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ACCESSIBLE COMMUNITY TRANSPORTATION IN OUR NATION

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Easter Seals DISABILITY SERVICES

Accessible Pedestrian Signals:

Making Your Community Safer and More Accessible for Everyone

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Independent travel with access to public and private transportation, places of business and government services begins with a pedestrian-friendly environment that accommodates the unique abilities of all citizens. In recognition of the significant role of accessible intersections in achieving independent mobility for people who are blind or visually impaired, the following information has been compiled to answer some frequently asked questions regarding accessible pedestrian signals (APS). Effective use of this information will contribute to the removal of barriers to access in the community. Resources are provided for more in-depth information once a decision has been made to install accessible pedestrian signals.

What is an Accessible Pedestrian Signal (APS)?

An accessible pedestrian signal (APS) provides the information that is conveyed in visual WALK signals in an audible, verbal, and/or vibrotactile manner indicating the crossing phase. In many situations, it is nothing more than a fancy pedestrian push-button. It provides access to one piece of information that a pedestrian can use to make the best decision possible about when it is safe to cross the street.

What is the purpose of an APS?

The purpose of an APS is to provide access to the information indicated by the visual WALK signal and its timed interval that sighted pedestrians receive. The pedestrian must still use all the other skills at his or her command to make the safest crossing possible, but it is no longer necessary to guess when the WALK sign is engaged. Also, APS may provide non-visual information to pedestrians about:

- Intersection signalization
- Existence and location of the push-button (through locator tones)
- Beginning and duration of the WALK interval
- Direction of the crosswalk and location of the destination curb (through sound beaconing)
- Intersection geometry (through maps, diagrams or speech)
- Intersection street names in Braille, raised print or speech

Who uses APS?

Everyone. While the features of an APS are designed to provide audible and/or vibrotactile information of use to people who are blind or visually impaired, all pedestrians can benefit from access to the additional features and the enhanced information they offer.

What are some examples of the benefits for everyone?

When the push-button is pressed on an APS, the pedestrian receives both a visual and an audible indication that the signal has been engaged and that the request for a WALK cycle has been transmitted. This feedback eliminates wondering whether the push-button works and forestalls the tendency to press the button repeatedly.

Receiving confirmation that the signal has been engaged may also encourage pedestrians to wait for the WALK cycle rather than anxiously dart across an intersection at the first opportunity.

Also, research shows that pedestrians who are blind or visually impaired begin crossing sooner after the light change when there is an APS than they do when there is no APS, allowing for more time to make the street crossing. See the chapter titled, "Accessible Pedestrian Signals: Synthesis and Guide to Best Practice" (Chapter 2) at the following Web site address: http://www.walkinginfo.org/aps.

Can APS be incorporated into standard pedestrian signal systems?

Yes. The APS is often nothing more than a new-style ped push-button, which uses the exact same wiring as the old-style ones. Some require the addition of a control module to the controller cabinet or in a ped signal head, but even these additions are simple and routine. A report available from the U.S. Architectural and Transportation Compliance Board (The U.S. Access Board) provides guidance on available APS products and the interface with traffic signal controllers. For a copy of the report titled "Interfacing Accessible Pedestrian Signals (APS) with Traffic Signal Control Equipment," visit the following Web site address:
http://www.access-board.gov/research&training/APS/report.htm

To what extent are APS required?

Transportation legislation, including the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Transportation Equity Act for the 21st Century (TEA-21) of 1998, calls for mainstreaming pedestrian (and bicycle) projects into planning, design and operation of the nation's transportation system. The document titled "Planning and Funding Accessible Pedestrian Facilities" also states, "Accessibility is not an exclusive or separate issue. Rather, accessibility design is fundamental to the walking environment, because all pedestrians with or without disabilities benefit from accessibility design. Accessibility is an intrinsic part of planning, retrofitting and constructing pedestrian facilities, along with safe accommodation and good design." To read the full document, go to the following Web address: http://www.ite.org/library/accessibleped.asp.

What does the Manual on Uniform Traffic Control Devices require?

The Manual on Uniform Traffic Control Devices (MUTCD) issued by the Federal Highway Administration is, by law, the national standard for all traffic control devices including APS. Section 4E.06 of the MUTCD 2003 edition states, "If a particular signalized location presents difficulties for

pedestrians who have visual disabilities to cross reasonably safely and effectively, an engineering study should be conducted that considers the safety and effectiveness for all pedestrians in general, as well as the information needs of pedestrians with visual disabilities." The MUTCD provides information crucial in conducting such a study and the decision-making process for determining if there is a need for an APS. Once it has been decided to install an APS, sections 4E.06 and 4E.09 prescribe certain mandatory and recommended features and operational requirements. The MUTCD is available at http://mutcd.fhwa.dot.gov/

What does the ADA say?

Title II of the Americans with Disabilities Act (ADA) requires municipalities and states to make their programs accessible if no undue hardship is imposed by the changes. Since pedestrian circulation is considered a program, APS may be necessary to provide access to certain types of existing intersections. Also, the ADA's effective communication requirement stipulates that information shall be communicated as effectively to people with disabilities as to all others. To ensure that a resident is not denied use of sidewalks and street crossings because of a disability, a community may need to retrofit an existing signalized intersection with APS if it has been identified by one or more people as needing accessible crossing information. Some municipalities consider the addition of APS at intersections part of their ADA transition plan

For copies of the Americans with Disabilities Act Title II regulations, go to this Web address: http://www.usdoj.gov/crt/ada/publicat.htm or call the Disability and Business Technical Assistance Center ADA Hotline at 800-949-4232 (voice/TDD).

What does The U.S. Access Board say about APS?

Guidelines developed by The U.S. Access Board call for APS to be installed at all newly signalized or altered intersections that include the installation of visual pedestrian signals. If visual pedestrian signals are warranted, then audible and vibrotactile output is necessary as well.

Although the federal rulemaking process to adopt The U.S. Access Board's guidelines into ADA regulations is not yet complete, the guidelines and supplementary information are available at this Web address: http://www.access-board.gov/rowdraft.htm, or contact the Access Board at 202-272-0080 (voice) or 202-272-0082 (TTD). Documents are available in alternate formats.

If ADA regulations for APS haven't been finalized, how do we know what to do now?

First, it should be recognized that the MUTCD contains legally mandated standards regarding the design and operation of APS once the decision to install them has been made. Second, it is important to understand that the requirements for equal access under Title II of the ADA are real, and the fact that the process for adopting standards for public rights of way is not yet complete does not absolve municipalities of the obligation to design for accessibility. As evidenced through the resources listed in this document, there is extensive research and guidance available on making intersections accessible. The U.S. Access Board's draft guidelines established with input from experts in the field are an excellent resource for determining how to achieve the access that Title II of the ADA requires.

If we make a good effort to design for access now and the standards, when adopted into law, differ somewhat from current guidance, will we be required to redo the work then?

No. The standards when adopted into law will be effective for new intersections and alterations to existing intersections from the effective date forward.

What is the cost of installing APS?

Many factors affect the cost of making a signalized intersection accessible such as whether it is an existing pedestrian signal in need of retrofitting or an intersection scheduled to receive a newly installed pedestrian signal. The number of crosswalks determined to need WALK signals and the type of APS chosen are additional factors. Generally, the cost of retrofitting a four-legged intersection to include APS on all four crosswalks ranges from $8,000 to $12,000. This cost is often reduced when multiple intersections are retrofitted simultaneously. Costs can also be further reduced when APS are included in the initial installation of an overall project.

What funding sources are available to cover this cost?

Generally, the same source that funds the visual signals should also fund the accessibility of those signals. When the installation of a pedestrian signal is being considered, the assumption should be that it will be accessible, thus eliminating the need to approach the visual signal and the accessible features as separate considerations. In addition, there are federal funds available to help a municipality increase the safety and accessibility of the pedestrian environment including specific funds for improving access to public transportation.

The document titled, "Planning and Funding Accessible Pedestrian Facilities" states in part, "The combined funding of federal, state and local government on surface transportation is one of this country's largest domestic spending programs… Pedestrian projects and programs are eligible for funding in almost every major federal-aid surface transportation category." Among the funding sources listed in this document for transportation enhancement are:

- Federal-Aid Highway Programs
- Surface Transportation Program (STP)
- Congestion Mitigation and Air Quality Program
- Recreational Trails Program
- Federal Lands Highways Program
- National Scenic Byways Program
- Urbanized Area Formula Grants
- Capital Investment Grants and Loans
- Formula Program for other than Urbanized Area

Also see the Web page at: http://www.ite.org/library/accessibleped.asp.

According to the Consortium for Citizens with Disabilities Transportation Taskforce on Improved Pedestrian Rights of Way, states have under-spent the funds available for the Transportation Enhancement program by about $700 million since FY 1998. See this Web address for more information: http://www.c-c-d.org/CCDSafetea.paper.htm

What benefits to the community do APS provide?

The provision of APS makes the community more usable for all pedestrians and sends a clear message that all citizens are valued members of that community. The installation of APS demonstrates an understanding that the senior population is ever increasing and that vision loss is prevalent in this population. APS also provide an additional cue to alert children and youth who may be easily distracted by other interests as to when the crossing phase begins. Like many features of disability access, APS will prove beneficial to all pedestrians, and as noted in the publication, *Policy on Geometric Design of Highways and Streets*, "Pedestrians are the life blood of a community." This document can be found at the following Web address: https://www.transportation.org/publications/bookstore.nsf/ViewPublication?openform&ParentUNID=6BAA51C12B7F431D86256A3800574F81

What about business owners and residents who don't want the additional noise of the audible signals?

Modern audible signals fit more harmoniously into the sound environment of the intersection and are only as loud as needed because the volume adjusts in response to ambient sound. There are a variety of audible signals from which to choose, and one is sure to provide the access features needed while not adding to the noise pollution of the neighborhood. Many people remember some of the first audible signals used which emitted a loud, shrill tone for the duration of the WALK cycle. Such signals actually proved dangerous to pedestrians who are blind because they masked all other audible cues.

What is the best way to determine where APS are needed?

There are three points to consider:

1. Wherever new pedestrian signals are installed, it is only logical to install APS as a cost-saving approach and one that advances the goal of increasing access for everyone in the community. Furthermore, The U.S. Access Board's draft guidelines established with input from experts in the field, when adopted, may change that "should" to a "shall."

2. Any individual's request for an existing intersection to be made accessible should be considered a request for accommodation under Title II of the ADA, and if no undue hardship is imposed, then an APS should be provided. It is important to recognize that an individual makes such a request in order to increase safety and independence in travel to conduct business in the community. Therefore, it will prove beneficial to the community to provide the APS.

3. A community could choose to take a proactive approach to determining which existing signalized intersections should be retrofitted with APS by forming a working group for this purpose. It is recommended that such a group should include someone with fiscal responsibility, a traffic engineer, a disability service provider such as an orientation and mobility instructor, a disability advocate and a representative from the senior population. Where public transportation exists, it is also recommended that the transit provider be included. If a group already exists to address bicycle and pedestrian safety issues, a representative from this group could help toward consolidating efforts to make the community safer and more accessible for everyone.

How do people who are blind or visually impaired cross streets?

A combination of techniques is used to analyze an intersection and determine when it is safe to cross, including prior knowledge acquired about the intersection, physical cues in the environment, and audible cues such as traffic sounds and information gained from other pedestrians.

The most available cue is the surge of parallel traffic – the sound of traffic starting from a standing stop and moving smoothly through the intersection in the through lanes closest to the pedestrian. However, as signalization becomes more complex in an effort to move larger volumes of vehicular traffic, the need to know precisely when the WALK interval begins has become crucial to determine when it is safe to cross the street, since the sound of the surge of the parallel traffic may be masked by turning traffic and the quick progression of signals allowing particular lanes of traffic to move.

Other factors which make relying on traffic sounds more difficult:

- Newer vehicles which are more silent because of quieter engines
- Heavy equipment used for cleaning or construction
- Music, often boosted by amplifiers, of street performers and car sound systems
- Idling buses and trucks

Such factors can make it impossible to determine when it is best to cross using sound cues, thus prohibiting a pedestrian who is blind or visually impaired from independently moving forward. The behavior of fellow pedestrians is often one of the most unreliable cues as pedestrians who can see often dart across at the first visible break in traffic, which may not coincide with the WALK interval. So increasingly, an APS when available is becoming the most reliable cue.

If you have additional questions about mobility techniques used by people who are blind or visually impaired, go to the source – ask a pedestrian in your community who has firsthand experience using such techniques or ask an orientation and mobility professional.

How many people are blind or visually impaired?

According to the Lighthouse International publication, Statistics on Vision Impairment: A Resource Manual *(April 2002):*

- 4.3 million Americans are severely visually impaired
- 1.1 million are legally blind
- Incidence increases with age
- By 2010, it is expected that there will be 20 million visually impaired people over age 45.

For further statistics, visit this Web site: http://www.lighthouse.org/research_statistics.htm

How prevalent are pedestrian deaths and injuries?

The National Highway Transportation Safety Administration's National Center for Statistics and Analysis reports that in 2002, 71,000 pedestrians were injured in traffic crashes and 4,808 were killed. On average a pedestrian is injured in a traffic crash every 7 minutes and is killed every 109 minutes. See *Transit Safety Facts 2002* (DOT HS 809 614) at this Web site: http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002pedfacts.pdf

Traffic crashes involving pedestrians include a comprehensive range of all populations. Children younger than age 16 are most likely to be struck by motor vehicles. Seniors, although less frequently struck than children, are more likely to die after being struck by a motor vehicle. Starting at age 70, the rate is nearly twice as high as it is for people younger than 70. See the Insurance Institute on Highway Safety's June 2003 Q & A on pedestrians at this Web site: http://www.iihs.org/safety_facts/qanda/peds.htm

While the National Highway Transportation Safety Administration does not collect statistics on how many pedestrian accidents involve individuals with disabilities, the correlation between visual impairment and aging is likely to be a factor in some crashes involving older pedestrians. In addition, the American Council of the Blind reports that a substantial number of its members have either been struck by moving vehicles or had "close encounters" with moving vehicles hitting their white canes. Learn more at this Web site: http://www.acb.org/magazine/1999/bf0399.html

What guidance is available regarding the purchase and installation of APS?

"Accessible Pedestrian Signals: Synthesis and Guide to Best Practice" provides overall information on installation criteria and design considerations. A shortened version is available in a July 2003 Research Results Digest on the Internet at this address: http://gulliver.trb.org/publications/nchrp/nchrp_rrd_278.pdf or a print copy can be ordered from the Transportation Research Board publications department. The full document is available online at http://www.walkinginfo.org/aps

The online guide allows users to:

- Find an APS device according to its type and features.
- Review APS features currently available.
- Learn about where APS are required, where they are needed and how to prioritize installations.
- Read about the experiences of U.S. cities that have installed APS.
- Download print versions of the example rating scales and field adjustments.

The Federal Highway Administration has standards and guidelines for APS in the *Manual on Uniform Traffic Control Devices* (MUTCD). It provides federally mandated standards which must, by law, be adopted by states as the legal standard for traffic control devices and includes guidance on APS in chapter 4E and Temporary Traffic Control Elements in chapter 6D. The MUTCD is available at http://mutcd.fhwa.dot.gov/.

Is there one source to call for help on how to get started?

For technical assistance on how to improve access in your pedestrian environment, contact:

Easter Seals Project ACTION
Phone: 202-347-3066 (Voice) or 202-347-7385 (TDD)
Toll Free: 800-659-6428
E-mail: projectaction@easterseals.com
Web site: www.projectaction.org

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