



**SUMMARY
REPORT**

July 2008



***Sidewalks and
Shared-Use Paths:
Improving
Mobility and
Designing
Transit-Ready
Communities***

written by
**Edward O'Donnell
Lorene Athey
Gilad Skolnick**



Institute for Public Administration
College of Human Services,
Education & Public Policy
University of Delaware

www.ipa.udel.edu

funded by the Delaware Department of Transportation

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Preface and Acknowledgements

As the director of the Institute for Public Administration (IPA) at the University of Delaware, I am pleased to provide this summary report, *Sidewalks and Shared-Use Paths: Improving Mobility and Designing Transit Ready Communities*. This report consists of summaries of the presentations given at the February 21, 2008, forum: Sidewalks and Shared-Use Paths: Improving Mobility and Designing Transit Ready Communities, held at the Clayton Hall conference center on the University of Delaware's Newark campus. This project is the continuation of a multi-stage process that involved evaluating techniques to improve compliance with the Americans with Disabilities Act (ADA), to better design and engineer trail infrastructure and pedestrian facilities to meet ADA mandates, and to encourage land-use patterns/development practices that integrate transit with the planning and design of transportation facilities.

I would like to take this opportunity to acknowledge many of the people who helped with the policy forum and the production of this report. Project manager Ed O'Donnell coordinated the process and was involved in the planning, research, and writing. Consultant Lorene Athey prepared and presented the IPA presentations at the policy forum and wrote the summary document. Research assistant Gilad Skolnick assisted with planning, logistics, and presentation summaries. Mark Deshon designed the graphics, agenda, website, and handouts for the policy forum and coordinated its recording (enhanced Podcast). Both Mark Deshon and B.J. DeCoursey provided excellent editorial support.

In addition to the project team's efforts, IPA staff member Wanda Moore provided valuable logistical support; without her, the policy forum would not have been a success. Staff member Nelcenia Downer provided additional support. Finally, I would like to thank our keynote speaker Sally Conway, Director of ADA Technical Systems, U.S. Department of Justice; presenters Mark Derry, President of Eastlake, Derry and Associates; Anthony J. Aglio, II, Bicycle and Pedestrian Coordinator, Planning Delaware Department of Transportation and Robert Garrett, Acting Chief of Programs and Services, PennDOT Bureau of Municipal Services, each of whom provided valuable input into the process.

Dr. Jerome R. Lewis, Director
Institute for Public Administration

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Speaker Biographies

Anthony J. Aglio, II

Anthony Aglio has been Bike and Pedestrian Coordinator at the Delaware Department of Transportation since the fall of 2005; he has been employed with the department since September 2001. Prior to that, he worked as the Senior Planner at Mackin Engineering Company developing community comprehensive plans. He has an MA in Regional Planning and is a member of the American Planning Association and the Association of the Pedestrian and Bicycle Professionals.

Sally Conway

Sally Conway is Director of the Americans with Disabilities Act (ADA) Technical Assistance and Mediation Programs with the Civil Rights Division of the U.S. Department of Justice. She is responsible for providing technical assistance with respect to the requirements of titles II and III of the Americans with Disabilities Act, investigating and, where necessary, litigating title I, II, and III complaints, and certifying state and local building codes.

Having earned bachelor's and master's degrees, she has worked in the fields of disability and civil rights for more than 20 years. Ms. Conway has conducted training sessions, workshops, and presentations on the ADA for representatives from the public and private sectors and people with disabilities throughout the country. Ms. Conway is responsible for the department's wide-reaching ADA Technical Assistance Program. This includes the ADA Business Connection, the development of new technical-assistance materials, and the ADA Information Line, which annually helps more than 50,000 callers understand the requirements of ADA. She also oversees an innovative ADA Mediation Program, which provides businesses, state and local governments, and people with disabilities an efficient, effective, and voluntary alternative for resolving complaints under the ADA, and serves as Congressional Liaison for ADA and other disability-related matters. Prior to coming to the department, Ms. Conway was Program Director at Granite State Independent Living in New Hampshire. She has also worked as an investigator for the N.H. Commission for Human Rights, the state agency responsible for enforcing federal and state anti-discrimination laws, Director of Medical Social Work in a hospital, and a music teacher in the public schools.

Mark Derry

Mark Derry is President of Eastlake, Derry and Associates, LLC (ED&A). Since 1999, his firm has specialized in accessibility, universal design, and ADA consulting and training. For two years prior to starting ED&A, Mark worked as a Technical Assistance Specialist and Trainer for the ADA Information Center for the Mid-Atlantic Region. ED&A has continued to provide technical assistance and training on behalf of the center. It also stays abreast of regulatory changes, often receiving updates and training from various federal agencies charged with enforcement of the ADA/ABA Accessibility Guidelines and the ADA.

Mark spends about a third of his time writing and delivering training on the ADA Accessibility Guidelines and teaching groups of architects, facility managers, and advocates how to survey for accessibility. The rest of his time is spent reviewing blueprints for designers to help ensure accessibility, as well as surveying physical properties for accessibility, having assessed millions of square feet of facilities. He has written articles for several newsletters and other publications on the ADA and architectural access.

Mark has been appointed by three West Virginia governors to the Statewide Independent Living Council (SILC), and has served as its chair. He is also a past chairperson for the West Virginia ADA Coalition and is a member of the W. Va. Code Officials Association. He has served as a member of the Public Rights of Way Access Advisory Committee for the U.S. Access Board. Since 1996, Mark has been an Affiliate ADA Trainer for the National Council on Independent Living (NCIL) and has served on the NCIL Governing Board from 2000-2004, and since 2006. He is past chair of the NCIL Multiple Chemical Sensitivity (MCS) Ad Hoc Subcommittee and current chair of the NCIL ADA/Civil Rights Subcommittee.

Bob Garrett

Bob Garrett is currently the Acting Chief of Programs and Services in the Pennsylvania Department of Transportation's (PennDOT) Bureau of Municipal Services. This organization provides funding, technical assistance, and technology-transfer services to more than 2,600 municipalities in Pennsylvania. He was the coordinator for the roll-out of the "Superpave" asphalt-paving standards to Pennsylvania's municipalities. Prior to this assignment, he was PennDOT's Chief Research Engineer. The PennDOT Research Program includes an average of 90 research projects with an annual investment of approximately \$7 million. He has worked for PennDOT for 15 years. Before joining PennDOT, he was a consulting engineer and economic-development specialist on large-scale land developments and an engineering-graphics educator. He is a graduate of Stevens College of Technology and Pennsylvania State University. He retired as a Captain from the United States Marine Corps in July 2001 and formerly was the Mayor of the Borough of New Berlin, Pa.

Top Ten Reasons to Fund Pedestrian Facilities

Ed O'Donnell, Policy Scientist, Institute for Public Administration, University of Delaware

Investing in pedestrians is much more than building new facilities or upgrading existing ones. Many other activities and programs directly benefit pedestrians, including maintenance practices, equipment and technology, employee and contractor education, snow removal, inspections, enforcement of codes, safety patrols, and public education and outreach. There are many benefits that accrue to jurisdictions that invest in pedestrian facilities.

10) Good for public health

The United States is in the midst of an obesity epidemic. People want to walk for exercise and are being told to do so by their doctors. Don't force them to get into a car and drive to the mall.

9) Good for drivers

A well-maintained and -connected pedestrian system provides alternatives to driving for short trips and improves access to transit. The more transportation choices available, the less likely it is a car will be required. Insufficient, or poorly maintained, pedestrian facilities discourage voluntary pedestrian travel and force into the street those who must walk. Safety-conscious design, location, and maintenance of pedestrian facilities translate into fewer accidents, which would snarl traffic and increase insurance rates.

8) Good for the environment

The World Health Organization reports that 70,000 people in the United States die each year due to air pollution, about half of which is caused by vehicle emissions. Increasing transportation options for everybody can reduce auto dependence and vehicle emissions (pollution). More transportation options equals less driving equals less pollution.

7) Good for business

People spend more time and money in business districts with a pleasant and safe pedestrian environment. These are places people of all ages and abilities can safely and easily navigate. Additionally, business districts with good accessibility increase their potential pool of customers to include disabled and elderly people. Curb cuts are not just for people in wheelchairs. They make life easier for everyone, including parents with strollers, elderly people, and delivery personnel. Conversely, poorly maintained sidewalks project a negative image of the community and adjacent businesses. Recreational trails generate revenue from tourists and visitors and are considered desirable amenities by businesses looking to locate or relocate.

6) Good for customers and employees

People who do not or cannot drive (such as children, the elderly, poor, and disabled) want to work, worship, shop, and recreate just like everyone else. According to the U.S. Census 2000, approximately 21 percent of Delaware's population was under 15 years of age, 13 percent was over 65 years of age, and 12 percent had a disability. This significant portion of our population will only continue to grow as more and more Delawareans age in place. People who are elderly and disabled are often without means of personal transportation and

can become isolated or lose their jobs without access to sidewalks and public transportation. Snow removal is also important. People have been fired from their jobs because they couldn't get to work as a result of snow.

5) Bad for criminals

The more pedestrians present, the more secure a facility is likely to be. This is the concept of “eyes on the street.” Facilities should be well designed, located, lighted, maintained, and pleasant, if they are to encourage use. Graffiti and poorly maintained facilities discourage use and makes it look like nobody cares—thereby encouraging undesirable behavior.

4) Good for the bottom line

Good initial design and material selection minimizes future safety, security, and maintenance problems. Routine maintenance extends the life of the facility and reduces long-term costs. Investing in pedestrian facilities increases access to transit, and both sidewalks and buses are much less costly to provide and maintain than are roads.

3) Bad for lawsuits

The law requires a reasonably safe facility. A jurisdiction can be sued if maintenance, snow removal, or ADA-compliant access is not implemented correctly or in a timely fashion. Poorly maintained sidewalks are the cause of about 50 percent of lawsuits involving a public agency and sidewalk-related injuries—even when the homeowner has primary responsibility. Just 25 percent of these cases involve only the homeowner in litigation. Even if the agency or municipality successfully defends itself, legal expenses are still costly. Public works officials and local politicians must decide how to provide winter-time mobility to reduce the associated liability risk. Additionally, fixing problems, investing in construction and maintenance inspections, enforcement, a reporting and complaints system, and documentation of responses, can all reduce a jurisdiction's liability in the event of a lawsuit.

2) Good for public safety

Good design, location, and maintenance of pedestrian facilities, including snow removal, greatly reduce the chance for accidents, injuries, and fatalities. They can also make it easier for emergency services to respond in the event of an incident. Poorly maintained facilities are a hazard to pedestrians, cyclists, and disabled people.

1) Good for elected officials

Voters all over the country like pedestrian facilities and have voted to tax themselves to get and maintain them! Well-maintained pedestrian facilities encourage use and project a positive image of the community and the responsible agencies. Surveys show that voters support using local, state, and federal funds for bike paths (54%), sidewalks (61%), improving the safety of children to walk or ride bicycles to school (70%), and mandatory sidewalks in new developments (72%). *Source: EPA/CDC, Greenstyles Survey; Healthstyles 2000*

BONUS!

Funding pedestrian facilities is just the right thing to do.

Latest ADA Guidelines: Design, Engineering, and Construction Issues

Mark Derry, Consultant, Eastlake, Derry & Associates, LLC, and member of the Public Rights of Way Access Advisory Committee for the U.S. Access Board. For this presentation, he represents the Mid-Atlantic ADA Center.

Background – ADA Guidelines

On Oct. 20, 1999, the U.S. Access Board created the Public Rights-Of-Way Access Advisory Committee (PROWAAC) to make recommendations for the Access Board to use in issuing new guidelines. It has become standard practice for the Board to establish advisory committees comprising people who represent various agencies and organizations to develop or update guidelines. PROWAAC, on which Mr. Derry represents an advocacy organization called the Independent Living Council, has looked at what kinds of issues and problems people with disabilities face in the built environment and at what point something becomes a barrier. The committee looked at people with all kinds of disabilities, not just those in wheelchairs.

The committee discussed numerous issues and came to some consensus. Some of the issues that the committee addressed include:

- People use a variety of mobility aids and devices, including canes, crutches, walkers, wheelchairs, and scooters. Mobility devices are getting bigger, so it is important to build for the average wheelchair.
- People using mobility devices need more time to cross an intersection.
- People with visual disabilities need sensory cues (information conveyed through non-visual means, such as textured pavement or audible pedestrian signals) to safely find their way.
- Outdoor facilities require more space than the guidelines for indoor Pedestrian Accessible Route (PAR) require. The 36-inch indoor-width recommendation is not enough outdoors, as people may be walking together and outdoor devices are often bigger.
- More and more people are using scooters. These need more space to turn around than is required by the current standards. The five-foot-turn turning norm could be widened.
- People traveling with assistance animals need more space.

With the growing elderly population, the expectation is that there will also be a higher percentage of disabled people. Between 2011 and 2020, 10,000 people will turn 65 every day. By 2020 there will be about 80 million people over 65, more than half of them disabled. Adding the 54 million people who already have disabilities, by 2020, there may be about 94 million people with disabilities, or about half of the population.

Specific Design Features

PROWAAC reviewed and made recommendations for the design of a variety of outdoor design features, including continuous-flow intersections, roundabouts, right-turn slip-lanes, tabled intersections, mid-block crossings and crosswalks, detectability at pedestrian street-crossings, accessible pedestrian signals (APS), pedestrian pushbuttons, marked crossings, islands and cut-throughs, and surfaces. The Access Board has recommendations for almost any situation. They

are available online (see the resources section of this paper). Mr. Derry cautioned, however, that cookie-cutter blueprints don't always work because there is an existing environment of telephone polls, benches, gutters, etc. Creativity is a must. Some important recommendations were presented.

Door-side Clear Zone

A person in a wheelchair needs an 18-inch-wide clear zone next to the latch-side of a door, so they have room to open the door (avoiding the swing) and enter.

Roundabouts and Rotaries

Roundabouts and rotaries are the enemies of accessibility because the science of roundabouts is that vehicles never stop. So how does one get across? At a normal intersection, a blind person listens to the flow of traffic, hears the light change, and figures out the speed. They take all of these factors into consideration when they cross the street, and, hopefully, there will be another curb ramp on the other side. However, none of this happens easily in a roundabout because traffic never stops. The compromise worked out by the committee is to install a pedestrian-activated signal with a button in order to stop traffic to allow a pedestrian to cross. When not in use, there would be no traffic signal.

Crosswalks

Crosswalks must have curb ramps with detectable warnings. The committee looked at examples all over the country to find the best design details. One city tested a metal guiding strip to help blind people using a cane across the intersection. This treatment worked well for the intended users, but did not hold up under a snowplow. Clearly, more research needs to be done in this area. Alternatively, it is very important that the curb ramps provide directionality (point at the opposite curb ramp) wherever possible, so that blind people don't end up trapped in the middle of an intersection. Sometimes there is not enough space to create directional curb ramps. For possible remedies, see the resources section.

Slopes and Cross Slopes

The maximum allowable slope is 8.3 percent, so for every inch of elevation one foot of distance (1:12) is required. Cross slopes are dangerous and a big problem for people with mobility devices. They pull chairs and other devices sideways and make them hard to control. The maximum allowable cross slope is two percent, and no, it is *not* OK for it to be even slightly greater! The jurisdiction may well be sued.

Landings and Transition Spaces

A flat area is necessary at the top and bottom of slopes and curb ramps to allow people in chairs to rest, regroup, or change direction. People in chairs need to be able to let go of their wheels without their chair subsequently moving. Driveway aprons are a real challenge with their differing slopes and angles. A minimum 36-inch-wide accessible route at the top of the apron is recommended, but 48 inches is preferred.

Curb Ramps and Drop-Offs

Changes in surface, materials, and joints must all be level. Allowing even a half-inch change in elevation between different surfaces is extremely dangerous for those with mobility devices.

Even a small lip can catch a wheelchair and dump the occupant and/or the occupant's belongings into the street or sidewalk.

Detectable Warnings

Detectable warnings are important for blind people, but the detectible domes are hard to push through for those with wheelchairs. For people with severe arthritis or spinal issues, the detectible warnings can be painful. The stamped concrete domes are no longer recommended because they don't hold up under snow-removal equipment. The new recommendations call for a 24-inch-deep strip of domes across the width of the ramp or drop-off. This is enough to provide a signal for the blind but minimizes the problems for other disabled users. Additionally, the layout of domes has been redesigned into a grid pattern, allowing those in chairs or scooters to avoid some of them.

Transit

Bus stops are required to be at least 96 inches long, measured from the curb or roadway edge, and 60 inches wide, measured parallel to the roadway. This area must be kept clear of any obstructions. Additionally, bus lifts *must* be maintained, by law, like any other ADA-compliant facility.

Independent Operation

Lifts outdoors and in buildings need to allow independent operation by the user, a requirement of ADA compliance. Seating in arenas should be provided for in advance. A disabled person should never have to go find someone to provide assistance.

Resources

Sometimes the rules and recommendations conflict, don't make sense, or don't address a specific situation. Get help! A great deal of free information is available online and there are a number of organizations available to help someone achieve reasonable accessibility:

A new set of revised standards (Americans with Disabilities Architectural Guidelines or ADAAG) is to be adopted by the Departments of Justice and Transportation as the new enforceable standard, with effective dates. Until then, the original ADA standards should be followed. The new guidelines will apply to new construction. Structures built to the existing standards will be grandfathered (just like the building code). The revised regulations will include or incorporate the following:

- Private Sector (Title III) Places of Public Accommodation and Commercial Facilities
- Public Sector (Title II) State and Local Government Facilities, Public Transit Facilities (Titles II and III)
- Part 1 ADA Scoping, Part 2 ABA Scoping (application), Chapters 3-10 Technical Information
- ABA, the 1968 Architectural Barriers Act, which applies to facilities designed, built, altered, or leased with federal funds, federal buildings such as post offices, and non-federal buildings built with federal money, such as schools

- Previous ADAAG Supplements—including state and local government facilities (1998), children’s environment (1998), play areas (2000), and recreation facilities (2002)
- New guidelines for amusement rides, fishing piers, golf facilities, saunas and steam rooms, swimming pools, shooting facilities with firing positions, and others
- Revised guidelines for play areas. These incorporate new research on surfacing to meet dual requirements—firm enough for a mobility device, but soft enough so a falling child won’t be hurt too badly
- Recommendations for outdoor developed areas—including technical guidelines and conditions for departure from the guidelines. Trail technical provisions include surface, running slope, cross slope, resting intervals, openings, clear tread width, passing space, tread obstacles, protruding objects, signs, and edge protection

The U.S. Access Board, 1-800-USA-ABLE, www.access-board.gov

The United States Architectural and Transportation Barriers Compliance Board (USATBCB), also known as the U.S. Access Board, is an independent federal agency with a staff of 30. The Board is made up of public members appointed by the president, as well as representatives from various federal agencies. In the event of a lawsuit, the ADA Standards for Accessible Design, available on the website, are the standards by which the case will be judged. ADA- and ABA-Accessibility Guidelines are in effect for forestry, while ABA covers federal projects and the Department of Transportation. The Access Board website also includes research results and product information.

The U.S. Department of Justice, 1-800-514-0301, www.ada.gov

The DOJ has an assistance team available to help with meeting ADA requirements.

National Center for Accessibility, ncaonline.org

The NCA conducts most of the research on outdoors access for the Access Board. Their research is available online at their website.

The ADA Information Center, 1-800-949-4232, www.adainfo.org

The toll-free number routes the caller to the nearest regional office (The Mid-Atlantic ADA Center). The Center provides free or low-cost information, assistance, and training related to ADA issues for individuals and agencies.

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A consultant who reviews plans, provides project-specific advice, and conducts training on ADA issues.

Developing Maintenance Plans for Sidewalks and Shared-Use Paths

Lorene Athey, Consultant, Institute for Public Administration, University of Delaware

Robert Garrett, Acting Chief of Programs and Services, Pennsylvania Department of Transportation

“Build it and they will come; maintain it and they will stay.” Robert Garrett, PennDOT

Background – Why Do a Maintenance Plan?

There are many important reasons to do maintenance plans. A maintenance plan can help a jurisdiction with the following:

- Improve safety, security, and accessibility
- Minimize exposure to lawsuits
- Allocate and request resources
- Protect its investment and reduce long-term costs
- Address specific goals, identify issues, problems, and gaps
- Improve coordination
- Protect life, property, and the environment
- Project a positive community image and maintain a quality outdoor experience

The law requires a reasonably safe facility. One good indicator is to ask, “Could a 10-year-old child use this facility safely?” Maintenance of pedestrian routes should also be considered a program of an entity covered by Title II, according to the Public Right of Way Design Guide. Section 35.133 states that a public entity that fails to keep accessible routes maintained and free of obstructions is in violation of ADA law. A significant portion of the nation’s population has no personal means of transportation. People who are disabled or elderly are especially likely to be dependent on sidewalks and public transportation. As all transit trips include a walking component, sidewalks that are lacking or in disrepair result in fewer transit trips made. Poorly maintained facilities serve to do the following:

- Strain road capacity by discouraging walking and transit use
- Project a poor image of the community and adjacent property owners
- Encourage crime—graffiti, trash, and general disrepair are signs that no one cares or is watching
- Constitute a safety hazard to pedestrians, cyclists, and disabled people, and create hazards for drivers when walkers are forced into the street

Parts of a Successful Maintenance Plan

A successful maintenance plan should include the following:

- An inventory of facilities
- Programs and procedures for inspections, enforcement, and complaints
- Policies and standards
- Maintenance tasks, including specific, routine, long-term, and weather-related tasks
- Prioritization criteria and prioritized tasks

- Staffing, management, and administrative issues
- Coordination of activities, opportunities, and agreements with other agencies

Some jurisdictions may already have much of this information, but it helps to bring it all together. Be sure to review and update the maintenance plan annually.

Inventory of Facilities

Anything that is built or installed needs to be maintained. Geographic information systems (GIS), global positioning systems (GPS), and spreadsheets are good tools and are becoming easier and cheaper to use. Keep the inventory updated as additions or changes are made to the system. How the inventory is structured will depend on each jurisdiction's specific needs. Some of the information needed may include the following:

- Type of facility (sidewalk or trail)
- Surface type
- How much/many
- How old
- Who is responsible
- Other features and amenities present
- Gaps in facilities or responsibilities

Inspections, Enforcement, and Complaints

It is extremely important that jurisdictions inspect all of their pedestrian and shared-use facilities on a regular basis to reduce liability. Inspections should be conducted for the following:

- Quality control of new construction
- Quality control of sidewalk repairs (whether completed by municipal staff, contractors, or homeowners)
- Routine sidewalk inspections to identify hazards and other issues
- Routine trail inspections to identify hazards and other issues

This is the place to describe programs and procedures for identifying problems. How does the municipality under review conduct the various types of inspections? How often are they performed? The jurisdiction has an obligation to enforce its codes and laws. If it does not, it can be held liable. In particular, it is important to enforce laws related to the following:

- Snow removal
- Obstacle removal, such as trash cans and vehicles
- Sidewalk repairs

State any programs and procedures related to enforcement in this section. If enforcement does not occur, find out why and take steps to address those issues (such as creating a volunteer program to shovel snow for seniors and disabled residents).

How do citizens register complaints or report problems? How are problems brought to a jurisdiction's attention? Is it easy for citizens to report problems? Many jurisdictions have instituted easy ways for the public to identify problems and complaints, including hotline phone

numbers, comment boxes on trails, and online reporting. Discuss the complaints-reporting system here.

Once problems have been identified through inspections, enforcement, or complaints from the public, how does the jurisdiction respond? Explain how the jurisdiction handles inspection reports and complaints in this section. Be sure to respond to all complaints and address problems found or reported in a timely manner. Document all inspection and enforcement activities and complaints and track how they were handled. It is very important to document everything. These records (or lack thereof) will be reviewed in the event of a lawsuit and can either indict or absolve the municipality of liability.

Policies and Standards

Gather all the related policies together for easy reference. Do any of them need to be updated or revised? Do any need to be added? Some examples include the following:

- Snow removal policy and/or law
- Sidewalk repair policies
- Trail etiquette and rules
- Trail closure policy or prohibitions

What is and is not considered acceptable? The ADA law and local codes dictate some standards. Others may come from town policies. Do any need to be added or revised? Some standards to consider are:

- What is the intended response/repair time?
- How often should various maintenance tasks be completed?
- How is it determined if a facility should be replaced instead of repaired?
- What materials and specifications are acceptable for repairs and replacements? For example, is it OK to fix a concrete sidewalk with asphalt?

Specific Maintenance Tasks

Anything that is built or installed needs to be maintained. Maintenance tasks can be divided into three types:

- Routine tasks
- Long-term tasks
- Weather-related tasks

Routine Tasks

Pavement Condition: Conduct routine inspections to look for slip and trip hazards, as well as other safety issues. Inspect for and repair cracks, vertical displacement, spalled areas, and places that trap water. Some percentage of the entire system should be inspected on an annual basis. Some surfaces will need more day-to-day attention than others.

Vegetation Management: Manage vegetation to ensure visibility and sightlines and remove vertical and horizontal obstructions. Provide eight to ten feet of vertical clearance and two feet of horizontal clearance. Remove weeds from pavement and control invasive species. Use proper pruning practices and be careful not to “over-harden” through excessive pruning and vegetation removal. This can reduce the aesthetic appeal of the trail and lead to a less pleasant walking

experience, thereby discouraging users. Remember that fewer users can lead to increases in crime, graffiti, and vandalism.

Signage: Inspect, replace, repair, and clean signage as needed.

Striping and Markings: Inspect and repaint crosswalks and pavement markings as needed.

Lighting: Inspect, clean, fix, and replace fixtures and light bulbs as needed. Don't forget to check hazard lights.

Trash, Graffiti and Debris: Sweeping, trash, and debris removal are important for safety and security as well as for aesthetics, and should be done regularly. Make sure debris is not swept into the bike lane. Do not let debris accumulate and increase sweeping in areas where there is excess trash and broken glass. Remove graffiti as quickly as possible, ideally within 72 hours. Empty trash cans regularly.

Drainage: Clear drains and drainage structures and check trails for washouts after storms. On trails, this can be the biggest single line item in the maintenance budget. For sidewalks, blocked drains can cause flooding and ice at handicapped ramps. Clear drains regularly, more at certain times of the year, such as in the fall, and before and after storms.

Security Technology and Street Furniture: Security equipment must be operated and monitored around the clock to minimize liability. Benches, trash cans, and other street furniture should be inspected annually and repaired as needed.

Other Routine Maintenance: What other items need to be maintained? For example:

- Bollards, gates, fences
- Buildings
- Toilets

All should be inspected at least annually. Some facilities, such as toilets, will need to be addressed more often. How often these tasks are required will vary based on climate, site conditions, the type and quality of construction and materials, level of use, visibility, etc. The suggestions below are for recreational trails.

Drainage maintenance.....	3-5 times per year
Sweeping.....	16-24 times per year
Trash removal	16-24 times per year
Vegetation management.....	8-12 times per year
Mowing	8-24 times per year

(Source: Olka, Searns, & Flink, 2001)

Long-Term Tasks

Inspect all items at least once each year. A good time to do annual inspections is late winter and early spring. Replace, resurface, or repair, based on the needs and life cycle of the facilities and materials. How often resurfacing is required will depend on the climate, degree of use,

maintenance practices, use of de-icing salts, and other issues. The following are suggestions from the national literature.

Asphalt	7-15 years
Concrete	20+ years
Boardwalk	5-7 years
Wood chips	Every year
Crushed stone.....	7-10 years, with frequent repairs

(Source: Olka, Searns, & Flink, 2001)

Some other long-term tasks include repainting trail markers every five years, and replacing street trees in tree wells every 7 to 15 years.

Most pedestrian systems, like any other public facility, have problem spots. Correcting problems should be part of the maintenance plan. This section should list specific problems that need correcting and a plan for systematically addressing them. Some examples of problems include the following:

- Drainage and erosion problems
- Safety hazards
- Constant graffiti targets or areas with a high occurrence of crime
- Obstructions
- ADA-compliant curb ramps

Finally, long-term improvements to the system may be desirable. If the inventory found gaps in the facilities, they should be addressed here.

Weather-Related Tasks

Storms can wreak havoc on pedestrian systems, creating obstructions, hazards, debris, and wash-outs. Be sure to inspect trails after storms for obstructions and wash-outs. This is mostly a trail issue; however, branches also fall on sidewalks. Be sure crews remove storm debris from sidewalks too!

Municipalities have a legal obligation to make sure snow is removed within a reasonable period of time; therefore, jurisdictions must enforce their laws or do their own removal. Of agencies surveyed, 58 percent have been sued for a sidewalk incident related to snow. In addition to being a physical obstruction and a slip/trip hazard, snow piles block pedestrian and motorist visibility at intersections and crosswalks. People who rely on public transportation and sidewalks can lose their jobs if they cannot get to work. How long could anyone expect to keep their job if they could not get to work anytime it snows?

Clearly, a snow removal plan for pedestrian facilities needs to be part of the maintenance plan. In addition to clearing sidewalks, it is also important to clear curb ramps and transit stops. They must also be dug back out after the snowplow goes by. Some paved trails, especially those used by commuters, should also be cleared of snow. The plan should include provisions for the following:

- Clearing curb ramps and bus stops

- Hand digging and/or special equipment needs
- Snow storage, especially at intersections and facilities with high pedestrian volumes
- Staff allocation (who does what)
- Staff and contractor training
- Priorities (what facilities/repairs get done first)

Prioritization

Priorities need to be set and followed concerning what work needs to be completed, and in what order, for all maintenance tasks. GIS and GPS can help identify priority areas. Some criteria to consider include the following:

- Accidents/hazards/safety issues
- Presence of special-needs users such as children, the disabled, or elderly
- Frequency of use or use as a commuter route. Does it connect to other modes of travel such as transit?
- Crime, graffiti, vandalism
- Conformity with laws (ADA), codes, and standards
- Pavement condition, lifecycle
- Slopes or other exacerbating conditions

Staffing, Management, and Administrative Issues

Some issues to consider in developing the maintenance plan include the following:

Work-zone safety: Set up work zones for both pedestrian and worker safety. Where bicycles are present, the work-zone safety plan should be very similar to the safety plan for roads.

Staff and Contractor Education: Educate staff and contractors not to block pedestrian, bike, or ADA-accessible facilities with maintenance vehicles, equipment, or trashcans. Educate inspectors and enforcement staff on ADA and other requirements. Educate snow removal staff, including any contractors, on how to plow to avoid casting, avoid piling up snow at corners, and clear out curb ramps by hand, if need be. Coordinate pedestrian-facility clearing with any snowplows under the jurisdiction's control. Practice runs with piles of sand, before a snow event, may be helpful.

Construction, Contractors, and Contract Stipulations: Work with contractors and developers to avoid sidewalk blockages and closures. Minimize the impact of closures when they are absolutely necessary. When construction blocks an accessible route, an alternative accessible route must be provided. Contracts with contractors can include stipulations not to block pedestrian, bike, or ADA-complaint facilities with maintenance vehicles, equipment, or other items. Contracts for snow removal services can also stipulate that contractors avoid casting, piling up snow at corners, and clear out curb ramps by hand, if need be. Include stipulations, perhaps even penalties, in the contract to ensure the immediate correction of any problems that occur.

Overall Staffing and Equipment Needs: In order to accomplish the tasks laid out in this plan to the desired standards, what staffing and equipment are needed? Are they presently available, or will the jurisdiction need to plan to acquire them? Access to good equipment is critical. The

right equipment for the job can significantly improve efficiency and response times, as well as reduce job-related injuries.

Public Education and Outreach: Many problems can be addressed or lessened with public education and outreach. Assistance from others in the agency, as well as outside agencies, may be needed to develop and implement effective public outreach programs. Some issues to address might include the following:

- Property-owner responsibilities related to sidewalk repair, snow removal, and trash cans
- How to report problems and complaints
- Pedestrian safety and awareness
- Cyclist and motorist awareness of pedestrians
- Trail etiquette

Some possibilities for reaching the public include newsletters, public service announcements, newspaper ads, information campaigns and announcements, agency websites, cable TV, the inclusion of information in mailings and on bills, signage, brochures and flyers, and agency events.

Coordination and Agreements: Negotiate agreements to address gaps in service, areas of confusion, additional services, or overlaps. Agreements may be between or within agencies, with homeowners associations, developers, or volunteer organizations. Some specific areas of concern might include: snow removal, maintenance responsibilities, graffiti removal (such as highway or railroad bridge underpasses adjacent to trails), enforcement, and accident/emergency response. Some additional helpful plans or protocols may include the following:

- Pedestrian-safety plan
- Emergency-response plan
- Trail-security plan

PennDOT has an Agility Program whereby it has agreements with jurisdictions, governments, and agencies to trade services. For example, PennDOT might do road restriping for a small town in return for snow removal from sidewalks on bridges. Agencies look at the strengths and capabilities of each partner to come up with a mutually satisfying trade of services. Other examples of services traded include repairing traffic lights, providing training for staff, sweeping, opening fire hydrants, paving, washing concrete bridges and walks, and providing meeting space. Some of the benefits have included the following:

- Increased cost efficiency
- More abundant and improved services
- Better use of available resources, such as equipment, services, and staff
- Increased training opportunities
- Improved relationships with governments and agencies

In order to develop an agreement, there are three steps to exchanging services. First, both parties must evaluate their opportunities (what services can they provide for each other). Once an Agility agreement is completed (who will do what), the agencies negotiate their work plans (how will it get done). Eligible partners include the following:

- Boroughs, townships, counties, cities

- Transit agencies, water, sewer, housing, and municipal authorities
- Councils of government and metropolitan planning organizations
- Rural planning organizations
- Public school districts and universities
- Volunteer fire, rescue, and ambulance companies
- State and federal government agencies

Budgeting

Once a maintenance plan has been completed for your jurisdiction, the first two steps in putting together a budget are also completed. The remaining steps:

- Figure out the bookkeeping.
- Determine typical costs.
- Determine eligible funding sources.

Figure Out the Bookkeeping: What items need to be included in the budget (e.g., labor, equipment costs and repairs, materials, overhead)?

Determine typical costs: The municipality may already have experience doing many of these tasks, and therefore, have a good idea how much money to budget. Other tasks may require research into how much others have spent to do similar tasks on similar facilities. If comparing someone else's costs, make sure to know what budget items were and were not included. For example:

- Labor, overhead, overtime
- Equipment costs, such as purchase, fuel, and repairs
- Landfill charges
- Office space and utilities
- Donations of time or materials

(Source: Olka, Searns, & Flink, 2001)

Also remember that maintenance costs can vary substantially depending on the type of facility, degree of use, and climate. Some typical resurfacing costs:

Asphalt\$10 per linear foot
 Concrete\$25 per linear foot
 Crushed stone.....\$5 per linear foot

Some typical annual trail costs:

Drainage\$500 per mile
 Trash removal\$1,200 per mile
 Vegetation management...\$1,000 per mile
 Mow three-foot shoulder..\$1,200 per mile
 Minor repairs.....\$500 per mile
 Maintenance supplies.....\$300 per mile
 Equipment costs\$600 per mile

(Source: Olka, Searns, & Flink, 2001)

Determine Eligible Funding Sources: Try to determine maintenance costs and needs when the project is still in the planning stages and, whenever possible, try to get money set aside for maintenance before the project is built. It is much harder to find funding for maintenance and repairs than for new construction, therefore; make sure new facilities are designed and constructed to be long-lasting and minimize maintenance.

Ideally, one wants to have a dedicated source of funding, such as impact fees, permit fees, fines, program fees, an annual operating budget, or an endowment. However, most maintenance programs are funded through a number of sources:

- Operating budget
- Capital budget
- Grants and other sources of public money such as Transportation Enhancements Funds, or Safe Routes to School programs
- Other sources
 - Developer contributions and agreements
 - Homeowners and homeowner associations
 - Businesses and special districts
 - Sponsors, partners, volunteer organizations

Don't forget fundraising opportunities, possibly in coordination with a volunteer partner. Also, voters like pedestrian facilities and have voted to tax themselves to get and maintain them.

Surveys show that voters support using local, state and federal funds for:

- More bike paths: 54%
- More sidewalks: 61%
- Improving the safety of children to walk or ride bicycles to school: 70%
- Mandatory sidewalks in new developments: 72% *Source: EPA/CDC, Greenstyles Survey; Healthstyles 2000*

Resources

Delaware Center for Transportation, www.ce.udel.edu/dct

Larry Klepner, 302-831-6241. DCT and the T² Center provide research and training related to transportation design and maintenance issues for government employees (federal, state and local).

DelDOT Bicycle and Pedestrian Coordinator, Anthony Aglio, 302-760-2509

Information and assistance related to bicycle and pedestrian issues and the Pedestrian Action Plan, as well as programs such as Transportation Enhancements and Safe Routes to School.

Dover/Kent County MPO, www.doverkentmpo.org, 302-760-2713

WILMAPCO, www.wilmapco.org, 302-737-6205

Information and assistance with transportation related issues.

**Institute for Public Administration, www.ipa.udel.edu/localgovt
The College of Human Services, Education & Public Policy, University of Delaware.**
IPA provides training for local government staff (Doug Tuttle, 302-831-0718), and planning assistance for local governments (Martin Wollaston, 302-831-4930).

Mid-Atlantic ADA Center, www.adainfo.org, 1-800-949-4232
Provides free or low-cost information, publications, assistance, and training related to ADA issues.

National Park Service, www.nps.gov/noco/parkmgmt/planning.htm
Documents related to trail planning, design and maintenance, including *Handbook for Design, Construction and Maintenance*.

**Office of State Planning Coordination,
www.stateplanning.delaware.gov, 302-739-3090**
Planning assistance, model municipal code, Livable Delaware Planning Grants, Infrastructure Planning Grants.

**PennDOT's Agility Website,
www.dot.state.pa.us/Internet/Bureaus/pdAgility.nsf/AgilityHomepage**
More information about PennDOT's Agility Program.

Summary Report—Sidewalks and Shared-Use Paths: Safety, Security and Maintenance, www.ipa.udel.edu/infrastructure/trails
This paper reviews the national literature related to best practices for designing, maintaining, and managing pedestrian facilities to maximize safety and security and minimize maintenance. The paper includes additional resources, as well as a summary of common causes of pedestrian accidents and design responses to address them. Podcasts of the 2007 and 2008 forums are also available.

Olka, Kristine, Robert Searns and Charles Flink, *Trails for the 21st Century: Planning, Design and Management Manuals for Multiuse Trails*. 2nd ed. Island Press: Washington, 2001.
Good resource on designing, constructing, and managing shared-use paths. It includes a section on developing maintenance plans.

Zelinka, Al, and Dean Brennan. *SafeScape: Creating Safer, More Livable Communities through Planning and Design*. Illinois: American Planning Association Planners Press, 2001.
This is an excellent reference on designing and maintaining pedestrian facilities for security. It includes a section on conducting neighborhood safety audits.

Delaware Statewide Pedestrian Action Plan

Anthony Agilo, Bicycle/Pedestrian Coordinator, Delaware Department of Transportation

Background – Walking Issues and Elements

Walking is the most fundamental form of transportation. Every trip involves some pedestrian activity, so don't make walking harder. Walkability takes into account the quality of pedestrian facilities, roadway conditions, land-use patterns, community support, security, and comfort for walking. Many important issues need to be addressed to improve walkability.

Land-Use Setting

- Community
- Accessibility
- Location of destination
- Quality of connection

Site Design

- Pathways
- Building access ways
- Related facilities

Street Design

- Sidewalks
- Crosswalks
- Pedestrian amenities
- Pedestrian scale
- Roadway conditions (e.g., lane widths, traffic volumes, traffic speeds, pedestrian signals)

Executive Order No. 83: Key Issues

- Ensure that paths and sidewalks are continuous and interconnected, where feasible.
- Develop consistent design standards for crosswalks, sidewalks, and pathways.
- Clarify the maintenance responsibility for sidewalks.
- Review traffic rules and driver behavior to help support a safer pedestrian environment.
- Promote land-use and traffic patterns that encourage walking and reduce air pollution. Are we living in subdivisions that are not interconnected? Are there transit opportunities?

To address the executive order, the Advisory Council on Pedestrian Awareness and Walkability was created, consisting of representatives from many agencies and organizations, to advise and provide input. In addition, the Technical Advisory Committee was also created consisting of staff from DelDOT, DART, Office of State Planning Coordination (OSPC), Federal Highway Administration (FHWA), and other agencies, as well as organizations such as the Delaware Homebuilders Association.

The Pedestrian Action Plan will have three parts:

- Phase I: Policy Analysis Document
- Phase II: Statewide Pedestrian Action Plan
- Phase III: Implementation

Phase I: Policy Analysis Document

The policy document was completed in July 2007. It reviewed all the applicable federal legislation related to ADA, ISTEA, TEA-21 and SAFETEA-LU, and the FHWA Policy for Pedestrian Facilities, as well as state legislation and DelDOT policies and manuals. Some of the specifics include the following:

- ADA Requirements: Develop a transition plan to remove barriers. Designate an ADA coordinator. Ensure ADA compliance. Provide ADA-compliant facilities for all construction and maintenance projects, except patching and nonstructural repairs, and maintain a path of travel for pedestrians
- ISTEA, TEA-21 and SAFETEA-LU (Federal transportation legislation): Provide funding for pedestrian and bicycle facilities and education; designate a bicycle and pedestrian coordinator; establish a Safe Routes to School coordinator; and provide traffic signs and pavement markings for older drivers and pedestrians
- FHWA Policy for Pedestrian Facilities: Integrate ADA compliance with the long-range transportation plan. Be responsible for ADA-compliance requirements and guidelines for design, construction, and maintenance, regardless of the funding source. Promote accessible transportation systems and adopt the ADSA guidelines approved by the U.S. Access Board.
- Delaware Law: General Powers and Duties (Title 17), Liability (Title 10), Community Streets and Roads (Title 9), Pedestrian and Driver Rights and Duties (Title 21), and the White Cane Law (Title 16).
- DelDOT policies and manuals: Policy Implement for Sidewalks, Policy Implement for Bus Stops, Road Design Manual, Design Memorandum, Manual of Uniform Traffic Control Devices (MUTCD) Standards and Supplements, and the Subdivision Manual.

The Policy Document also sets a vision, goals and recommendations. The vision is to “Improve the quality of life throughout Delaware by promoting safe and convenient pedestrian travel that enhances personal mobility, accessibility, and fitness.”

Specific recommendations include typical intersection/crosswalk and pedestrian-facility elements (see diagrams in the presentation). It is intended that the Phase II plan element will include sections related to the following:

- Inventory and Plan
- Standards and Guidelines
- Implementation and Education
- Responsibility and Funding

Phase II: Statewide Pedestrian Action Plan

The Statewide Pedestrian Action Plan was initiated in September 2007. DelDOT has already conducted pedestrian counts in 20 locations across the state (urban, suburban and rural). The plan will involve studying pedestrian barriers and driver and pedestrian behaviors, as well as researching and developing an inventory methodology, and completing an inventory of the

pedestrian network. The committees have already started to draft a statewide ADA policy, as well as ADA standards and guidelines. The plan will include model maintenance codes and programs in an effort to make maintenance agreements consistent across many jurisdictions. The plan also will involve reviewing transportation and comprehensive plans from Delaware's local jurisdictions.

Phase III: Implementation

Some early implementation actions have already been initiated, including developing a complete streets policy and creating positions at DelDOT for a Title II ADA Coordinator and a separate pedestrian coordinator (instead of the current Bicycle and Pedestrian Coordinator). Other anticipated implementation items include the following:

- Incorporate the recommendations into new construction.
- Update the ADA Transition Plan to remove barriers and prioritize improvements.
- Conduct staff training on ADA issues.
- Provide technical assistance to local agencies.
- Continue ongoing evaluation of lessons learned.
- Prioritize pedestrian-facility improvements based on safety, pedestrian volumes, transit access, and other land-use-based pedestrian-trip generators.
- Develop a prioritization system for construction of pedestrian facilities.
- Research and identify implementation strategies and funding sources.
- Conduct public outreach.
- Develop plans for specific projects.

DelDOT will track a number of success factors including: public feedback, state and local partnerships, increase of quality facilities, improved facilities, behavior changes, increased pedestrian trips, and reduction of pedestrian accidents.

The pedestrian plan documents are available online at www.deldot.gov, go to the project link and click on pedestrian plan.

ADA Compliance and Responsibilities: An Overview

Sally Conway, Director ADA Technical Assistance, U.S. Department of Justice

The ADA sometimes feels like a building code, and like a building code the devil is in the details. Don't let anyone ever say that small details are not important. Three-quarters of an inch makes a big difference. The expectation isn't that everyone becomes an ADA expert, because it takes a while.

Background – Civil Rights

An important thing to remember is that the ADA is a civil rights law. The reason it came into being was that people with disabilities had been chronically limited. They had been segregated, denied participation, and not allowed to make their own decisions. At that time, all the programs for people with disabilities were benefits programs. In other words, "If you do this, we will give you that."

Many people know Section 504, but the rehabilitation law was supposed to be a benefits law. Some smart people in 1973 snuck in Title V, which was a civil rights law. However, regulations were not promulgated (allowing enforcement) until 1978. Even then, the new regulations only applied to the federal government, federally assisted programs, and contractual relationships with the federal government in excess of \$2,500.

Without the Civil Rights Act of 1964, there would be no discussion of disability rights. It was a novel concept that people could be faced with discrimination just because they were a member of a class of people. It brought to the forefront the whole idea of a protected class; that by simply how they were born, an entire group of people tended to experience bad things.

So the civil rights act was a watershed moment for people with disabilities. Title II Public Accommodations addresses inns, hotels, restaurants, gas stations, and movie houses. These are all related to mobility. People couldn't travel if they couldn't stay in a hotel, couldn't use a gas station, and couldn't eat at a restaurant. Movie houses relate to public gathering, allowing people to be connected to other people. Until that point, the patchwork of laws rarely addressed true mobility and connectivity.

The ADA law went through more Senate and House Committee hearings than any other civil rights law. Everyone had something to say before ADA passed. Stories were collected from disabled people around the country who had experienced a lifetime of discrimination and exclusion. It had to be demonstrated that a very specific group of people was subject to a history of pervasive and disproportionate segregation and discrimination. Disabled people were not allowed to participate, to go to school, to get a job, or to get on a bus. They were not allowed to fail or succeed.

What ADA Says

Essentially, ADA provides fundamental access to citizenship, American life, and employment. Nowhere does it say disabled people should get better or different treatment. There are no

quotas and no money attached to it. It simply says people with disabilities should have an equal opportunity to access everything that everyone else in the country can. If all external barriers are removed, people with disabilities can succeed or fail on their own. This law allows for personal responsibility. External barriers cost billions in dependency and lost opportunity.

Things have gotten remarkably better over the past few decades. Today, disabled people go to work each day just like everybody else. Without ADA, disabled people would not have the opportunity to ride Amtrak to get places. They wouldn't be able to take a plane or drive a car. Now a disabled person can rent a car with hand controls, and it is not a special thing. (Today, Ms. Conway flies 20 times a year without the problems she faced before ADA).

Most people think of ADA as two percent cross slopes and toilets a foot and a half from the wall. It is easy to get caught up in the minutia and forget that this is a civil rights law, backed up by the civil rights laws of 1964 and 1968. Its purpose is to provide equal opportunity to access and to participation.

Who is Affected?

Today, about 18 percent of the population, almost one in five people, have disabilities. Twenty-one million families have at least one member with a disability. In 2002, there were 35 million people 65 and older, of whom 42 percent said they had a disability. In addition, as people get older they experience sensory or physiological changes, which they might not call a disability (such as people who need hearing aids). There is a huge segment of the population that would benefit from accessibility features, even if they don't admit it. Between 2000 and 2030, the number of people over the age of 65 will more than double, equaling 71 million, according to the U.S. Census. Worldwide, between 2005 and 2050, the number of people age 60 and over will triple, according to the U.N. Keep in mind also, people over the age of 65 typically control a lot of money and routinely vote and participate in the political process.

People with disabilities are not a special interest group—one may join at any time. At some point in everyone's life, they are likely to need an accessibility feature, either temporarily or permanently. Even a mom or dad with a stroller will appreciate them. Automatic doors, while not necessary, are very helpful for the disabled, but were invented in the 1950s by a grocery store to make it easier for average customers to buy more stuff.

Things today are much better, but there are still problems, and it is the little things that make the biggest difference. The devil really is in the details. Some common oversights include the following:

- Sometimes, at the top of ramp, there is a locked door or a step.
- When snow gets stuck in curb cuts, chair users are dependent on friends or strangers to lift them over the curb ramps, or they are stuck at home.
- Any cross slope is brutal to someone in a chair. Two percent is the compromise.
- A three-quarter-inch lip on a curb ramp is a big problem.

“Nobody is burning a wheelchair on my lawn.” Even so, discrimination does happen, not because of hatred, but because of indifference or because it gets lost in the pile of everyday problems.

Responsibilities

How can an agency or municipality do the most with the resources it has available? Here are four things to do that will put any agency in a much better position if a complaint is registered against it:

- 1) ADA clearly requires Title II entities with 50 or more employees to have an ADA coordinator or designated ADA employee. Not having one is a very bad thing. Should one be unlucky enough to go to court, the first question asked will be what prior planning was done. Failure to designate a coordinator does not show a good faith effort. Anyone can screw up; it is going to happen, but making a good faith effort helps in court. The most common complaint against Title II entities is for an unusable curb ramp. When complainants are asked if they contacted someone, they often say that they tried to contact the ADA coordinator, but no one knew who that was. Alternatively, the Title II entity might say they do have an ADA coordinator, but they have not told the public who it is. Make sure the front-line people know who the ADA coordinator is and how to contact him/her.
- 2) Do not avoid people who complain. People just want mobility and they would much rather work with the appropriate entity to get it than file a lawsuit. People need to know a solution is being sought. Do not ignore complaints. Get back to them.
- 3) Entities with more than 50 employees need to have a grievance procedure. If not, look at the process for Title VII, for the civil rights act, etc. Don't reinvent the wheel; adapt that existing process for ADA. Be realistic about the actions and timeframes in the process so that they can be met. Have a process and follow it.
- 4) Reach out to people with disabilities in the community. Communication is important and can help in setting priorities. Something a staff person might consider a priority (outside of safety issues), might not be important to the disabled community. Conversely, something overlooked by the professionals may, in reality, be very important. Also, if you sit in front of someone and shake his/her hand and are nice, he/she is far less likely to throw a grenade at you, far less likely to file a lawsuit, and it shows good faith.

The decisions we make now will affect us for many, many years, so we need to do it right the first time. Nothing in the ADA explicitly requires the most expensive solution. It doesn't have to be the best in the world. It just has to provide access. There will always be people who demand a Hummer when a beat-up Dodge van will do just as well.

Remember the goals of the statute:

- Equality of opportunity
- Full participation
- Independent living
- Economic self-sufficiency

Panel Discussion: Questions and Answers

Ed O'Donnell, Moderator, Policy Scientist, Institute for Public Administration, University of Delaware

Anthony Agilo, Bicycle/Pedestrian Coordinator, Delaware Department of Transportation

Lorene Athey, Consultant, Institute for Public Administration, University of Delaware

Sally Conway, Director ADA Technical Assistance, U.S. Department of Justice

Mark Derry, Consultant, Eastlake, Derry, Associates, LLC and Member of the Public Rights of Way Access Advisory Committee for the U.S. Access Board.

Robert Garrett, Acting Chief of Programs and Services, Pennsylvania Department of Transportation

Question 1: How many of the towns here have a pedestrian plan? Three? My question is should those plans have goals and performance measures. What do people do about performance measures and goals and how do you write them in a meaningful way?

L.A.: I think the first step is to have a plan. As you noted, only three municipalities in this room have a sidewalk plan. There is so much work to be done in the area that you just have to jump in and start and not get bogged down too much.

M.D.: Appointing an ADA coordinator and a putting a grievance procedure in place are important, and then you can use goals as a good way to cover your bases. The ADA Title II Action Guide (available online at the ADA Action Center) can help you put these together and work on your transition plan. Put together an advisory board, committee, or task force of people with disabilities. These are the people who would file complaints, and they can help you set goals and deal with complaints. When you do good things, put it in the paper, have a ribbon cutting, make a big deal. You should also get the Centers for Independent Living (three in Delaware) involved. These are the people who teach their peers how to complain. (Mark also recommends putting your transition plan into an Excel spreadsheet that your engineers can access. This can help get your projects funded).

S.C.: Your transition plan can be stretched to address issues way beyond ADA too. Additionally, the regulations outline specific steps and can be expanded to become your process. Having an actual person accountable instead of an entity makes a real difference.

Question 2: With respect to trails and security, what experiences do you have with call boxes; do they help, are they valuable, or do people push the button and run away? Are there places where we shouldn't put them?

M.D.: On call boxes, locate them where a wheelchair can approach them (firm surface etc.) and make them low enough for people to reach them.

L.A.: In this age of cell phones, call boxes are mainly important to create a perception of safety/security. Cameras can be a liability because they create a perception of 24-7 monitoring and if they are broken or no one is monitoring them then you can get into trouble. Cameras should be used only in some limited situations and must be monitored 24-7.

Charlie Emerson, City of Newark Parks and Recreation: Here in Newark there is a trail with call boxes the Hall Trail. This trail connects three parks, several residential neighborhoods, and

the University, so it is used heavily. Very rarely has someone misused the call boxes. I would not hesitate to use them again.

Paul Tiernan, City of Newark Police Chief: Yes, the trail boxes work great. However, we have a police call box near a certain building, and people think pushing the button will get them into the building. So the call boxes are only good if its use is obvious.

Question 3: *Is there any downside in having an ADA coordinator if you have fewer than 50 employees and are not required to have one? Could it create a situation whereby all kinds of complaints suddenly are made?*

S.C.: I don't really see a downside, but an upside is that it shows that it is an issue, a priority, and a valued constituency. It creates goodwill. Also, especially in a small community, if someone is going to complain, they will know whom to contact and will complain anyway.

M.D.: Your coordinator should be presented as somebody who will help your agency meet ADA compliance. That person should be someone who makes contacts and helps find resources. Your committee can also help define the role of this person and deal with complaints.

S.C.: You can control this person's role and the public perception of the position. You do not want to present your ADA coordinator as an investigator, or you will have problems. He or she may be seen as the "ramp police." But if he/she is presented as the point person who will help improve accessibility, then it looks better. Your ADA coordinator is also not an advocate—that would be a conflict of interest. Carefully think through how you rollout your ADA coordinator to avoid the investigator perception.

Question 4: *We have multiple midblock crossings and a local ordinance that cars must yield to pedestrians, and that pedestrians can't walk out in front of vehicles. DeIDOT and the MUTCD [Manual of Uniform Traffic Control Devices] Manual state that you must stop for pedestrians in front of crosswalks. Here, pedestrians cross without looking, assuming they have the right-of-way. The result is either a pedestrian is struck or a car slams on its brakes and gets rear-ended. How do we make it more clear, and reconcile the conflicting messages?*

T.A.: You could try some supplemental warning devices in specific locations. Additionally, perhaps you could move the yield- or stop-bar markings farther down the road to allow better sight lines. The law can be very gray, and we will be reviewing and hopefully clarifying this issue as part of the Pedestrian Plan. It would also help if you could adopt a law that says you must stop rather than a yield-to law.

L.A.: Some places across the country are experimenting with signing and programs to make pedestrians more aware that they have to look both ways, and also to make pedestrians in crosswalks more visible to drivers.

Question 5: Expound on cross-slope problems and mid-block crossings.

M.D.: Mid-block crosswalks are too small to get a level area. We will have to look into that issue. Any kind of slope affects a chair a lot. Slope is a huge issue that makes a sidewalk difficult and dangerous to navigate. Moisture or frost can really exacerbate problems.

S.C.: Being on a slope not only pulls your chair (wheels) or device, but also tilts the person (weight and center of gravity). In some situations, a chair or scooter might only be on three wheels, causing the chair to be unstable and easy to tip over. Fighting the slope (to avoid tip-over or loss of control) requires a lot of extra energy, can leave the person exhausted, and may require the person to torque their body into an unnatural position, causing injury.

M.D.: A lot of people in chairs injure the rotator cuffs in their shoulders because of slopes. When your chair is pulled down, so are you. Torn rotator cuffs are a common secondary disability of people who use wheelchairs.

Question 6: Is it reasonable or unreasonable to have a plus or minus one percent on slopes, only on a case-by-case basis?

M.D.: No! Sometimes in court a judge will say there can be a small deviation (maybe .5%), but only for a particular case. We never advise tolerance because we are afraid that design professionals will then design to three percent all the time. What is wrong with using one and one half percent? Then the civil engineers complain about water collection, but we can still move the water. The maximum is two percent, and make sure that “two percent maximum” is written on the plans.

S.C.: Sometimes there might be issues on very specific site constraints that make two percent impossible. On some retrofits, two percent could be a technical impossibility or a structural impracticability. However, in these cases the standard of proof is very high and a responsible person must sign-off on it. Even then, it may only be allowed for a very short run.

M.D.: See the PROWAAC Alterations Manual, available online. This manual provides guidance on working with existing situations and includes many examples and drawings on how to make a bad situation better.

Question 7: Can't wheelchair manufacturers make a self-leveling chair that will help with the cross slope? Some lawnmowers can do that.

S.C.: The ADA requires that the environment be manipulated, not the person who uses a device. We don't just need accessibility features for wheelchairs; strollers and other devices also benefit.

There is the iBot Chair that runs on a gyroscope and tilts back, raises you to eye level with people, and climbs stairs, but it costs \$30,000. There are also frog-leg chairs with heavy-duty suspension systems, but they are heavy and not practical for everyday use. Some people simply can't push the heavier chairs and need a lightweight chair. For trails that are so rough that won't

be the same if paved, then maybe people should use special equipment, but one shouldn't need special equipment to go from the metro to work.

Appendix A: Resources

ADA

The U.S. Access Board, 1-800-USA-ABLE, www.access-board.gov

The United States Architectural and Transportation Barriers Compliance Board (USATBCB), also known as the U.S. Access Board. Available resources include the *ADA Standards for Accessible Design*, which is the current legal standard. See also the *PROWAAAC Alterations Manual*. This manual provides guidance on working with existing situations and includes many examples and drawings on how to make a bad situation better. The Access Board website also includes research results and product information.

The Department of Justice, 1-800-514-0301, www.ada.gov

Has an assistance team available to help meet ADA requirements.

National Center for Accessibility, ncaonline.org

The NCA conducts most of the research on outdoors access for the Access Board. Their research is available online at their website.

The ADA Information Center, 1-800-949-4232, www.adainfo.org

The toll-free number routes the caller to the nearest regional office (The Mid-Atlantic ADA Center). The Center provides free or low-cost information, assistance and training related to ADA issues for individuals and agencies. The *ADA Title II Action Guide* can help with Transition Plans.

Mark Derry, Eastlake, Derry and Associates LLC, 1-800-946-9471, adamarkd@aol.com

A consultant who reviews plans, provides project-specific advice, and conducts training on ADA issues.

Local Resources

Delaware Center for Transportation, www.ce.udel.edu/dct

Larry Klepner, 302-831-6241. DCT and the T² Center provide research and training related to transportation design and maintenance issues for government employees (federal, state and local).

DelDOT Bicycle and Pedestrian Coordinator, www.deldot.gov, Anthony Aglio, 302-760-2509

Information and assistance related to bicycle and pedestrian issues and the Pedestrian Action Plan (go to the project link and click on pedestrian plan), as well as programs such as Transportation Enhancements and Safe Routes to School.

Dover/Kent County MPO, www.doverkentmpo.org, 302-760-2713

WILMAPCO, www.wilmapco.org, 302-737-6205

Information and assistance with transportation-related issues.

Institute for Public Administration, www.ipa.udel.edu/localgovt

The College of Human Services, Education & Public Policy, University of Delaware. IPA provides training for local government staff (Doug Tuttle, 302-831-0718), and planning assistance for local governments (Martin Wollaston, 302-831-4930).

Office of State Planning Coordination, www.stateplanning.delaware.gov, 302-739-3090

Planning assistance, model municipal code, Livable Delaware Planning Grants, Infrastructure Planning Grants.

PennDOT's Agility Website

www.dot.state.pa.us/Internet/Bureaus/pdAgility.nsf/AgilityHomepage?OpenFrameset More information about PennDOT's Agility Program.

Publications

Institute for Public Administration. *Summary Report, Sidewalks and Shared-Use Paths: Safety, Security and Maintenance*, with podcasts of the 2007 and 2008 forums www.ipa.udel.edu/infrastructure/trails. This paper reviews the national literature related to best practices for designing, maintaining and managing pedestrian facilities to maximize safety and security, and minimize maintenance. The paper includes additional resources, as well as a summary of common causes of pedestrian accidents and design responses to address them.

Olka, Kristine, Robert Searns and Charles Flink. *Trails for the 21st Century: Planning, Design and Management Manuals for Multiuse Trails*. 2nd ed. Island Press: Washington, 2001. Good resource on designing, constructing, and managing shared-use paths. Includes a section on developing maintenance plans.

United States, Department of the Interior, National Park Service. *Handbook for Design, Construction and Maintenance*. August 1996. www.nps.gov/noco/parkmgmt/planning.htm. A useful source for trail maintenance standards and best practices.

Zelinka, Al, and Dean Brennan. *SafeScape: Creating Safer, More Livable Communities through Planning and Design*. Illinois: American Planning Association Planners Press, 2001. An excellent reference on designing and maintaining pedestrian facilities for security. Includes a section on conducting neighborhood safety audits.



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