a fundamental component of the design guidance. Draft guidance materials are being finalized for publication. A final report is expected in March 2006.

#### **Smart Growth Guidelines, A Proposed Recommended**

The ITE Smart Growth Task Force, comprised of members of the Traffic Engineering, Transportation Planning and Transit Councils developed an ITE Proposed Recommended Practice on Smart Growth. This report provides guidance on the types of transportation systems that support and are most efficient with smart growth development. The report also provides information and suggestions as to how to support smart growth objectives and concepts with transportation facilities and services. This report is currently available through the ITE Bookstore.

#### **Geometric Design Handbooks**

ITE is in the process of developing a series of geometric design handbooks including volumes on (1) freeways and interchanges; (2) urban roadways and (3) rural roadways. The first of these volumes on freeways and interchanges is now available. It is anticipated that the urban and rural volumes will be available in 2006.

#### **Guide to Promoting Sustainable Transportation Through Site Design**

The Canadian Institute of Transportation Engineers (CITE) has completed proposed guidance site design with information on promoting accessibility by modes other than the single occupant automobile. This report is available through the ITE Bookstore.

#### **Traffic Access and Impacts Studies for Site Development**

The Transportation Planning Council has updated and published a new ITE Recommended Practice, Traffic Impact Analyses for Site Development. This updated proposed recommended practice describes the key elements required for preparing and reviewing access and impact studies for new and expanding developments. The report also reflects changes in the state-of-the-practice and provides the user with a broad overview of key considerations for site layout and

design and its impact on travel demand, multi-modal impacts and level of service objectives.

### **Traffic Calming: State of the Practice**

This report is a product of a national traffic calming technical assistance project by FHWA in partnership with ITE. At the local level, traffic calming responds to public concerns about speeding and cut-through traffic. Citizens look to their elected officials, and elected officials look to transportation professionals for technical solutions. The purpose of this report is not to advocate for or against traffic calming but rather to provide balanced information so readers can make their own informed decisions. ITE, 1999.

### *Publications— Pedestrian and Bicycle*

#### **Improving the Pedestrian Environment Through Innovative Transportation Design**

Through a partnership with the Robert Wood Johnson Foundation, ITE has completed a report that compiles best practices from communities demonstrating improved walkability and accessibility through changes to the planning and development of their transportation network. Over 15 case studies were gathered and incorporated into the report based on an international call for best practices.

#### **Pedestrian Signal Safety for Older Pedestrians: Adapting Pedestrian Signals To Meet The Needs of Older Pedestrians**

ITE was awarded a contract with the AAA Foundation for Traffic Safety to evaluate pedestrian signal design and walking speeds of older pedestrians. The project is also studying pedestrian countdown signals and develops guidelines for their use. Five locations have been selected and data analysis has begun. Results from this effort will be published in mid-2006.

#### **Bicycles and Pedestrian Counts—National Documentation Program**

The ITE Pedestrian and Bicycle Council has initiated the development of an informational report for local agencies to help document the usage and demand for pedestrian and bicycle facilities. This effort will include the establishment a standard count methodology and data collection methodology.

#### **Design and Safety of Pedestrian Facilities**

This report was approved in June 1997 as a Recommended Practice of the Institute of Transportation Engineers. It discusses guidelines for the design and safety of pedestrian facilities to provide safe and efficient opportunities for people to walk near streets and highways.

#### **Alternative Treatments for At-Grade Pedestrian Crossings**

The ITE Pedestrian and Bicycle Task force prepared this informational report, which documents studies on crosswalks and warrants used by various entities. The report summarizes studies on pedestrian crossings and assembles in a single document the various treatments currently in use by local agencies in the U.S.,

Canada, Europe, New Zealand and Australia to improve crossing safety for pedestrians at locations where marked crosswalks are provided. The report also summarizes the results of various studies conducted by public agencies on pedestrian-related collisions, including those documenting the results of removing crosswalk markings at uncontrolled locations. The appendix includes policies of specific agencies on where crosswalks are provided as well as typical crosswalk signing and striping plans. ITE, 2001

### **Innovative Bicycle Treatments**

This report, developed by the ITE Pedestrian and Bicycle Council identifies and shares information on approximately 50 bicycle treatments. The treatments include on-street innovations such as contra-flow bike lanes, shared bike/bus lanes, bicycle boulevards, raised bike lanes and colored bike lanes. There is information on trail facilities including one-way trails and median trails. This technical report, divided into eight sections, also summarizes treatments for bicycles at intersections, bicycle detection, unique bicycle signs, traffic calming accommodations and bicycle parking. ITE, 2002

#### *Publications—Other Modes*

### **Segway Investigations**

The Pedestrian and Bicycle Council completed a white paper that was presented at the 2004 TRB Annual Meeting on information related to the use of segways. The council is currently discussing the opportunity to develop a recommended practice on the use of segways.

### **Highway-Railroad Grade Crossing Handbook**

ITE is currently working with the Federal Highway Administration to update FHWA's 1986 Highway-Railroad Grade Crossing Handbook to reflect current practices regarding highway-rail crossings and related activities. It is expected that the revised report will be available in 2006.

#### *Publications—Schools*

### **Establishing Reduced Speed School Zones**

Based on a 1997 survey conducted by the ITE Transportation Safety Council Committee, TSC-4S-06, of processes and procedures used to establish Reduced Speed *School Zones* (RSSZ). The survey asked respondents what criteria was used in deciding when to install RSSZ, the locations and lengths of zones, speeds at which zones are normally posted and the amount of leniency or tolerance given by the police before issuing a citation for speeding in a zone. The survey also requested any before and after accident and speed data showing the effects of installing a zone. ITE, 2000.

### **Survey of Traffic Circulation and Safety at School Sites**

This report presents the responses from over 100 questionnaires sent to transportation engineers and planners in the mid-1990s. The committee's scope included planning, design, and operations actions. The scope was limited to

elementary and middle schools. The report presents a sample of traffic engineering practices that attempt to address school traffic issues in the United States. From the comments proffered by the respondents, the reader can also get a sense of institutional deficiencies and the practitioners need for more information upon which to base engineering decisions. ITE, 1998.

### **School Trip Safety Program Guidelines**

Sets out guidelines for improving the safety of young student pedestrians. Intended for use by educational, engineering, enforcement, parent/teacher, and other organizations in a locally planned, coordinated *school* transportation safety program. An ITE Recommended Practice, 1984.

## **Training**

### *On-line Learning Courses*

#### **Alteration of Pedestrian Facilities within the Public Right-of-Way (PROW)**

Four modules are included (1) Pedestrian Accessibility (2) Planning, Engineering and Design within the PROW (3) Accessible Sidewalks and Pedestrian Access Routes and (4) Accessible Pedestrian Crossings including the Design of Accessible Pedestrian Signals

#### **Transportation Planning - Site Impact Analysis:** Course Length: 6 hours

This course is part of the planning series and has been developed as a guided tutorial to assist transportation professionals in identifying the steps and tools involved in traffic access and impact studies for site development. A case study is used to illustrate the steps in the process.

### *Seminars*

#### **Traffic Calming:** Course Length: 1 Day

Available on-line on the ITE Web site ([www.ite.org/traffic/tcseminar.htm](http://www.ite.org/traffic/tcseminar.htm))

ITE and FHWA developed a 1-day seminar for transportation professionals on Traffic Calming. These seminar materials are intended for use by LTAP centers and other professionals interested in educating others on the subject. The following sessions include: Introduction Toolbox of Traffic Calming Measures Engineering and Aesthetics Impacts Legal Authority and Liability Emergency Response and Other Agency Concerns Procedures and Warrants Main Road

#### **Workshop on Wayfinding at Intersections**

In cooperation with the US Access Board, ITE convened transportation engineers, orientation and mobility specialists, and disability organization representatives in a workshop to consider potential changes in curb ramp and intersection design to provide directional cues to crossing travel by pedestrians who have vision and mobility impairments. The workshop was conducted in October 2004 in Washington, DC and summary materials were made available in the spring of 2005.

## **Bus Rapid Transit**

ITE and its partners, the Federal Transit Administration (FTA), the Transportation and Development Institute (TD&I) of the American Society of Civil Engineers (ASCE) and the National Transit Institute (NTI) have jointly developed a seminar on bus rapid transit. This seminar provides information on essential elements of a BRT system; the role of planning, engineering, operations, vehicle design and ITS in developing a BRT system and the identification of mutual traffic/civil engineering issues essential to optimal design and operation of BRT systems. This seminar is scheduled to be conducted at up to three more locations in 2006.

### *Web Seminars*

#### **Innovative Bicycle Treatments:** Course Length: 1.5 hours

This objective of this seminar is to share information on a wide variety of innovative treatments to accommodate bicycles. The seminar draws on the 2002 ITE Informational Report “Innovative Bicycle Treatments,” but also presents a number of innovations that have occurred since. At the conclusion of the Web seminar the participant will become familiar with innovative bicycle treatments in use in the US and abroad, understand advantages and disadvantages of bicycle treatment innovations, become aware of available research conclusions on specific treatments and identify sources of additional information on specific treatments.

#### **Revised ADA Guidelines:** Course Length: 1.5 hours

U.S. Access Board staff will provide an overview of a second draft of its proposed accessibility guidelines for the public right-of-way (PROW), which was released on November 23, 2005. The new draft incorporates many of the industry and consumer recommendations submitted in comments to the board's June 2002 draft. The board's guidelines, which cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, roundabouts and other components of PROW, serve as the basis for U.S. Department of Justice and U.S. Department of Transportation standards. This briefing is important to transportation professionals because the current ADA standards were developed largely for buildings and facilities on sites, which makes it difficult for the standards to be applied to PROW.

#### **Site Impact Analysis:** Course Length: 1.5 hours

This training was developed to assist transportation professionals in identifying the steps and tools involved in traffic access and impact studies for site development. Upon completion, the participant will be able to: undertake a site impact analysis; collect required traffic data; use appropriate analysis tools; interpret results; suggest improvements; and prepare a full report.

#### **Overview of Safe Routes to School Program:** Course Length: 1.5 hours

Description: This seminar will focus on the transportation professional's role in creating Safe Routes to School. The seminar will provide input and guidance on:

- Overview of the new, Federal Safe Routes to School Program
- What are Safe Routes to School programs?
- What types of activities are usually part of Safe Routes to School programs?
- How does a transportation professional become actively involved?
- What short-term and long-range engineering tools should be considered?
- How are Safe Routes to School programs and improvements funded?
- What resources are available?

## **Web Resources**

### **Accessible Intersections for Pedestrians who are Blind or Visually Impaired**

The Traffic Engineering Council was responsible for overseeing the committee that developed an electronic toolbox for pedestrians who are blind or visually impaired. This website is available online at:  
<http://www.ite.org/library/accessibleint.asp>

### **Transportation and Active Living Website**

ITE has recently initiated the development of a website containing several health and transportation related resources. The site currently available at <http://www.ite.org/activeliving/index.asp> houses the papers that were prepared for several ITE Technical Conferences, several of the pedestrian award submissions, and links to other related websites. ITE will continue to update and populate this site through the coming year.

### **Traffic Calming Web site**

<http://www.ite.org/traffic/index.html>