

Great Lakes DBTAC
Teleconference
May 19, 2009

Public Rights-of-Way Accessibility

Lois Thibault
US Access Board



Who we are....


The Access Board is an independent **Federal** agency charged to develop accessibility **guidelines** under several laws. Our finished work includes guidelines for:


- buildings and facilities;
- transportation vehicles;
- telecommunications, and
- electronic and information technology.

Several new guidelines are in development.


The Access Board is the Federal government's **accessibility specialist**. Our mandate includes responsibility for:

- rulemaking (developing guidelines);
- technical assistance and training;
- research, and





EARLENE SESKER



SUNY/BUFFALO

What we do...



--enforcement of Federal facility accessibility.

Access Board accessibility **staff** -- there are 13 of us -- include architects as well as specialists in **transportation, recreation, historic preservation, and technology and communications**. Several are themselves people with disabilities.

Check our **website** for individual contacts:
www.access-board.gov/contact.htm

Big Cheese Marsha Mazz	Vessels Paul Beatty	Rec./Outdoor Peggy Greenwell	PROW Scott Windley	Transit/PROW Dennis Cannon
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In the works: new guidelines...

The Board's guidelines are **living documents**; new applications are always in development:

- public rights-of-way (Draft 2: 2005);
- passenger vessels (Draft 2: 2006), and
- outdoor recreation (NPRM: June 2007).

Transit vehicle guidelines are currently under revision for USDOT/FTA.

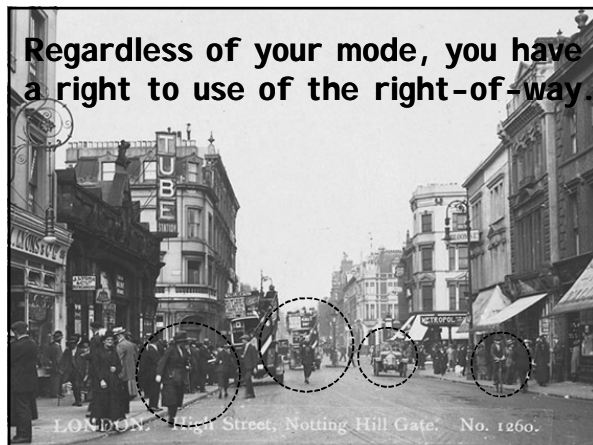


PROW ACCESSIBILITY

The public right-of-way is the network of common space reserved for community mobility.



Regardless of your mode, you have a right to use of the right-of-way.



A little PROW history...

1992 Proposed Rule for State/Local Government Facilities

- Section 11 Judicial, Legislative and Regulatory Facilities
- Section 12 Detention and Correctional Facilities
- Section 13 Residential Facilities
- Section 14 Public Rights-of-Way**

1994 Interim Final Rule

1998 Final Rule (sections 13 and 14 were reserved)

1994 Technical assistance and outreach

1999 Advisory Committee

2001 Committee report: 'Building a True Community'

2002 First **PROWAG** draft

PROWAG: Key issues in comment

Over **1400 comments** were received to the first PROWAG draft (June 2002):

- 300 came from the highway community;
- almost 800 were submitted by people identifying themselves as having **blindness or low vision**.

The **2005 draft** was published to document changes recommended in comment and to develop a **cost/benefit analysis**. No comments were sought.

Next steps...?

We are currently working with industry organizations to develop the required **cost/benefit assessment**:

- regulatory assessment (summer 2009)
- OMB review (fall 2009);
- NPRM (winter 2009/10);
- public comment (winter 2010);
- final rule (late 2010).

Frequently-asked questions:

- 1/What type of work will trigger the requirement to comply with the PROW?
- 2/Will audible pedestrian signals be required at every intersection?
- 3/At intersections that have pedestrian signals that display the remaining time before the light changes will that information need to be audible?
- 4/In hilly areas will the sidewalk be required to be at a 1/12 maximum slope?
- 5/Will all public sidewalks have to comply with the PROW, residential areas, or just public sidewalks that are part of an accessible route?
- 6/Do these guidelines establish a minimum amount of time to cross a street before the light changes based on the distance from curb to curb?
- 7/Will accessible on-street parking be required in the same numbers required in the ADA standards?
- 8/Are there exceptions for the minimum width of a sidewalk where existing conditions won't allow full compliance with the guidelines?
- 9/What is going on with detectable warnings in this rule?
- 10/What type of technical assistance materials are available on these guidelines to assist designers and public works folks?

ACCESSIBILITY REGULATION

Laws are passed by Congress. Three laws govern access in the public right-of-way:

- the Architectural Barriers Act of 1968 (**ABA**) EX: Federal lands, NHS
- the Rehabilitation Act of 1973 ('Rehab Act' or '**section 504**') EX: Federal-aid highway funding to States
- the Americans with Disabilities Act of 1990 (**ADA**) EX: State/local governments

Each law is implemented by **regulations** developed by an appropriate Federal agency to establish legal requirements under the law.

Laws → Regulations → Standards

Implementing **regulations**:

- establish/identify requirements;
- provide **standards for new construction and alterations**; and
- assign compliance and enforcement responsibilities.

It's the regulations -- not the standards -- that establish what's required.

Title II of the ADA is an **implementing regulation**. It has two parts: DOJ's Subtitle A (State/Local Governments) and DOT's Subtitle B (Transportation Facilities and Systems).

SUBTITLE A SUBTITLE B



ADA Title II/Subtitle A 28 CFR Part 35 (DOJ)

Subpart B – General Requirements

35.130 General prohibitions *against discrimination*.

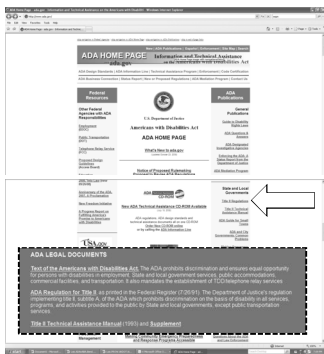
“No qualified individual with a disability shall, on the basis of disability, **be excluded from participation in or denied the benefits of** the services, programs, or activities of a public entity [...]”

ADA Title II/Subtitle B 49 CFR Part 37.5 (DOT)

Section 37.5 Nondiscrimination.

“No entity shall discriminate against an individual with a disability in connection with the provision of transportation service... Notwithstanding the provision of any special transportation service to individuals with disabilities, an entity shall not, on the basis of disability, deny to any individual with a disability **the opportunity to use** a transportation service for the general public, if the individual is capable of using that service.”

What's in Title II/Subtitle A?



Two parts:
--the 'preamble' or commentary; and
--the 'rule' or regulation.



Two design and construction standards are 'deemed to comply': UFAS (1984) and ADAAG (1991); **other methods'** are permitted.

Relevant Title II/A provisions

- 35.130 General prohibitions against discrimination
- 35.130(7) Modification in policies, practices, or procedures ('accommodation')
- 35.133 Maintenance of accessible features
- 35.150 Existing facilities (program accessibility)
- 35.150(d) Transition plan/Curb ramps
- 35.151 New construction and alterations**
- 35.151(c) Accessibility standards**
- 35.160(a) Effective communication

Regulations set the requirements: Four principal obligations:

1/New construction and alterations must be **accessible to and usable by people with disabilities** [35.151]; Cost is not a consideration. Ⓣ

2/Existing facilities and programs must achieve **'program accessibility'** [35.150]; Limit: undue burden (administrative or financial). Ⓣ

3/People with disabilities must be **accommodated** where reasonable and necessary for access [35.130(b)(7)]. Ⓣ

4/Steps must be taken to ensure **effective communications** [35.160] with people with disabilities. Ⓣ

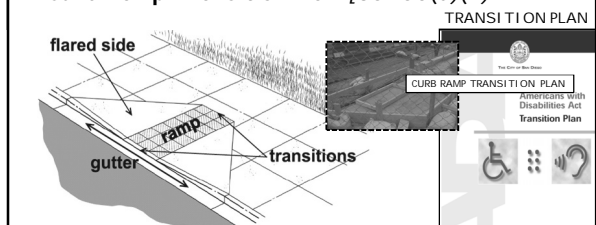
Program accessibility

Program accessibility is a broad concept first developed under section 504 of the Rehabilitation Act. It may have **policy, operational, design and construction, or other considerations.**



Other obligations...

Jurisdictions must **evaluate** their existing programs and facilities for discriminatory effects and identify and schedule remediation in a Transition Plan. That plan must include a **Curb Ramp Transition Plan [35.150(d)(2)]**.



Title II: Accommodations

35.130 General Prohibitions against Discrimination.

[...]
 (7) A public entity shall make reasonable **modifications** in policies, practices, or procedures when the modifications are necessary to avoid discrimination on the basis of disability, unless the public entity can demonstrate that making the modifications would fundamentally alter the nature of the service, program, or activity.

Example: Modification in policies...



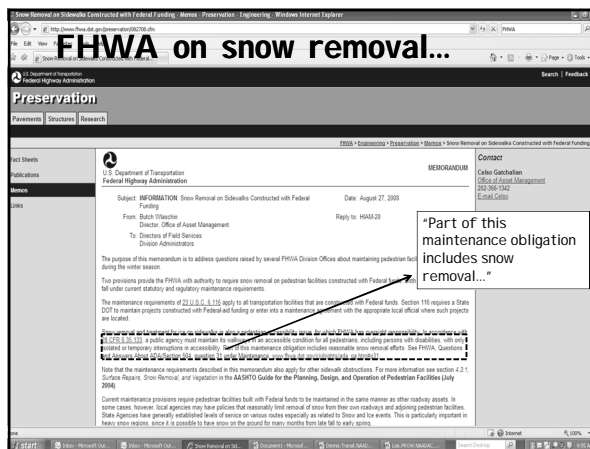
Title II: 'Maintenance' vs Maintain

35.133 Maintenance of accessible features.

"This section recognizes that it is not sufficient to provide features such as accessible routes [...] if those features are not **maintained** in a manner that enables persons with disabilities to use them [...]. This section does not prohibit isolated or temporary interruptions in service due to maintenance or repairs."

Maintenance of Accessible Features

SNOW?



Title II: Communications

Subpart E - Communications

35.160 General.

"A public entity shall take appropriate steps to ensure that **communications** with applicants, participants, and members of the public with disabilities are **as effective as communication with others.**"

3/At intersections that have pedestrian signals that display the remaining time before the light changes will that information need to be audible?

3

Title II: Communications

A jurisdiction's dealings with the public must be available to all. Highway agencies must make sure that people who have **sensory disabilities** can access the information they provide, have input to its decision-making, and understand the possible effects of agency proposals and projects.



Limits/Measures of compliance:

Newly-constructed facilities must achieve a 'high degree of **convenient** access'.

Altered facilities must be accessible to/usable by people with disabilities to the '**maximum extent feasible**'.

Programs, services, and benefits must be **available** to people with disabilities, but not all **existing facilities** need to be altered if other methods are effective in achieving program access.

Accommodations must be reasonable for both user and provider and are independent of the standards.

Title II: New construction

"35.151(a) Design and construction.

Each facility [...] constructed by, on behalf of, or for the use of a public entity shall be designed and constructed in such manner that the facility [...] is **readily accessible to and usable by** individuals with disabilities [...]."

1/What type of work will trigger the requirement to comply with the PROW?

1

New construction

"A HIGH DEGREE OF CONVENIENT ACCESS..."(DOJ)



Title II: Alterations

"35.151(b) Alteration.

Each facility [...] altered by, on behalf of, or for the use of a public entity shall, **to the maximum extent feasible**, be altered in such manner that the altered portion [...] is **readily accessible to and usable by** individuals with disabilities [...]."

8/Are there exceptions for the minimum width of a sidewalk where existing conditions won't allow full compliance with the guidelines?

8

Title II: Alterations

"35.151(e) Curb ramps.

Newly constructed or altered streets, roads, and highways must contain curb ramps [...] at any intersection having curbs or other barriers to entry from a [...] pedestrian walkway. Newly constructed or altered [...] pedestrian walkways must contain curb ramps [...] at intersections to streets, roads, or highways."

'Maximum extent feasible':

*"[...] applies to the **occasional** case where the nature of the existing facility makes it **virtually impossible** to comply fully with applicable accessibility standards through a planned alteration.*

*In these circumstances, the alteration shall provide the **maximum physical accessibility feasible**. Any altered features that can be made accessible shall be made accessible [...]"*

Alterations

*Changes that affect **usability** are defined as alterations. Alterations to **sidewalks and streets** must include **curb ramps** if there are pedestrian facilities [35.151(e)]*

REPAIR: NO RESURFACING: YES RECONSTRUCTION: YES



STANDARDS

Our focus today...

*We are going to focus more narrowly, on **standards for new construction and alterations** -- the principal Access Board mandate.*

*DOJ (and DOT) oversee **program access**, existing facility compliance, facility operation, and other provisions of the implementing regulations that prohibit discrimination.*

Title II Standards/Subtitle A

"35.151(c) Accessibility standards.

*Design, construction, or alteration of facilities in conformance with UFAS [1984] or with ADAAG [1991/1994] shall be **deemed to comply** with the requirements of this section [...].*

***Departures** from particular requirements [...] by the use of other methods shall be permitted when clearly evident that **equivalent access** [...] is provided."*

Title II Standards/Subtitle B

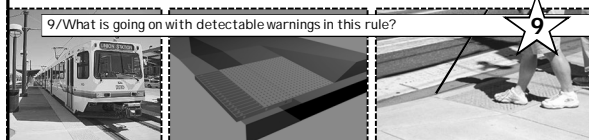
"37.9 Standards for accessible transportation facilities.

(a) For purposes of this part, a transportation facility shall be considered to be readily accessible to and usable by individuals with disabilities if it meets the requirements of this part and the requirements set forth in Appendices B and D to 36 CFR part 1191 [ADAAG 2004], which apply to buildings and facilities covered by the Americans with Disabilities Act, as modified by Appendix A to this part."

406.8 Detectable Warnings on Curb Ramps in Transportation Facilities

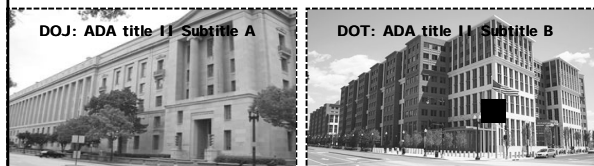
Added by DOT (adopted from previous ADAAG):

"A curb ramp shall have a detectable warning complying with 705. The detectable warning shall extend the full width of the curb ramp (exclusive of flared sides) and shall extend either the full depth of the curb ramp or 24 inches (610 mm) deep minimum measured from the back of the curb on the ramp surface."



Guidelines...? Standards...?

Although the Access Board is responsible for developing accessibility **guidelines**, other Federal agencies, as stipulated in the **laws**, must adopt or reference the guidelines to make them **enforceable standards**.

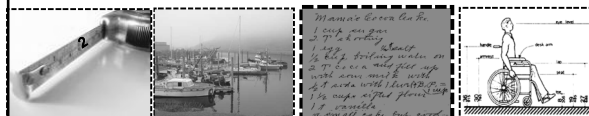


Measuring compliance...

It is the ADA **regulations** that require new construction, and -- to the maximum extent feasible -- alterations, to be 'accessible to/usable by people with disabilities'.

Standards are a **measure** of compliance with that requirement and a **safe harbor** for designers -- they are not themselves the 'requirements'. Think of them as a **recipe** for the accessibility that the regulations require.

No provision in the standard? Access is still required.



Accessibility standards are...

- a **'gold standard'** for new construction;
- a **'goal'** for alterations (meet new construction standards **'to the maximum extent feasible'**);
- a **'guiding idea'** for program access improvements to existing facilities not otherwise being altered, and
- not applicable to accommodations.

Design and construction standards

Subtitle A (DOJ) of Title II permits covered entities to use **ADAAG [1991]**, **UFAS [1984]** or **equivalents** as a measure of the required accessibility and a safe harbor for designers and jurisdictions;

Subtitle B (DOT) requires use of **ADAAG [2004]** for transportation facilities and includes an additional requirement for detectable warnings;

DOJ's regulation **designates DOT** to oversee transportation implementation [35.190(8)].

Using ADAAG in the PROW

Because the ADAAG standards adopted by DOJ (in 1991) and DOT (in 2005) do not yet include provisions specific to the public right-of-way, designers today must **adapt current building standards** in order to meet the law's requirements for accessibility.

Results?

- uncertainty;
- complaints and lawsuits;
- court orders to re-do new work.

But ADAAG isn't a good PROW fit:

ADAAG was developed for **buildings** and facilities on **sites**:


- one accessible route per site;
- slopes > 5% must be treated as ramps;
- no provisions for **signals and crossings**;
- 20% **path-of-travel** requirement;
- uses **architectural** rather than engineering 'language'.

How to remedy? Develop a **PROW-specific** standard.


ACCESSIBLE ROUTE ON SITE

How many...?

One route or many...?




PEDESTRIAN ACCESS ROUTES IN PROW



Which one...?

Sidewalk grade: **match roadway** or provide accessible route?


ADAAG PROWAG



How deep...?

Detectable warnings: full ramp length or just **2 feet deep**?

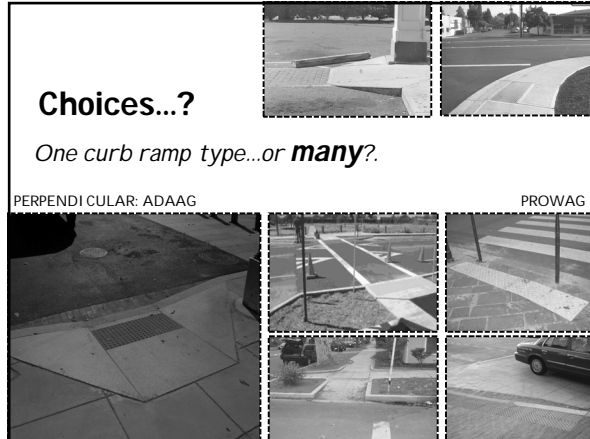
ADAAG PROWAG



Choices...?

One curb ramp type...or **many**?

PERPENDICULAR: ADAAG PROWAG



Thus PROWAG...

The Access Board began work on rights-of-way guidelines to supplement ADAAG in 1992:

- section 14 (IFR 1994);
- sidewalk video and design manual (1997);
- advisory committee (1999);
- PROWAAC report (2001);
- draft guidelines (2002);
- revised draft guidelines (Nov '05)

How is PROWAG different?

The PROWAG draft adapts ADAAG to the rights-of-way environment. The new guidelines are a stand-alone document using rights-of-way measures and language.

Key differences:

- all sidewalks must contain PAR;
- sidewalk slope may follow roadway;
- expanded curb ramp types;
- reduced DW area;
- no path-of-travel requirement;
- new signalling provisions, and
- new provisions for roundabout design.

5/Will all public sidewalks have to comply with the PROW or just public sidewalks that are part of an accessible route? Subdivisions?

5

2005 draft PROWAG

- R1 Application and Administration
- R2 Scoping Requirements
- R3 Technical Provisions
 - Pedestrian access route (PAR)
 - Alternate circulation path
 - Curb ramps and blended transitions
 - Detectable warning surfaces
 - Pedestrian crossings
 - Accessible pedestrian signals (APS)
 - Street furniture
 - On-street parking
- R4 Supplementary Technical Provisions (from ADA/ABA-AG)

Draft PROWAG

Key Provisions: A high degree of convenient access is easiest to achieve in new construction.



NEW CONSTRUCTION: THE 'CORN FIELD' IN KANSAS

Draft PROWAG

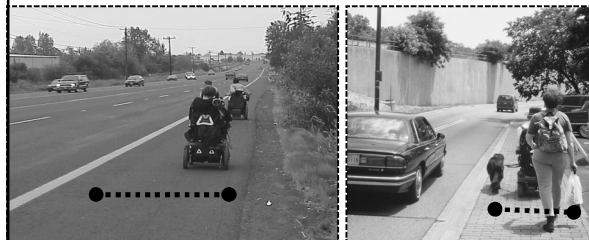
Key Provisions: In alterations, you may not be able to optimize conditions for every user (follow new construction guidelines to the maximum extent feasible; add curb ramps where needed)

RESURFACING RECONSTRUCTION



Draft PROWAG

Key Provisions: Provide a 4-ft-wide pedestrian access route (PAR) within every sidewalk, curb ramp and street crossing; provide a 5 ft passing space @ 200 ft intervals



Draft PROWAG

Key Provisions: The running slope of the PAR may **match** -- but not exceed -- that of the adjacent roadway.

OK... NOT!

4/1n hilly areas will the sidewalk be required to be at a 1/12 maximum slope? **4**

Draft PROWAG

Key Provisions: A PAR carried on structure must meet accessible route requirements.

NO... OK!

Draft PROWAG

Key Provisions: Limit PAR **cross slope** to a maximum of 2%, measured perpendicular to the PAR centerline.

NEW CONSTRUCTION ALTERATION

Draft PROWAG

Key Provisions: Where two directions of travel intersect at corners (or where a turn must be made), the PAR must be 'level' (<2% in both directions) or 'tabled'.

THIS... ...NOT THIS!

Draft PROWAG

Key Provisions: Provide accessible/detectable **alternate routes** when the PAR is detoured; same-side is best, if feasible...

Draft PROWAG

Key Provisions: Be mindful of **protruding objects** (4" max) across the whole width of the pedestrian walkway; elements above 27" and below 80" aren't detectable.

Draft PROWAG

Key Provisions: Provide a **curb ramp** (slope > 1:20) or a **blended transition** (slope < 1:20) for each crossing.

CURB RAMP BLENDED TRANSITION

The image contains two side-by-side photographs. The left photograph shows a 'CURB RAMP' where a sidewalk is raised above the street level with a distinct ramp. The right photograph shows a 'BLENDED TRANSITION' where the sidewalk surface is gradually lowered to meet the street level without a sharp edge.

Draft PROWAG

Key Provisions: Design top and bottom gradebreaks to be parallel (and **in-line** with travel direction, if possible).

The image contains a photograph on the left showing a sidewalk with a crosswalk and a cross-section diagram on the right. The diagram shows a sidewalk with a crosswalk that has a raised surface. The top and bottom edges of the raised surface are parallel to each other and in-line with the travel direction of the sidewalk.

Draft PROWAG

Key Provisions: Provide a **level turning space** at the top of a perpendicular ramp, at the bottom of a parallel ramp, and at all corners.

The image contains two side-by-side photographs. The left photograph shows a wheelchair user at the top of a ramp with a level turning space marked 'TS'. The right photograph shows a wheelchair user at the bottom of a ramp with a level turning space marked 'S'.

Draft PROWAG

Key Provisions: Combined ramps slope the sidewalk down in order to shorten the perpendicular run to the street; the turning space is at an intermediate level.

The image contains a cross-section diagram on the left and a photograph on the right. The diagram shows a sidewalk that slopes down from the street level to a lower level, then slopes up to a higher level. The turning space is located at the intermediate level. The photograph shows a wheelchair user at the turning space, which is marked 'TS'.

What's wrong with this picture?

If there's a landing at the top, you can take a run at a ramp, pushing with both arms. If you have to turn while climbing, you must brake with one hand, leaving only one arm for pushing.

INEFFICIENT, LOSES MOMENTUM ONE WHEEL OFF GROUND

The image contains two side-by-side photographs. The left photograph shows a wheelchair user at the top of a ramp with a landing, with an arrow pointing to the right. The right photograph shows a wheelchair user at the top of a ramp with a landing, with one wheel off the ground.

Draft PROWAG

Key Provisions: **Blended transitions** have a slope of **less than 5%**; because they are not ramps, they needn't have a perpendicular relationship with the street.

The image contains two side-by-side photographs. The left photograph shows a blended transition on a sidewalk. The right photograph shows a blended transition on a sidewalk with a wheelchair user.

Draft PROWAG

Key Provisions: Detectable warnings provide notification underfoot of the change from pedestrian to vehicular route

RETROFIT PORTLAND, OR DWs AT WHITE HOUSE

9/What is going on with detectable warnings in this rule? 9

Draft PROWAG

Key Provisions: Detectable warnings are particularly useful at medians. New technical specification requires only 24".

Q: Do driveways need DWs?

USUALLY NOT, UNLESS COMMERCIAL AND DESIGNED LIKE STREETS

NO...

Draft PROWAG

Key Provisions: Provide adequate time to cross (3.5 fps), measured curb-to-curb.

6/Do these guidelines establish a minimum amount of time to cross before the light changes based on the distance from curb to curb? 6

Draft PROWAG

Key Provisions: Include pedbutton-integrated APS where pedestrian signals are newly installed.

PRI SMATEK POLARA

2/Will audible pedestrian signals be required at every intersection? 2

Draft PROWAG

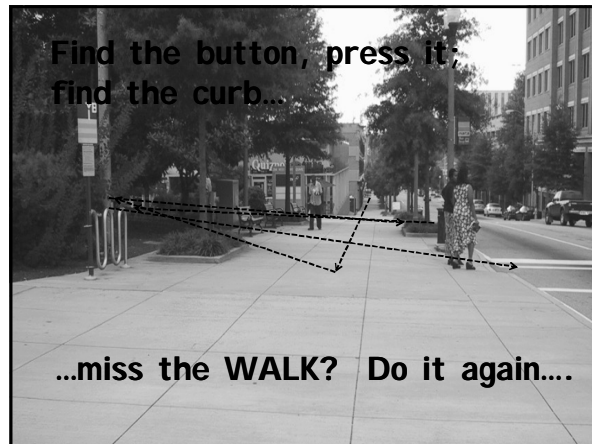
Key Provisions: Provide clear ground space at pedbuttons within maximum reach ranges (48" V, 10" H). This may require a stub pole.

STUB POLES



**Location,
location,
location...**

The APS must be within close range of the departure curb for the vibrotactile feature to work for users.



**Find the button, press it,
find the curb...**

...miss the WALK? Do it again...

Draft PROWAG

*Key Provisions: Provide pedestrian demand signals at **roundabouts** where pedestrian crossings are more than one lane.*



Pedestrian crossings: Roundabouts

*HAWK signals have been used in several cities to provide a pedestrian crossing opportunity on demand. The signal has been approved for the 2009 **MUTCD**, with a special provision for use at roundabouts -- dark unless activated.*

GOLDEN, CO

TUCSON, AZ



Draft PROWAG

*Key Provisions: **Separate** sidewalks from the curb to provide non-visual **wayfinding** cues to crossing locations.*

FENCED

SEPARATED



Draft PROWAG

*Key Provisions: **Street furniture** must be usable, but not in the way.*

KNEE ROOM



Draft PROWAG

Key Provisions: Accessible **on-street** spaces are scoped like parking lots, based upon total numbers provided on a block.

NARROW SW SI DEWALK WIDTH- 14 FT

7/Will accessible on-street parking be required in the same numbers required in the ADA standards?

Draft PROWAG

Key Provisions: Angled (or perpendicular) on-street parking can provide good VAN ACCESS

Draft PROWAG

Key Provisions: Facilities provided at bus stops must be accessible: sign, pad, shelters, benches... and a route to get to them (and by them!).

HELICOPTER 1 N?

Program access:

United States Department of Justice
CIVIL RIGHTS DIVISION

Letter 205

"If installation of a curb ramp or pedestrian walkway is necessary to ensure that individuals with disabilities have access to a particular State or local program, such as a school...the public entity may in some circumstances be required to install a ramp or walkway where none existed previously."

I am responding to your letter in total or your comment for assistance regarding the requirements of the Americans with Disabilities Act (ADA) for sidewalks at new highway construction projects. Please excuse my delay in responding.

Generally, the ADA does not require installation of pedestrian walkways in new construction projects where no such walkways are planned. When public entities build new facilities or alter existing facilities, the Department of Justice's regulations implementing Title II (enforced) requires that the newly constructed or altered areas be made accessible to individuals with disabilities. The regulation specifically provides that new construction of or alterations to streets give rise to accessibility obligations for curb ramps. 28 C.F.R. § 35.151(a). However, in State or local government work constructing a new street or intersection or new adding an existing street or intersection, it would be required to provide accessible curb ramps or ramps where pedestrian walkways that are elevated or curbed intersect with the new or altered street or intersection. 28 C.F.R. § 35.151(a)(1). In addition, if the State or local government were building or altering a pedestrian walkway, it would be required to provide curb ramps or ramps as needed where the walkway intersects streets or intersections. 28 C.F.R. § 35.151(a)(2).

In addition to the requirements for new construction and alterations, Title II of the ADA also requires public entities to ensure that existing programs, services, and activities are accessible to the maximum extent feasible to individuals with disabilities. 28 C.F.R. § 35.103. If installation of a curb ramp or of a pedestrian walkway is necessary to ensure that individuals with disabilities have access to a particular State or local program, such as a school, requirements to the extent applicable to non-structural elements. The public entity may, in some circumstances, be required to install a ramp or walkway where none existed previously.

Of course, the ADA does not prohibit State or local governments from exceeding the requirements of the ADA, nor does it limit their discretion to provide new pedestrian walkways and ramps as they see fit to serve interests in addition to accessibility.

I hope this information is helpful to you in responding to your constituent.

Case study: Bus stop costs

Cost of providing a bus stop and improving the pedestrian facilities to it:

- \$7,000 per stop (post and sign and minor fixing of sidewalks);
- \$58,000 per stop (for post, sign, lighted shelter, bench, trash can, trenching for electricity, and replacing/fixing portions of sidewalk).

[Cost assessment from the Maryland Transit Administration (MTA)]

Case study: Paratransit costs

Cost of providing paratransit to one person (estimate from MD-MTA):

- \$ 77 (per trip)
- \$ 770 (per work week)
- \$ 38,500 (per year assuming a 2 week vacation)

By improving a bus stop so that one paratransit rider can now use it, the transit agency recoups its costs for a basic improvement (\$7000) in slightly more than 2 months.

Rulemaking is a 2-step process:

The Access Board develops minimum guidelines:

- under the ADA, DOJ and DOT adopt enforceable standards **consistent with Board guidelines**
- under the ABA, DOD, GSA, HUD and USPS adopt enforceable standards
- Rehab Act/504 standards are set by individual agency rulemaking

Can I use the 2005 PROWAG now?

Yes! Title II of the ADA and regulations implementing the Rehabilitation Act ('504) require new construction to be 'accessible to and usable by people with disabilities'.

PROWAG is a well-vetted measure:

- title II admits 'other methods'
- FHWA memorandum (January 2006);
- DOJ policy letter (1993);
- better fit for the PROW.

Most agencies are already using some provisions (DWs, PAR, POT, CRs...), and several States have adopted.

Curb ramp design

Many intersection features can be manipulated to optimize the usability of curb ramps set into existing developed streetscapes.

- curb radius;
- sidewalk setback;
- curb height;
- ramp location/directionality;
- roadway surface;
- ramp edge conditions.

Here are some basic rules...

RESOURCES

10/What type of technical assistance materials are available on these guidelines to assist designers and public works folks?



Technical assistance from PROWAG:

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

**PLANNING AND DESIGN FOR ALTERATIONS:
WORK-AROUNDS FOR CONSTRAINED CIRCUMSTANCES AND LOCATIONS**

Other resources...

Other resources...

Other resources...

Other resources...

QUESTIONS...?

Contact us directly...

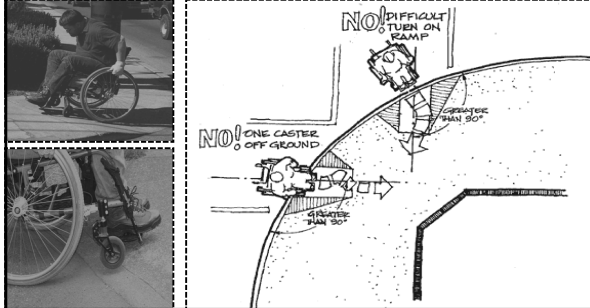
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Lois Thibault, Coordinator of Research 202/272-0023 (v) or thibault@access-board.gov

SCOTT

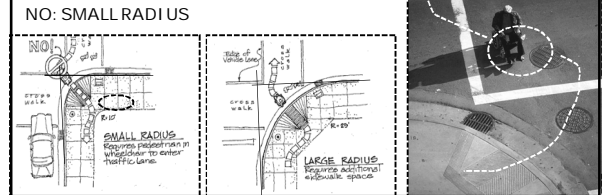
DENNIS, LOIS

KEY USABILITY FEATURES

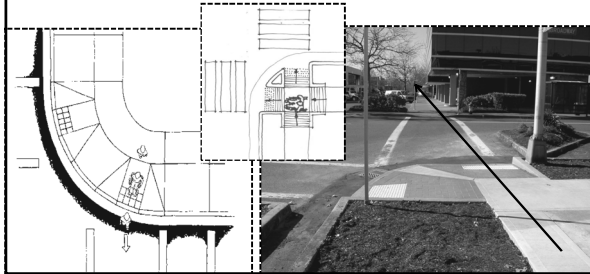
1/Top and bottom grade breaks on a curb ramp must be parallel.



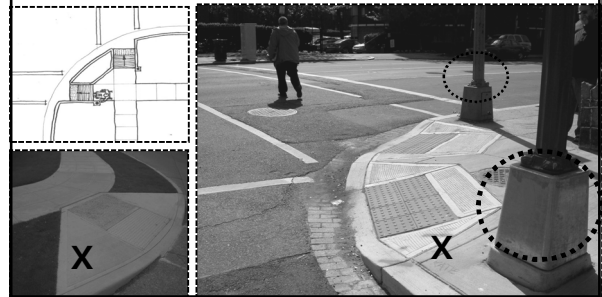
2/Where a turn must be made to access the crossing (or sidewalk), a 'level' turning space (2% B/W) must be provided. In the roadway, it must be out of parallel vehicle travel lanes.



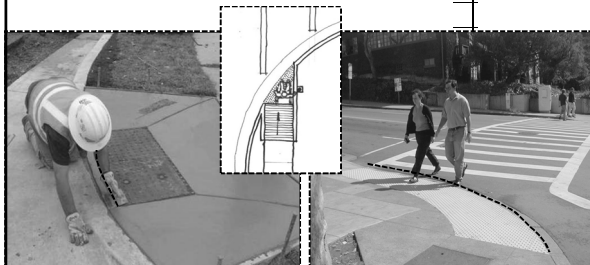
3/Perpendicular curb ramps may be skewed or in-line with crossing, but in-line ramps give better directional cues.



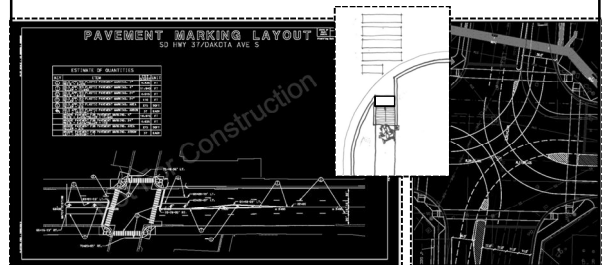
4/Flares are not required if ramp edges are shielded from cross traffic...



5/DWs mark the sidewalk/street boundary and should be installed along and at the back-of-curb as a 'sign' for the feet.



6/When DWs are installed on directional ramps ONLY, panels shall be perpendicular to the path of wheelchair travel.



Q: Where do DWs go?

GOOD JOB!

WHAT ABOUT THESE?

7/APS pedbuttons must be located close to the departure curb for hand contact, access from a wheelchair, and quiet operation.

MUTCD 2003

Two Curb-Cut Ramps

8/PAR surfaces should be planar, not warped.

SAN FRANCISCO

RECAP

Recap: Regulations/Standards...

- ✓ *new construction must be accessible to and usable by people with disabilities;*
- ✓ *ditto for alterations, to the maximum extent feasible;*
- ✓ *standards are a measure of the required accessibility; if no standards, research...*
- ✓ *existing facilities must achieve program access, requiring self-evaluation, transition planning, a curb ramp retrofit plan/schedule, and accommodation of individuals where barriers to use are encountered.*

Recap: Curb ramps...

- ✓ *wherever a walkway crosses a curb;*
- ✓ *rectangular in plan!*
- ✓ *1:12 maximum running slope;*
- ✓ *level landing at turns;*
- ✓ *CFS at foot within crosswalk markings;*
- ✓ *flush transitions (no lips);*
- ✓ *24" detectable warning at street edge.*

Recap: Sidewalks...

- ✓ wide enough for 2-way travel;
- ✓ containing 1.2 m PAR;
- ✓ 1:50 maximum cross slope in PAR;
- ✓ no protruding objects between .6–2.0 m;
- ✓ CFS at entrances, pushbuttons, and other pedestrian features (DF, telephones, kiosks, ATMs...)

Recap: Street crossings

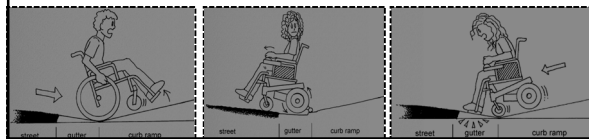
- ✓ ped signals w/non-visual information: APS
- ✓ adequate crossing time (3.5 fps or less);
- ✓ a curb ramp for each crossing;
- ✓ 'level' (2%) corners and crosswalks
- ✓ 5% maximum crowning in crosswalk

Recap: Temporary work

- ✓ maintain pedestrian usability;
- ✓ same-side alternate routes if feasible (extra crossings increase risk);
- ✓ consider audible signage;
- ✓ cane-detectable barricades; and
- ✓ temporary facilities are also covered (street fairs, block parties, farmers' markets...)

"Q: When a project contains existing sidewalk at **10%+ grade**, how practical is it to limit new curb ramps to ADA standards? "

It's the **gutter/ramp angle** that is key -- and it's critical to getting out of the street. PROWAG sets the sum of the gutter counterslope and the ramp slope at 13%; advocates prefer 11%.



"Q: Can we use **exposed aggregate** for the curb ramp surface?"

We'd rather you didn't...

When VDOT made exposed aggregate their standard for curb ramps (in lieu of detectable warnings) they found it to be very slippery when wet.

Research shows that textured surfaces adversely affect rollability, requiring extra pushing energy and triggering painful spasms in some wheelchair users who have spinal cord injuries.

BEST PRACTICES



Embrace SW setbacks!

www.pedestrians.org

Sidewalk Placement

What are the advantages of setting back the sidewalk with a planting strip?

Sidewalks can be built right at the edge of the street ... or sidewalks can be separated from the curb by a planting strip, that is just several feet of grass between the sidewalk and the street. What is the difference the green space can make?

We can think of more than a dozen benefits from planting strips. Click on any photo for a larger view.

- Increased pedestrian safety. Every now and then, a reckless driver will run up on the sidewalk. The extra separation makes that less likely.
- Increased pedestrian comfort. It is very uncomfortable for pedestrians to walk close to traffic. A green buffer makes a world of difference.
- Provide clearance from side mirrors. Side mirrors and overhanging cargo on large vehicles can stick over the curb. A setback keeps pedestrians beyond their reach.
- A place to plant trees. In the summer, pedestrians welcome the shade provided by a row of street trees. Trees also provide substantial environmental benefits.
- To provide a place to absorb runoff when it rains. The environmental impact of sidewalks is minimized when a wide grassy area separates sidewalks from the gutters.

Best Practices

Key Issues: Driveways

USABLE ROUTE ACROSS DRIVEWAY

OPTION H
TYPICAL SEPARATED SIDEWALK DRIVEWAY
(Use Options M or N below if slope requirements shown in Section A-A and General note 2 can't be met)

Best Practices

Key Issues: Driveways

RAMP SIDEWALK DOWN, IF NEEDED

OPTION M
PARTIALLY LOWERED SIDEWALK

Best Practices

Key Issues: Driveways

OR GO AROUND IT...

Use reversing curves for alternate transition (As Directed)

Best Practices

Key Issues: Accessible Entrances

SIDEWALK RAMP ELIMINATES STEP

SPLIT SIDEWALK CONTIGUOUS AT GRADE ON OTHER SIDE OF WALL

Best Practices
Key Issues: Accessible Entrances

NEW GRADING ELIMINATES STEP AND WOODEN RAMP

CHECK OUT NEW WORK TO LEFT...

Best Practices
Key Issues: Accessible Entrances

TWO STEPS REPLACED BY RAMP/STAIRS

WORK WITH GRADE

Best Practices
Key Issues: Obstructions in the PAR

Best Practices
Key Issues: Provide a level landing where turn is required

Best Practices
Key Issues: Consider Bulb-outs

ADDS LEVEL SIDEWALK SPACE FOR RAMP, SHORTENS CROSSING

Best Practices
Key Issues: Curb Ramp Directionality


RETURNED CURB GIVES GOOD CUE TO CROSSING DIRECTION

VANCOUVER, WA

Best Practices

Key Issues: Dry at toe...and less SW space needed, too

GUTTER PAN SLOPED TO EXTEND RAMP LENGTH, MEET STREET GRADE AT HIGHER POINT



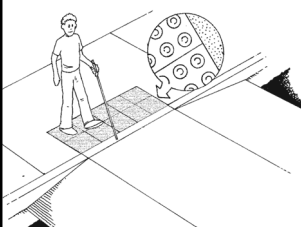

WASHINGTON, DC

Best Practices

Key Issues: Retrofit [Raised Crossing]

NO LANDINGS...

A GOOD SOLUTION FOR NARROW SIDEWALKS...

Best Practices

Key Issues: Raised Sidewalks

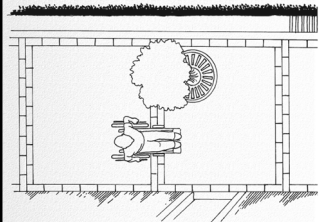

RAMP SERVING RAISED SIDEWALKS IN SILVER CITY, NM



Best Practices

Key Issues: Surfaces





USE TEXTURE SPARINGLY, AS DECORATION

Best Practices

Key Issues: Detours and Temporary Signage

AUDI BLE MESSAGE TRIGGERED BY PROXIMITY SWITCH







Best Practices

Key Issues: Pedestrian Crossings

FULL-WIDTH CURB RAMP, BARCELONA

GOOD DIRECTIONAL CUES, SHORTEST CROSSING DISTANCE



Best Practices

Key Issues: Pedestrian Pushbutton Locations

USING THE VIBROTACTILE FEATURE

Best Practices

Key Issues: On-street Parking

ACCESS AISLE CAN BE ON EITHER SIDE OF CAR

ROCKVILLE, MD

Best Practices

Key Issues: Temporary Curb Ramps

SAN FRANCISCO, CA

Best Practices

Key Issues: Temporary Routes

AUDIBLE DETECTABLE

Best Practices

Key Issues: Information at Intersections
[HAWK Signals at Roundabouts]

AU

For more information:

Regional DBTAC/IT Center: www.adata.org
800.949.4232

US Access Board: www.access-board.gov

Technical assistance: row@access-board.gov;
800.872.2253 (v); 800.993.2822 (tty)

Access Board Publications:

- accessible sidewalks design manual
- accessible sidewalks video on DVD
- synthesis on detectable warnings
- troubleshooting APS
- bulletin and research on roundabout accessibility
- research on contrast in detectable warnings