

Transportation Accessibility: Synthesis

prepared for

**Nancy Boyd, WSDOT Deputy State Design Engineer
Shawn Murinko, WSDOT ADA Coordinator**

prepared by

**Aaron Poor, TRAC Synthesis Editor
Kathy Lindquist, WSDOT Research Office
Michel Wendt, WSDOT Library**

Updated

July 3, 2008

Transportation Synthesis Reports (TSRs) are brief summaries of currently available information on topics of interest to WSDOT staff. Online and print sources may include newspaper and periodical articles, NCHRP and other TRB programs, AASHTO, the research and practices of other state DOTs and related academic and industry research. Internet hyperlinks in the TSRs are active at the time of publication, but host server changes can make them obsolete.

Request for Synthesis:

Nancy Boyd, WSDOT Deputy State Design Engineer, and Shawn Murinko, WSDOT ADA Coordinator, want to know the recent accommodations of countries and cities for disabilities through all types of design in the right-of-way. Areas of interest are accessibility statutes and laws and corresponding design policies or guidelines.

Background:

A search of available information has revealed that improving transportation accessibility continues to be a key policy for national and local governments throughout the world. The US Access Board has developed a guidebook of accessible right-of-way planning; Sweden has published accessibility guidelines; and Norway has clarified its definition of universal design. At the city level, Houston, Vancouver, BC, and London have each implemented access strategies in unique ways.

Databases Searched:

- Transport, available through WSDOT Library
- TRIS Online
- Research in Progress
- Google
- Wisconsin DOT Transportation Synthesis Reports

Synthesis Summary:

Categories of publications and resources are as follows:

- United States
- Canada
- United Kingdom
- Sweden
- Norway
- Japan
- Denmark
- Germany
- Literature Search
- ADA-Related Links

UNITED STATES:

Special Report: Accessible Public Rights-of-Way Planning and Design for Alterations

US Access Board, August 2007

From Chapter 1, Introduction—Accessibility Regulations: This advisory compiles the recommendations of a subcommittee of PROWAAC that worked to develop and highlight model rights-of-way design alternatives, design processes for making alterations, design solutions to specific problems, and case studies demonstrating examples of accessible design practices from across the country.

<http://www.access-board.gov/prowac/alterations/guide.htm>

Guidance on Rights-of-Way Access Available from the Board

US Access Board, February 2008

Public streets and sidewalks present unique access challenges that are not encompassed by existing guidelines or standards. Access at street crossings for pedestrians with vision impairments, on-street parking, and constraints posed by terrain and space limitations are just some of the issues that often arise. The Board is developing guidelines for public rights-of-way that will address these and other issues so that practitioners have an established reference for achieving accessible streets and sidewalks.

While work on these guidelines continues, interim guidance is available from the Board through an active outreach program on rights-of-way accessibility . . .

Resources available from the Board include a new guide on sidewalk and street improvement projects published by the Institute of Transportation Engineers. *Accessible Public Rights-of-Way: Planning and Designing for Alterations* shows how access can be maximized in existing streetscapes. Design solutions, model sidewalks and case studies are illustrated through photographs and engineering plans. This guide recently received an award from the American Council of Engineering Companies. In addition, a popular video series demonstrating access issues from user perspectives that the Board produced and distributed on disk is now available on the Board's website. Other resources are posted online on the [public rights-of-way](#) homepage.

<http://www.access-board.gov/news/row-guidance.htm>

Houston, Texas: Safe Sidewalk Program, Department of Public Works and Engineering

For the health, safety and welfare of the citizens of Houston, the Safe Sidewalk Program (SSP) provides sidewalks and ramps within the public right-of-way for pedestrians to use around schools and major thoroughfares and to improve accessibility for people with disabilities. The Department of Public Works and Engineering (PWE) constructs sidewalks as an independent public improvement through the SSP under the Safe School Sidewalk Program, Major Thoroughfare Program, and Pedestrian Accessible Review (PAR) Program . . .

PAR Program: The PAR Program is administered by the Mayor's Office for People with Disabilities (MOPD). Sidewalks and curb cut/ramps are provided to improve sidewalk accessibility for people with disabilities. A citizen is considered eligible to participate in the PAR Program when there is no safe accessible path of travel to:

- Grocery/Pharmacy
- Financial Institution
- Place of Employment
- Medical Facility
- Bus Stop/Metrolift
- Educational Facility

- Any facility/structure deemed necessary to provide quality of life
- Place of Worship

<http://documents.publicworks.houstontx.gov/latest/safe-sidewalk-program-ssp.htm>

CANADA:

Accessible Transportation

Transport Canada

The Accessible Transportation Unit provides leadership in the development and promotion of strategies and policies that seek to provide accessibility to the national transportation network without undue obstacles for persons with disabilities, seniors, and other citizens with unique needs.

Features:

- [Intercity Bus Code of Practice and Complaint Guide](#)
This Code represents a voluntary commitment by intercity bus service operators to serve people with disabilities in a safe and dignified manner. It applies to operators that transport passengers by bus between or within the provinces or territories of Canada.
- [Access to Travel Website](#)
Access to Travel, your special needs information source, provides information on accessible transportation and travel across Canada with the aim of making traveling an easier and more enjoyable experience for Canadians with disabilities.
- [TRANSED 2007](#)
Canada is proud to host the 11th International Conference on Mobility and Transport for Elderly and Disabled Persons (TRANSED), to be held June 18-21, 2007, at the Palais des congrès de Montréal under the theme "Benchmarking, Evaluation and Vision for the Future".

Quick Links:

- [Canadian-European Parking Agreement for Persons with Disabilities](#)
- [Easing the Way - Guide to Accessible City-to-City Bus Service](#)
- [Codes of Practice \(Air, Marine, Rail, Communication\)](#)
- [Air Transportation Regulations and Personnel Training Regulations](#)
- [Canadian Air Transport Security Authority \(CATSA\)](#)
- [Research and Development](#)
- [In-Flight Safety - Frequently Asked Questions](#)
- [Related Links](#)
- [Feedback](#)

http://www.cta-otc.gc.ca/access/index_e.html

Reaction to Landmark Canadian Transportation Agency Decision: Disabled Canadians Jubilant to Have Transport Barrier Removed

Council of Canadians with Disabilities, January 2008

Today the Canadian Transportation Agency (CTA) released a landmark decision concerning the right of individuals with disabilities to travel by air without having to pay for a second seat, for an attendant or other use, to accommodate their disability. In a historic decision in the "One Person, One Fare" case, the agency has recognized the right of these individuals to have access to a second seat when traveling by air in Canada without having to pay a second fare.

<http://www.ccdonline.ca/publications/media-releases/011008.html>

Access Transit Project: Accessible Transit for Everyone

Translink—South Coast British Columbia Transportation Authority

Project Overview:

TransLink has developed the "Access Transit" Plan to make sure that the transit system is accessible for as many people as possible, recognizing the physical, cognitive or other challenges they might face.

http://www.translink.bc.ca/Plans_Projects/Access_Transit/default.asp

Universally Accessible Bus Stop Design Guidelines, Project Report, Final Draft

Greater Vancouver Transportation District, June 2007

Guidelines for universally accessible bus stops begin on page 31 of the PDF.

http://www.translink.bc.ca/Plans_Projects/Access_Transit/reports/2007-06-12FinalProjectReport.pdf

UNITED KINGDOM:

Transport for London: Red route accessibility

The red route is a network of 580km of London's roads which carry 35 per cent of the City's traffic.

We have delivered a number of projects aimed at improving accessibility on the red route and are continuing to work on initiatives to improve access for disabled Londoners.

Our work includes:

- A programme of upgrading and replacing footbridges, installing high visibility fencing and rest levels. The pedestrian footbridge on the A21 Farnborough, for example, is being replaced with a pelican crossing
- Introducing ramps to improve access. For example, working together with the City of London, we have installed a ramp at Blackfriars Bridge to provide access to the Jubilee Walkway/Thames Path and public toilets
- Installing crossings that are level with the pavement, making it easier for people with mobility impairments to cross, while also slowing down traffic
- Installing tactile paving at crossings to help guide pedestrians with visual impairments to crossing points
- Improving bus stops by removing street clutter and raising the kerb so that bus ramps can be used more easily
- Replacing subways with crossings which are safer, more pleasant and easier to use. St Dunstan's subway on the A217 Cheam at Sutton, for example, has been replaced with a crossing at street level
- Making training available to all TfL staff involved in the design or delivery of street schemes to deliver accessible street environments
- Providing special concessions to Blue Badge holders on the red route including provisions for stopping and parking.

<http://www.tfl.gov.uk/corporate/projectsandschemes/roadsandpublicspaces/7905.aspx>

Valuable online Blue Badge map service improved

Office for Disability Issues, Her Majesty's Government, April 2008

The online Blue Badge map service, which makes it much easier for disabled people to find places to park, has now been significantly improved. The map on the Directgov website, produced by the Office for Disability Issues, was first launched in July 2006 on www.direct.gov.uk.

It was the first of its kind originally covering 64 cities and large towns. A further 37 have now been added, more are still being rolled out, and by the end of April the total will reach 119.

Users can search by postcode or town/area name for designated Blue Badge parking bays, parking bays that fall on red routes in London as well as accessible stations, toilets and petrol stations. Blue Badge holders can also find out more about rules for street parking, including time restrictions and any special notices.

<http://www.dwp.gov.uk/mediacentre/pressreleases/2008/apr/dcr070-090408.asp>

Access for Disabled People

Department for Transport

The Department aims to improve transport provision for disabled people - whether as pedestrians, public and special transport users, or motorists - while also improving accessibility in public places.

Further information about what we are doing to make public transport accessible can be found by clicking on the appropriate heading below. Each section also includes contact details for further information and queries.

<http://www.dft.gov.uk/transportforyou/access/>

Transport for London: Transport accessibility

Working to make London's transport accessible for everyone.

<http://www.tfl.gov.uk/gettingaround/transportaccessibility/1167.aspx>

Assessment of accessibility standards for disabled people in land based public transport vehicles, Executive Summary

Department for Transport, May 2008

Scope of work:

The project team was commissioned to conduct a literature review to identify existing accessibility regulation relating to land-based public transport, and gather any published evidence to indicate its effectiveness. The purpose of the literature review was two-fold; firstly to establish the relevance of work that may already have been undertaken (both at a national and international level) with respect to accessibility of public transport; and secondly to facilitate the development of audit and assessment tools for subsequent work. Objective and subjective data were then gathered to consider pan disability accessibility across land-based public transport and its associated infrastructure.

The study was scoped to conduct physical audits of up to three of each vehicle type at three principal locations. Location selection was driven by the need to evaluate recently built or modified infrastructure, in addition to a range of vehicles. A shortlist was developed, and following consultation with DfT and Disabled Persons Transport Advisory Committee (DPTAC), London, Glasgow and Manchester were selected. A series of consultation activities were designed to capture user views and experiences of transport accessibility at these locations; resources did not allow us to include a rural location, but some user consultation was conducted at Stockport as a subsidiary of Manchester. The project team also interviewed a representative sample of industry stakeholders to describe the challenges associated with providing accessible transport, and their views on legislation.

Approach taken:

The study centres very much on the social model of disability, and the social and environmental barriers created by society (purposeful or inadvertent) that ultimately define who is disabled, not a person's disability/impairment. To investigate the barriers to travel, journeys were considered as a complete cycle, from journey planning through to arrival at a given destination, rather than a series of discrete movements. This approach permitted an assessment of 'Total Journey Quality' currently afforded to disabled public transport users in the UK, where a disabled person's level of

journey quality is dependent on the levels of accessibility afforded to them at each stage of their journey on whichever transport mode(s) they choose to travel. In conducting this study, the access needs of the widest possible range of users throughout the journey cycle were considered.

<http://www.dft.gov.uk/transportforyou/access/landaccessibilitystandards/>

Taxis and Private Hire Vehicles: What we have done

The Department for Transport will be publishing a consultation on the issue of accessible taxis in summer 2008.

<http://www.dft.gov.uk/transportforyou/access/taxis/whatwehavedone>

SWEDEN:

New venture makes Sweden more accessible

RTS, December 2007

Business organisation, RTS, the Swedish Travel and Tourist Industry Federation, and public players are cooperating on a new venture. The parties have agreed to develop *Sweden Door-to-Door*—the world's first national travel service for the general public. The service includes Sweden's entire transport range. The vision of making Sweden accessible to more people is being realised.

Sweden Door-to-Door is being developed in cooperation between RTS, the Swedish Travel and Tourist Industry Federation, and a number of public players. Sweden Door-to-Door will be the world's first national and neutral service to coordinate all information required for booking and purchasing trips within a country. Consequently, Sweden's entire range of transportation will be accessible and available for consumers, who can plan, book and purchase for their trips on the single site.

The objective of Sweden Door-to-Door is to satisfy people's demands for simple and efficient travel from point A to point B. All means of travel will be accessible and bookable based on personal preferences in terms of prices, travel time or mode of transport.

<http://www.partnerskapetturism.se/pls/nvp/Document.Show?CID=4100&MID=382>

Guidelines for Accessibility: Break the Barriers

Handisam—Swedish Agency for Disability Policy Coordination, December 2007

More than a million people in Sweden have a disability. This must not become an obstacle.

Our society is constantly changing. But not everything is changing at the pace that we would like. Society is facing great challenges. Fewer people must support more. Nonetheless, people with disability are an unused resource in working life. One explanation is inadequate accessibility. Having been tasked to effect change, the central Government administration is leading the work to create an accessible Sweden. Handisam supports the authorities in this readjustment work, among other things through the revised *Guidelines for accessibility*.

[General guidelines for operations, information accessibility, and building begin on page 20 of PDF.]

Document: http://www.handisam.se/Tpl/NewsPage_935.aspx

Main page: http://www.handisam.se/Tpl/StartPage_287.aspx

Accessibility, Stockholm Public Transport (AB Storstockholms Lokaltrafik)

Public transport can be tough for people using a wheelchair, using a Zimmer frame, with a pram, or for any other reason finding it difficult to manoeuvre. But we are committed to making SL accessible to everyone.

The Tvärbanan train is a modern example that it is possible to make public transport accessible for everyone. It is not easy to adapt older established systems, such as the commuter trains, where accessibility for everyone was not an obvious necessity from the beginning.

In the Metro, the new carriages are causing certain problems for wheelchair users. The work to resolve these problems is ongoing in close cooperation with representatives from four organisations for the disabled.

New commuter train carriages are gradually being brought in. A low boarding step is an obvious necessity.

The street entry level ramps that we have been testing on the buses will be introduced to all new buses within a few years. All stations will soon have lifts.

Digital displays:

There are digital information displays on all buses, in Metro carriages, on the Tvärbanan trains, and in the new commuter trains, showing line information and the name of the approaching station. Not only is this good for the hearing impaired, but it is also helpful for those of you that do not understand Swedish very well.

<http://www.sl.se/templates/Page.aspx?id=4662>

Stockholm Public Transport, Annual Report 2007

Page 20 describes Stockholm Public Transport's achievements in accessibility:

- Systems of displays for rail and bus that assist travelers with impaired hearing and vision,
- Lowering of rail tracks to eliminate height difference between platforms and trains,
- Installation of tactile indicators at indoor subway stations,
- Automatic doors at station entrances,
- Lifts, escalators, or ramps at train stations,
- Improvement of information for the disabled at stations, stops, and agency Website,
- An accessibility guarantee compensates travelers for taxi costs for a delay of more than 20 minutes, e.g., when a low floor bus doesn't arrive or a ramp is broken, and
- New information boards at bus terminals will have talking monitors.

http://www.sl.se/upload/eng_text/uploads/annual_reports/annual_report_07.pdf

Accessible Sweden

Sweden's aim to create a society accessible to all is much more than removing physical obstacles for people with mobility impairment. It's about meeting diverse needs with user-friendly solutions, a shift in attitudes, equal opportunities and the possibility to participate as an individual.

Public authorities and agencies are working hard to set not only guidelines but also a good example for the rest of society. Roland Håkansson, general secretary of the Swedish Federation of People with Mobility Impairment (*De Handikappades Riksförbund*), says: "It's about creating a system where we have rights." A wheelchair user himself, Håkansson understands first-hand the daily challenges faced by people with disabilities.

Sweden is working toward a vision of complete access by 2010. The nationwide project "From Patient to Citizen: A National Action Plan for Disability Policy" started in 2000 after it was adopted by Swedish Parliament.

http://www.sweden.se/templates/cs/Article_17892.aspx

Welcome to the National Public Transport Agency

Rikstrafiken, Swedish National Public Transport Agency, March 2007

Rikstrafiken's task is to work for a coordinated long distance public transport system from the traveller's perspective, as regards bus, boat, air, and train transports. The goal is to create an

accessible high quality transport system, safe traffic, a good environment, and contribute to a positive regional development. Other important tasks are working to increase accessibility to individuals with functional disabilities and to ensure that equality of opportunity is observed within the public transport sector.

<http://www.rikstrafiken.se/default2.asp?sprak=1033&id=133&topp=51>

NORWAY:

Universal Design—Clarification of the Concept

Norwegian Ministry of Environment, November 2007

Foreword:

Universal design thinking has become widely recognised and applied in Norwegian political documents, statutory framework and technical guidelines. The concept of universal design has played a constructive role in developing the understanding of good functionality for all as a beneficial feature of society, and for promoting equality and adequate accessibility for persons with functional impairments.

However, there has been a need for further elaboration of the substance of the universal design concept in a number of contexts. This report defines and clarifies the concept of universal design, thereby establishing a common basis for the application of this strategy in Norwegian public documents; for theoretical, methodological and practical development; and for use in information material.

http://www.universell-utforming.miljo.no/file_upload/uniutf%20a4%20norsk-eng.pdf

Plan of Action for Universal Design

Norwegian Ministry of Environment

Norway's main Web page for universal design.

<http://www.universal-design.environment.no/>

JAPAN:

Present State and Issues Concerning Barrier-Free Transportation in Japan as of 2007

Yoshiaki Imafuku, Transportation Affairs Officer, Disabled Peoples' International-Japan

<http://www.jicafriends.jp/leaders/gi2007/material/lecture/1005/index.html>

Tokyo Metro: Barrier Free

Accessible subway features noted on the Website: elevators and escalators, stair lifts, ramps, easy-to-read signs, multipurpose toilets, automatic-fare gates (with wide gates for wheelchair access), and automated ticket vending machines that are more accessible, easy-to-read, and voice-enhanced.

http://www.tokyometro.jp/global/en/about/barrier_free.html

General Principles of Universal Design Policy

Japan, Ministry of Land, Infrastructure, Transport and Tourism

This Web page is a table of contents, providing links to sections on Japan's universal design, its history and future, and specific policies.

http://www.mlit.go.jp/english/2006/a_policy_bureau/01_udpolicy/index.html

DENMARK:

Accessibility Standards: The Danish Experience

Søren Ginnerup, SBI—Danish Building Research Institute

This PowerPoint presentation sketches Denmark's recent accomplishments in accessible design. In 2001 a national standard for accessibility was established, DS 3028 (p. 8). In 2007 new building regulations altered the execution of guidelines (p. 14). Descriptions of transportation guidelines begin on page 22.

[http://www.nda.ie/cntmgmtnew.nsf/0/A76DFEA0865FF55680257288004656D8/\\$File/SorenGinnerup.ppt](http://www.nda.ie/cntmgmtnew.nsf/0/A76DFEA0865FF55680257288004656D8/$File/SorenGinnerup.ppt)

GERMANY:

Barrier-free access—important feature of quality in public transport

German Federal Ministry of Transport, Building, and Urban Affairs

Within the Federation's tightly delimited powers, the Act on Equal Opportunities for Disabled Persons and the amendment of other acts has seen the amendment of important acts pertaining to local public transport, rail and air transport and road construction.

For example,

- the Local Authority Transport Infrastructure Financing Act,
- the Carriage of Passengers Act,
- the Construction and Operation of Railways Regulations,
- the Civil Aviation Act and
- the Federal Trunk Roads Act

each contain different regulations aimed at achieving the most extensive barrier-free access possible. Thanks to this, disabled persons' rights to participate have been strengthened.

<http://www.bmvbs.de/en/dokumente/-,1872.963519/Artikel/dokument.htm>

LITERATURE SEARCH:

Transit Bus Stops: Ownership, Liability, and Access

Jocelyn K. Waite, March 2008, *TCRP Legal Research Digest information No. 24*, TRB, Accession No. 01091302

From Abstract: Bus stops can create a variety of legal issues associated with ownership, maintenance, accessibility, accommodations, and environment. This legal digest should inform transit providers and government officials of the different levels of ownership, liability, and maintenance associated with bus stops and bus shelters; identify the categories of legal issues that are associated with ownership and liability; and provide information on the problems and practices of others who have dealt with such problems, including protective provisions in franchise agreements and service provider contracts.

A Customized Approach: One Size Does Not Fit All When It Comes to Designing Curb Ramps

Bob Sexton, January 2007, *Public Works 138*(1): 51-52, ISSN 003-3840

Abstract: This article describes three different approaches to installing curb ramps to make sidewalks more accessible and comply with the Americans with Disabilities Act (ADA). Columbus, Ohio, maintains 13 standard curb ramp designs, which can be modified on a case-by-case basis. The Texas Department of Transportation has expanded its drawings to include curb ramps for traffic islands and switchback ramps for higher curbs often found in rural areas. A feature includes a closer look at the experiences of the Village of Arlington Heights, Illinois, which has difference

designs for each ramp, due to narrow sidewalks. Included is a description of their experiences with red ceramic tiles coated with rubberized material.

New ADA Rule May Reduce On-Street Parking 20%—That's Twenty Percent!

August 2002, *Parking Today* 7(8): 24-25, Bricepac, Inc., ISSN 1095-5062

Abstract: An informal review of draft rules under the Americans with Disabilities Act affecting ramps and on-street parking designs suggest that, as proposed, they could reduce on-street parking spaces by 20%. Draft rules are available on the Internet at <www.access-board.gov/rowdraft.htm#1104>. Areas addressed include: detectable warnings for the visually impaired; public parking spots per block; design of accessible stalls and sidewalk obstructions.

An Overview: Recommended Public Rights-of-Way Guidelines.

Spring 2001, *AASHTO Quarterly Magazine* 79(1):30-33, ISSN 0147-4820

Abstract: Under the Americans with Disabilities Act (ADA), the Access Board is responsible for developing guidelines for newly-constructed or altered pedestrian facilities covered by Title II. To that end, the Access Board created the Public Rights-of-Way Access Advisory Committee in October, 1999. This article presents highlights of the Committee's Final Report, focusing on the topic of accessibility and addressing public sidewalks; protruding objects; street fixtures and furniture; sidewalk/street transitions; pedestrian street crossings; vehicular ways and facilities; and temporary facilities and construction.

The Americans with Disabilities Act: Ten Years Later

J.V. Switzer, 2001, *Policy Studies Journal* 29(4): 629-632, Policy Studies Organization, University of Illinois, ISSN 0190-292X

Abstract: The Americans With Disabilities Act (ADA), signed into law on July 26, 1990, was full of promises but was also vague and in some ways contradictory. However, the ADA did bring official recognition to the country's largest minority group and focused attention on the need for making basic life activities available and accessible to an estimated 50 million or more Americans. This article provides an overview of the ADA 10 years after its passage into law, focusing on the emergence of disability policy studies, major provisions of the ADA, and policy outcomes.

Challenges and Dilemmas in Implementing the Americans with Disabilities Act: Lessons from the First Decade

S.L. Percy, 2001, *Policy Studies Journal* 29(4): 633-640, Policy Studies Organization, University of Illinois, ISSN 0190-292X

Abstract: The Americans With Disabilities Act (ADA) of 1990 represents a strong national commitment to protecting the full rights and opportunities of persons with disabilities. This article traces evidence of the impact of the ADA's implementation and compliance during its first decade and is organized around the key political and policy arenas associated with disability rights. This includes examination of the sustainability of public support for the ADA and the regulatory mandates that it contains, enforcement of ADA protections in the important context of public and private sector employment, and compliance activity in the state and local public sectors as well as the private sector service industry.

Sidewalk Cross-Slope Requirements of the Americans with Disabilities Act

K. Kockelman, Y. Zhao, L. Heard, D. Taylor, and B. Taylor, 2000, *Transportation Research Record* (1705): 53-60 (3 Tab., 27 Ref.), Transportation Research Board, ISSN 0361-1981, Report No. 0309066859

Abstract: It is the long-term intent of the Americans with Disabilities Act (ADA) that publicly available services along a public street be accessible to people with disabilities via a continuous, unobstructed pedestrian circulation network. When altered, almost all streets, with the exception of rural roads and highways, will be required to provide an accessible sidewalk wherever feasible. Existing research and science related to sidewalk cross-slope requirements are described in

detail. The history and spirit of the ADA are summarized, relevant court decisions are discussed, and key ADA cross-slope-related requirements are identified (along with applicable caveats). Current practices rely on a combination of strict, but limited, physical solutions and some programmatic solutions, about which there is much uncertainty as to how and when they should be applied. Very little existing work considers the effort and other access differences that result from changes in cross slope. Thus, additional research is needed to ensure sound policy regarding user access to transportation facilities.

Development of an Assessment Process to Evaluate Sidewalk Accessibility

P.W. Axelson, K.M. Wong, and J.B. Kirschbaum, 1999, *Transportation Research Record* (1671): 5-10, Transportation Research Board, ISSN 0361-1981, Report No. 0309070678

Abstract. The Americans with Disabilities Act of 1990 mandates that public facilities such as sidewalks must be "accessible to and usable by" people with disabilities. A process for assessing the access characteristics of sidewalks was developed as part of a project to evaluate current conditions on sidewalks. This project is the Sidewalk Assessment Process. It was developed as a research tool for collecting objective information about sidewalk features such as grade and cross slope that impact pedestrian access. Measurements in cities across the United States were made to evaluate the accuracy of the process. It was determined from these measurements that accurate and reliable information about the accessibility of sidewalks could be collected using the process. The data were found useful to compare the dimensions of new construction and alterations on sidewalks with accessibility guidelines, to identify areas requiring additional maintenance to comply with standards, and to determine methods for solving access problems. The assessment process may be used as a stand-alone planning tool to help sidewalk professionals identify the means to improve pedestrian facilities in their jurisdictions or as part of a communitywide accessibility improvement program.

ADA-Compatible Soft-Surface for Multi-Use-Trails

W.S. Mogawer, R.M. Botelho, and D.P. Cabral, January 1996, University of Massachusetts, Dartmouth, Department of Civil and Environmental Engineering, University of Massachusetts, Amherst, Transportation Center, and Massachusetts Highway Department, Report No. UMTC-95-3; Contract/Grant No. 6916; Task Order 3

From Abstract. Multi-use soft-surfaced trails can be successfully shared by pedestrians (walkers, joggers), people with disabilities, and bicyclists, if they are thoughtfully planned and designed. Soft-surfacing has the potential to be more economical to construct than hard-surfaced trails (such as asphalt or portland cement concrete and placed block type pavements). However, functionality and longevity need not be compromised. The objectives of this study were to develop cross-sections and standard specifications for multi-use soft-surfaced trails that are compatible with the Americans with Disabilities Act (ADA) and environmentally responsible. Two cross-sections were recommended that can meet these needs . . . The design guidelines, including geometric, drainage, signage, and tactile edge delineation considerations, were developed using the guidelines of the ADA Accessibility Guidelines for Transportation Facilities and the AASHTO Guide for the Development of Bicycle Facilities.

ADA-RELATED LINKS:

ADA Home Page: Information and Technical Assistance on the Americans with Disabilities Act

<http://www.usdoj.gov/crt/ada/>

ADA Best Practices Tool Kit for State and Local Governments

On December 5, 2006, February 27, 2007, May 7, 2007, and July 26, 2007, the Civil Rights Division of the U.S. Department of Justice issued installments of a new technical assistance document designed to assist state and local officials to improve compliance with Title II of the Americans with Disabilities Act (ADA) in their programs, services, activities, and facilities. The

new technical assistance document, which will be released in several installments over the next ten months, is entitled "The ADA Best Practices Tool Kit for State and Local Governments."

The Tool Kit is designed to teach state and local government officials how to identify and fix problems that prevent people with disabilities from gaining equal access to state and local government programs, services, and activities. It will also teach state and local officials how to conduct accessibility surveys of their buildings and facilities to identify and remove architectural barriers to access.

<http://www.usdoj.gov/crt/ada/pcatoolkit/toolkitmain.htm>

Federal Transit Administration: Americans with Disabilities Act

Includes links on ADA technical assistance and compliance.

http://www.fta.dot.gov/civilrights/civil_rights_2360.html

FHWA: Americans with Disabilities Act and Transportation Enhancements

In July 1999, the U.S. Department of Transportation issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in Federally-assisted programs is governed by the USDOT regulations (49 CFR part 27) implementing Section 504 of the Rehabilitation Act (29 U.S.C. 794). The FHWA has specific ADA policies for statewide planning in 23 CFR 450.220(a)(4), for metropolitan planning in 23 CFR 450.316(b)(3), and for the NEPA process in 23 CFR 771.105(f). These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities . . .

A committee was established in November 1999 to develop guidelines for public rights-of-way, including streets and sidewalks.

States must maintain *program access* under the TE program. *Program access* prohibits discrimination in programs, services, or activities. Program access does not necessarily require excessive retrofitting of existing facilities, if the program can be offered through alternative methods. For example, a public meeting to discuss a TE project may be moved from an inaccessible location to an accessible location to maintain program access.

Sponsors of TE projects should consider the potential uses of each project, consider what is reasonable and feasible, and provide for users in an appropriate manner. Some TE projects may not require installation of accessible facilities, such as a project which consists solely of acquisition of a scenic easement. Others require full compliance with ADAAG, such as a newly constructed interpretive center for a scenic highway. Parking, restrooms, water fountains, telephones, and similar facilities built as part of a TE project must be accessible. Alterations of historic facilities are covered under 28 CFR 36.405, which provides some alternatives within ADAAG. Some projects require planning and coordination to determine the extent of program accessibility. For example, it might not be possible to construct every trail segment according to ADAAG, but trail project sponsors must not install barriers or other features which would make it more difficult for people with disabilities to use the trail.

Technical reports on accessible designs for pedestrian and bicycle facilities are available through FHWA division offices. FHWA and the Access Board are developing best practices to apply the ADA to sidewalks, trails, and similar facilities which may use Federal transportation funds.

http://www.fhwa.dot.gov/environment/te/te_ada.htm

FHWA: Construction Program Guide, Americans with Disabilities Act

Under the Americans With Disabilities Act of 1990, "A public entity shall construct any new facility to be used in providing designated public transportation services so that the facility is readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs"(49 CFR 37.41). Also, "When a public entity alters an existing facility or a part of an existing facility used in providing designated public transportation services in a way that

affects . . . the usability of the facility . . . the entity shall make the alterations . . . in such a manner, to the maximum extent feasible, that the altered portions of the facility are readily accessible to and usable by individuals with disabilities, including individuals who use wheelchairs, upon the completion of such alterations"(49 CFR 37.43(a)(1)) . . .

Complaints received about the design of or accessibility related to traffic lights, curb cuts, median strips, ramps, sidewalks, pedestrian crosswalks, interstate and highway restroom facilities, parking spaces, parking lots, and any other highway-related facility are FHWA's responsibility. The agency reviews and investigates the complaints and works with the involved state or local organization to resolve the situation.

<http://www.fhwa.dot.gov/construction/cqit/ada.cfm>

USDOT Library Transportation Bibliographies: Americans with Disabilities Act of 1990 and Transportation

<http://dotlibrary.dot.gov/bibliographies/Disabilities.htm>