

Accessible Features in the Public Right of Way



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Learning Objectives

- Title II Obligations and Access in the Public Right of Way
- Accessible Routes vs Pedestrian Access Routes
- Effective Communications and Accessible Pedestrian Signals
- Scoping and Design for On-street Parking
- Scoping and Design for Transit/Bus Stops

Notes: Except for the statutes and regulations cited, the contents of this presentation do not have the force and effect of law and are not meant to bind the public in any way. The presentation is intended only to provide information and clarity regarding existing requirements under the law and agency policies.

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Federal Civil Rights Laws

- 1973 Rehabilitation Act, Section 504
 - Applies to programs and activities receiving Federal funds
 - Prohibits discrimination in programs and activities receiving Federal funds
 - Enforced by DOT/FHWA - Complaints
- 1990 Americans with Disabilities Act
 - Title II applies to State and Local Governments
 - Prohibits discrimination in the provision of facilities, services, and programs
 - Transportation accessibility enforced by DOJ/DOT – Complaints and Project Civic Access

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ADA Title II

- ADA Title II prohibits discrimination against people with disabilities in all State and Local Government programs, services and activities. 28 CFR 35.130.

How to determine what is accessible in the public right of way??!



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Obligation for Access in the Public Right of Way

- Regulation 28 CFR 35.151(i) requires newly constructed or altered curb ramps to comply with 2010 ADA Standards
- Flexibility in design for areas not covered

What to do in the public right of way??!



American Association of State Highway and Transportation Officials (AASHTO) guidance -

- Highways and Streets
- Pedestrian Facility Design
- Bicycle Facility Design

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Proposed Public Right of Way Accessibility Guidelines (proposed PROWAG)

- US Access Board issued PROWAG NPRM in 2011; SNPRM added shared use paths in 2013.
- No final rule issued yet
- Proposed PROWAG not enforceable standards until finalized by Board and adopted into regulation by DOT/DOJ



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What Can State and Local Agencies Do in the Meantime?

- Review Policies
- Review Standards
- Education
- Enforcement at local level



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Obligations for Access

- **New construction** is required to be accessible (to extent not structurally impracticable) 28 CFR 35.151(a)
- **Alterations** to existing facilities must be accessible to the maximum extent feasible within the scope of the project. 28 CFR 35.151(b)



Photo from the Access Board

- **Existing facilities** that have not been altered can not deny program access to persons with disabilities. 28 CFR 35.150

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New Construction



Aerial from Google Map

Accessibility is easiest to achieve in new construction.

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Alterations

- In alterations, it may not be possible to fully meet all of the accessibility requirements.
- Follow accessibility requirements to the maximum extent feasible..... within the scope of the project. 28 CFR 35.151(b)



Photo from the Access Board

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Document decisions!

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Existing Facilities



- **Cannot deny access** (28 CFR 35.150)
- **Title II - Self-evaluation** (28 CFR 35.105) (applies to all public entities)
- **Transition Plan** (28 CFR 35.150(d)) (applies only to entities with 50 or more employees)

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Questions?



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Pedestrian Access Routes

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Sidewalks - Who needs them?



Photos from the Access Board



If sidewalks are provided, then they are required to be accessible to and usable by a person with a disability. 28 CFR 35.149-150.

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What's Required?

- The ADA does not require public entities to construct sidewalks (Pedestrian Access Routes (PAR))
- **If** sidewalks are provided, then they are required to be accessible to and usable by a person with a disability. 28 CFR 35.149-150

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What does “accessible to and usable by” mean?

- Where enforceable standards exist, compliance with standards is required. See, e.g., 28 CFR 35.150(c) (reference to UFAS, 1991 ADA Standards, 2010 ADA Standards) (Note: structural impracticability, maximum extent feasible exceptions)
- Where enforceable standards do not exist, compliance is less clear, but provided services must still meet the general “accessible to and usable by” provision of rules (28 CFR 35.150 (a), 35.151(a))

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Where No Enforceable Standards Exist

- Public entities have some degree of flexibility
- Available references include (non-binding)
 - 2010 ADA Standards for buildings/sites
 - 2011 proposed PROWAG
 - 1991 ADA Standards for buildings/sites
 - UFAS
 - Potentially others
- Lack of federally enforceable standards does not prohibit State/local adoption of its own standards in PROW (e.g., some entities have adopted proposed PROWAG)

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What Does the Proposed PROWAG Provide?

- Figures cited going forward in presentation taken from proposed PROWAG, or the 2010 ADA Standards as noted.
- The Proposed PROWAG does not include federally enforceable standards until finalized by Access Board and adopted by DOJ/DOT

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Types of Pedestrian Facilities Pedestrian Access Routes



Sidewalks
(typically
pedestrians only)



Shared-use Paths
(peds and bikes)



Shoulders

Photos from the Access Board

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Design Basics

(proposed PROWAG – not enforceable standards)

- **Surface** - firm, stable and slip resistant;
- **Width** – 48" min. or full width of a shared use path
- **Running slope** – ≤ road grade w/in ROW, or 5% max. outside of ROW
- **Cross slope** – 2% max.
- **Level change max.** – ¼" vertical or ½" beveled;
- **No protruding objects** within circulation path;
- **Clear and maneuvering space** at doorways and operable parts

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Clear Width

(proposed PROWAG – not enforceable standards)



Photos from the Access Board



- 48" min pedestrian access route (PAR)
- 60" passing space max of 200' if less 60" wide

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Shared Use Path Width

(proposed PROWAG – not enforceable standards)



Photos from the Access Board

Width determined by use and not accessibility
Full width should be accessible

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Continuous Clear Width

(proposed PROWAG – not enforceable standards)



48" min clear width should continue around all obstructions

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Continuous clear width provided?

Photos from the Access Board

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Running Slope (Grade)

(proposed PROWAG – not enforceable standards)

- The running slope of the PAR may match - but should not exceed - that of the adjacent roadway.



Photo from the Access Board

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Running Slope (SNPRM)

(proposed PROWAG – not enforceable standards)

R302.5.1 Within Street or Highway Right-of-Way - The grade shall not exceed the general grade of the adjacent street or highway.

R302.5.2 Not Within Street or Highway Right-of-Way - The grade of pedestrian access routes shall be 5 percent maximum.

R302.5.3 Street Crossings - The grade of pedestrian access routes shall be 5 percent maximum.

R302.5.4 Physical Constraints - Where compliance is not practicable due to existing terrain or infrastructure, right-of-way availability, a notable natural feature, or similar existing physical constraints, compliance is required to the extent practicable.

R302.5.5 Regulatory Constraints - Where compliance is precluded by federal, state, or local laws where the purpose is to preserve threatened or endangered species; the environment; or archaeological, cultural, historical, or significant natural features, compliance is required to the extent practicable.

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Running Slope



Photo from the Access Board

If 2010 ADA Standard slope is applied...

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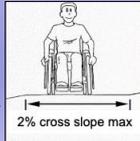
27

Cross Slope

- 0% best for wheelchair users
- Some slope needed for drainage
- Max cross slope 2% (proposed PROWAG – not enforceable standard)
 - Exceptions for street crossings



Photo from the Access Board



Graphic from FHWA - Designing Sidewalks and Trails for Access

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Cross Slope at Driveways



Photos from the Access Board

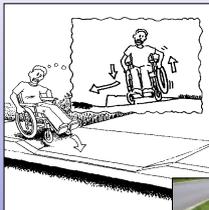


Pedestrian design is not an after thought

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Compound Slopes



Graphic from FHWA - Designing Sidewalks and Trails for Access

Compound slopes –
running and cross
slopes combined



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Construction Tolerance

- Construction tolerances?
- Rounding?
2, 2.0, 2.0000?
- Method of measure?
smart level, elevations?



Photos from the Access Board

Factor construction tolerance into design work

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Surfaces

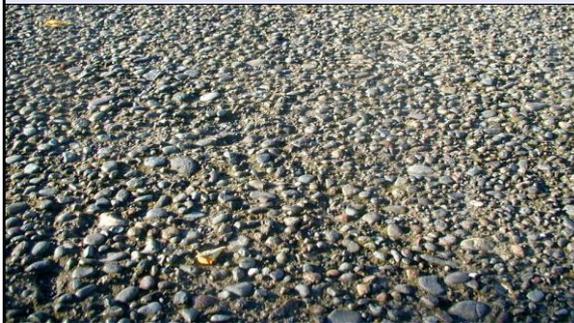


Photo from the Access Board

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Surface Basics

Surfaces should:

- Be firm, stable, and slip-resistant
- Have no large openings or gaps
- Have minimal vertical discontinuities



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Surface Textures



Photos from the Access Board

Properly installed, and well maintained bricks and pavers can work. Beveled edges are a problem for roll ability.

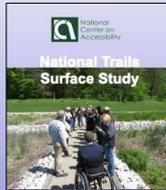
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Surfaces Shared Use Paths and Trails



Photos from the Access Board



Loose surface materials:

- Generally need special treatment (e.g., binders, consolidants, compaction, and grid forms)
- Frequent maintenance

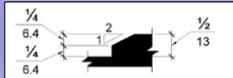
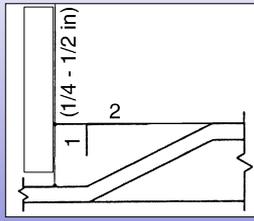
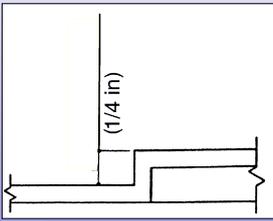
NCA's website - <http://www.ncaonline.org/>

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Surface Discontinuity

(proposed PROWAG – not enforceable standards)



Graphics from the proposed PROWAG and 2010 ADA Standards

* Grade breaks should be flush

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Grates and Openings

(proposed PROWAG – not enforceable standards)



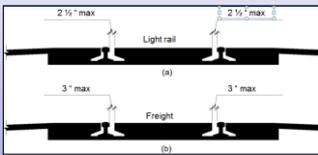
No more than 1/2 inch opening in the direction of travel.

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Flange Way Gap

(proposed PROWAG – not enforceable standards)



Graphic from the proposed PROWAG



Flange way gap provision for light rail and freight rail at pedestrian rail grade crossing

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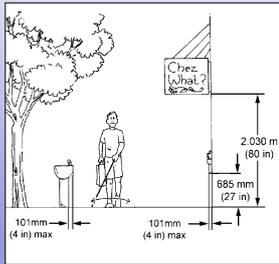
Circulation Path



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What is the Circulation Path? (proposed PROWAG – not enforceable standards)



Graphic from FHWA – Designing Sidewalks and Trails for Access

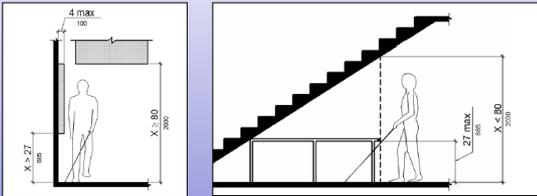
Protruding Objects

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Protruding Objects

(proposed PROWAG – not enforceable standards)



Graphics from the proposed PROWAG

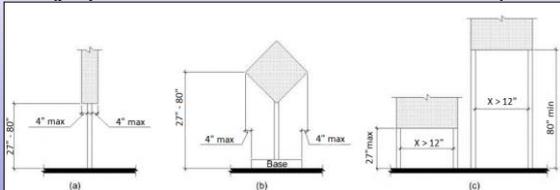
Objects between 27" and 80" may not protrude more than 4".
Entire circulation path!

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Pole Mounted Protruding Objects

(proposed PROWAG – not enforceable standards)



Graphic from the proposed PROWAG

- Objects between 27" and 80" may not protrude more than 4"
- Post mounted objects must not protrude more than 4" beyond the base
- Space greater than 12" between posts must be detectable

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Ouch!

Should have no protruding objects within entire width of the pedestrian circulation route

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Ramps

(proposed PROWAG – not enforceable standards)

- Slope: 1:12 max (8%)
- Cross slope: 2% max
- Clear width: 36" min
- Rise: 30" max
- Level landings
- Handrails (both sides)
- Edge protection

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Questions?

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Curb Ramps

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Curb Ramps - What's Required?

- **Must comply with the 2010 ADA Standards at 28 CFR 35.151(i)**, which provide that when a sidewalk intersects a roadway a curb ramp is required.
- Detectable Warnings are required on PAR, but not AR (building sites). (DOT Regs. 49 CFR 27.3, recipients of federal aid)
- Important to understand that:
 - The 'cookie cutter' curb ramp will not fit all.
 - Some engineering required at most corners.

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Curb Ramp for each Street Crossing

(proposed PROWAG – not enforceable standards)



Photos from the Access Board

Two ramps per corner (scoping in the proposed PROWAG)

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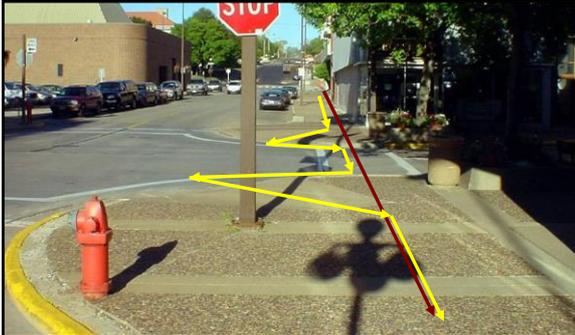


Photo from the Access Board
 Two curb ramps per corner where feasible
 (proposed PROWAG – not enforceable standard) 49

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What is a crosswalk?

Aerial from Google Maps
 Crosswalk is the extension of a sidewalk across the street, or where marked (FHWA, Manual on Uniform Traffic Control Devices (MUTCD), 2009 Ed. (with Rev. 1 & 2, May 2012), Section 1A.13) (23 CFR Part 655) 50

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Curb Ramp Basics

(2010 ADA Standards apply)

- Detectable warnings – PAR (federal aid recipients, 49 CFR 27.3, 504 reg) vs **AR**
- 1:12 max. running slope;
- 1:48 max. cross slope;
- Width – 3' min.;
- Landings at top of curb ramp;
- Clear space at the bottom outside of travel lane at diagonal curb ramps;
- Flush transitions (no lips)

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Detectable Warnings??

- All curb ramps at street crossings in the public right of way should have detectable warnings to provide notice underfoot of the change from a pedestrian to a vehicular route. DWs are required at curb ramps at street crossings for recipients of federal assistance from DOT (49 CFR 27.3)



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Detectable Warnings

- DOT Standards (49 CFR 27.3) and 2010 ADA Standards (28 CFR 35.151) require them at rail platform where the edge is not protected.



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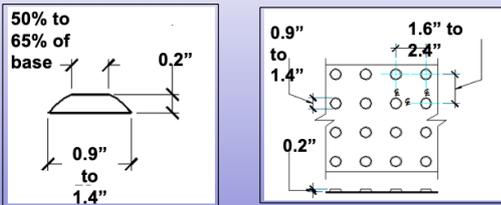
Detectable Warnings (49 CFR 27.3-DOT aid recipients)

- Provide warning to the visually impaired that they are about to enter a vehicular area.
- Raised domes with in-line or radial arrangement
- 24" min. in the direction of travel and full width of curb opening
- Contrasting in color



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Detectable Warning Dimensions



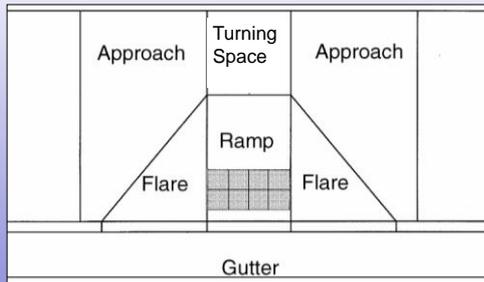
Graphics from the proposed PROWAG

Due to their distinctive design, truncated domes are detectable by cane and underfoot

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Anatomy of a Curb Ramp



Graphic from the Access Board

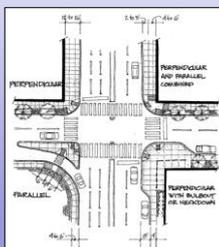
The 'cookie cutter' curb ramp

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Reality of Curb Ramps

Curb ramps require design work

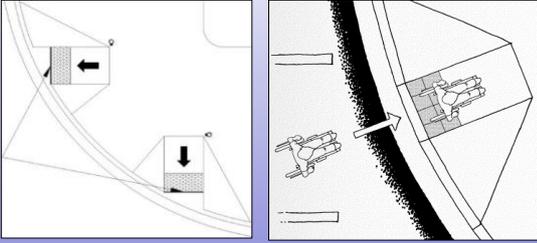


Graphic from the Access Board's Accessible Public Rights-of-Way: Planning and Designing for Alterations

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Perpendicular Curb Ramps



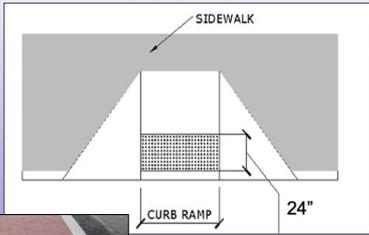
Graphics from the proposed PROWAG

Perpendicular to the curb or street

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Detectable Warning Location



Graphic from the proposed PROWAG

DW is placed at back of curb or at grade break (49 CFR 27.3)

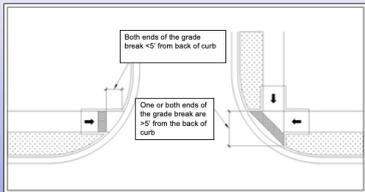


Photo from the Access Board

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Detectable Warning Locations



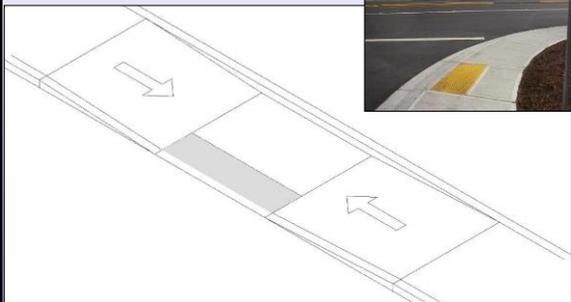
Graphic from the proposed PROWAG

- Place DW on curb ramp at grade break if space at bottom of ramp is less than 5' from the back of the curb (from proposed PROWAG-not enforceable standard, but good practice)
- Place DW on transition behind the back of the curb if space is more than 5' deep at any point (from proposed PROWAG-not enforceable standard, but good practice)

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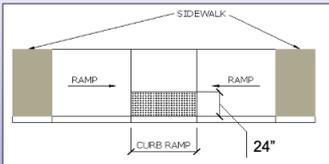
Parallel Curb Ramps



Graphic from the proposed PROWAG
Parallel to the curb or street
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Detectable Warning Location



DW placement on parallel curb ramp (proposed PROWAG-not enforceable standard)

Graphics from the Access Board

Place at back of curb on the landing



Photo from the Access Board

Combination Curb Ramps

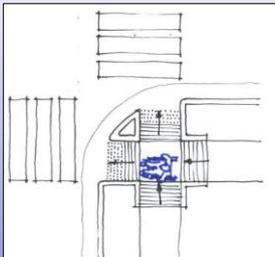


Photo from the Access Board

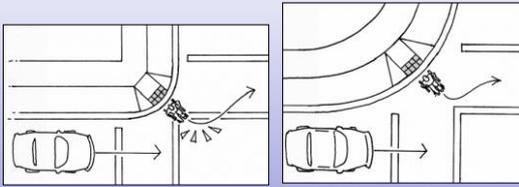
Graphic from the Access Board's Accessible Public Rights-of-Way: Planning and Designing for Alterations

Combination ramps slope the sidewalk down and can shorten the perpendicular run to the street

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Diagonal Curb Ramps



Graphics from the Access Board's Accessible Public Rights-of-Way: Planning and Designing for Alterations

- Diagonal/Apex can cause conflicts
- Permitted under 2010 ADA Standards (406.6)
- Proposed PROWAG allows use only if physical constraints prevent installation of two ramps

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Diagonal Curb Ramps – (2010 Standards)

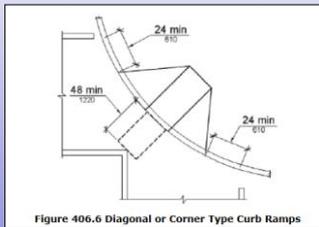


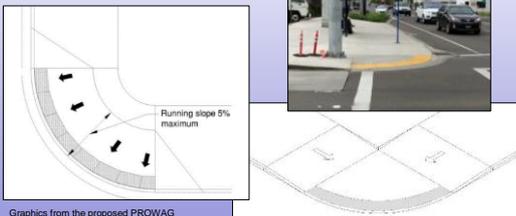
Figure 406.6 Diagonal or Corner Type Curb Ramps
Graphic from 2010 ADA Standards

48" min. clear space required at bottom of ramp outside of active traffic lanes

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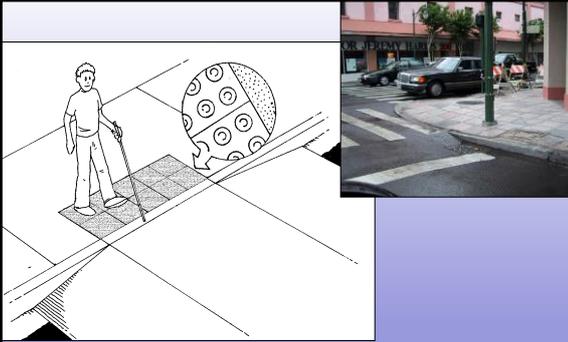
Blended Transitions



Graphics from the proposed PROWAG

Blended Transition (depressed corner)
Not addressed in 2010 ADA Standards
Included in proposed PROWAG (not enforceable standard)

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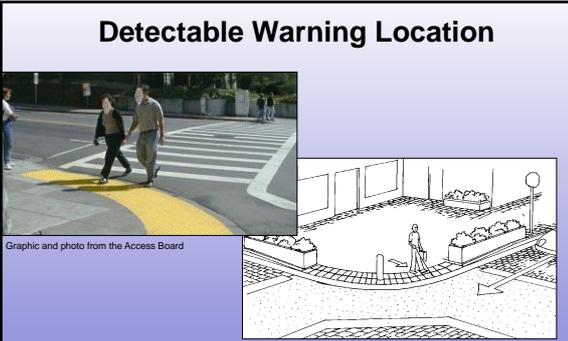
Graphic and photo from the Access Board

Blended Transition (raised crossing)

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Detectable Warning Location



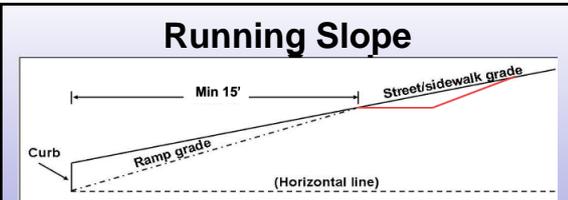
Graphic and photo from the Access Board

DWs should cover the entire flush edge
(proposed PROWAG-not enforceable standard)

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Running Slope



Graphic from the proposed PROWAG

- Maximum curb ramp slope 1:12 (2010 ADA Standards)
- Consistent slope
- When 'chasing grade' length of the ramp is not required to exceed 15 feet and the slope may be > 8.3% – (proposed PROWAG)

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Cross Slope



Photo from PennDOT

- 1:48 max (2010 ADA Standards)
- 2% max, but can equal grade of road (5% max) at crossings without yield or stop control (proposed PROWAG-not enforceable standard)

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Curb Ramp Clear Width



Photo from the Access Board

- Curb ramp must be 3-ft wide minimum (2010 ADA Standards; 4 ft min in proposed PROWAG-not enforceable standard) and within the crosswalk at marked crossings.
- Curb ramp must extend full width of a shared use path (proposed PROWAG-not enforceable standard).

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Turning Space



Photos from the Access Board

ADA Standards require landings at top of curb ramps (406.4)
(Turning space at top and bottom of curb ramps under proposed PROWAG-not enforceable standard)

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Turning Space Locations



Photos from the Access Board

- ADA Standards require landings at top of curb ramps (406.4)
- Level turning space at the bottom of a parallel ramp (proposed PROWAG-not enforceable standard)

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Perpendicular Grade Breaks



Photos from the Access Board

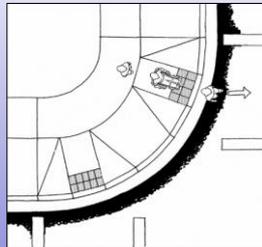
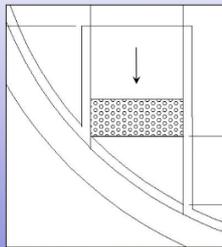
Transitions from curb ramps to walks, street must be at same level (flush) (406.2)

(Perpendicular grade breaks in proposed PROWAG-not enforceable standard)

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Perpendicular Grade Break



Graphics from the Access Board's Accessible Public Rights-of-Way: Planning and Designing for Alterations

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Counter Slope

Graphics from FHWA - Designing Sidewalks and Trails for Access

5% max. (ADA Standards 406.2)
 - Algebraic difference of the ramp or landing slope and the street crossing grade

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Counter Slope – No Lip

Graphic from FHWA - Designing Sidewalks and Trails for Access

Transition must be flush at all grade breaks (ADA Standards 406.2)

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Refuge Islands

Photo from the Access Board

5-foot minimum width
 (proposed PROWAG-not enforceable standard)
 Median vs Refuge Island - crossing distance

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Detectable Warning Devices



Photo from the Access Board

Pedestrian refuge islands greater than 6 ft. - DWs placed at the curb (proposed PROWAG-not enforceable standard)

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Refuge Islands – Usable?



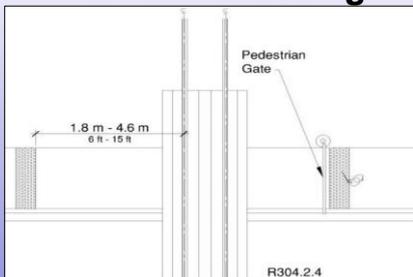
Photo from the Access Board

Turning Space?

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Railroad Crossing



Graphic from the proposed PROWAG

Detectable warnings at pedestrian/rail crossings: 6-15 ft from the near rail, but always outside a gate (proposed PROWAG-not enforceable standard)

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Street Crossings



Photo from the Access Board



Photo from Google Maps



Photo from the Access Board

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Street Crossing Basics

(proposed PROWAG-not enforceable standard)

- 5% max running slope, or street crown;
- 2% max cross slope on curb ramps and crosswalks, exception for some intersections;
- Pedestrian walk indicators with non-visual information provided (Accessible Pedestrian Signal);
- Adequate crossing time (3.5 ft/sec);
- Multi-lane roundabouts need some type of pedestrian demand signalization.

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Crossings



Photos from the Access Board



- Engineering judgement or local policy determines when to mark (MUTCD)
- Or how to mark (meet MUTCD requirements)

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Detectable Crossings



- Prohibited crossings happen...
- Prohibit for ALL pedestrians (28 CFR 35.130)

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Crossing Running Slope



Photo from the Access Board

Running slope of crosswalk is 5% max
(proposed PROWAG-not enforceable standard)

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Separated Crossings



Photo from the Access Board

Running slope –
5% max (proposed
PROWAG – not
enforceable standard)

Pedestrian Overpasses and Underpasses

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Pedestrian Crossings



Photo from the Access Board

Crosswalk cross slope

(proposed PROWAG-not enforceable standards)

- 2% max. for pedestrian access routes
- 5% max. in a street crossing without stop or yield control

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Crossing Time



Photos from the Access Board

WALKING SPEED AN ISSUE



START-UP TIME AN ISSUE

- 3.5 fps from top of curb ramp to opposite curb
- The proposed PROWAG references MUTCD

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Crossing Length



Photo from the Access Board



Photo from the Access Board



Shorten the crossing with bump outs and islands

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Temporary Routes



Photo from the Access Board

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Temporary Route Basics (Work Zones)

- Proposed PROWAG references MUTCD
- Maintain pedestrian usability;
- Same-side alternate routes if feasible (extra crossings increase risk);
- Cane-detectable barricades and channelizers;
- Temporary facilities are also covered (street fairs, block parties, farmer's markets...)

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Temporary Traffic Control



Photo from the Access Board

Yellow tape stops anything... right?

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Temporary Traffic Control Devices



Photo from the Access Board

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Temporary Curb Ramps



Photos from the Access Board

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Pedestrian Signals & Pushbuttons



Photos from the Access Board

Usable information about crossings

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Effective Communication

28 CFR §35.160 General. (shortened)

(a)(1) A public entity shall take appropriate steps to ensure that communications [with members of the public] with disabilities are as effective as communications with others.

(b)(1) A public entity shall furnish appropriate auxiliary aids and services where necessary to afford individuals with disabilities . . . an equal opportunity to participate in, and enjoy the benefits of, a service, program, or activity of a public entity.

- No standard yet in place to implement and enforce this regulatory provision, but the requirement exists.

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Pedestrian Pushbuttons

Should: (MUTCD, Section 4E.08, guidance statement)

Buttons

- Face of button parallel to crosswalk
- Mounted at 48" max
- Max 5 lbs. pressure needed to activate
- Clear space needed

Sign

- Adjacent to button – explains purpose and use
- Must clearly indicate crosswalk direction



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Where's the Pushbutton?

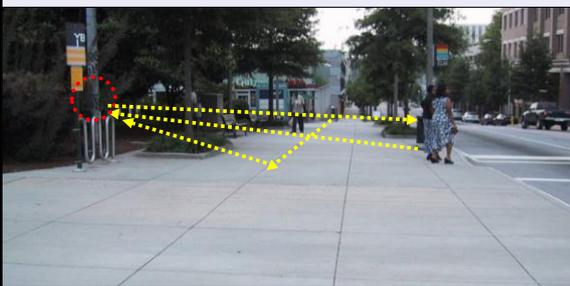


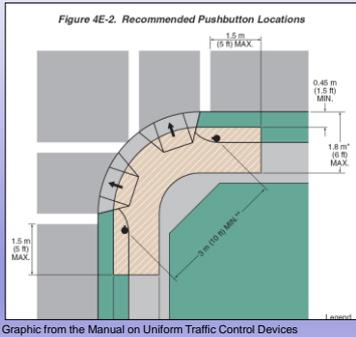
Photo from the Access Board

- Find the pushbutton. Now line up to cross.
- Missed your chance? Do it again

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Pushbutton Location



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Reach Ranges

(reference to ADAAG in MUTCD, Section 4E.08)

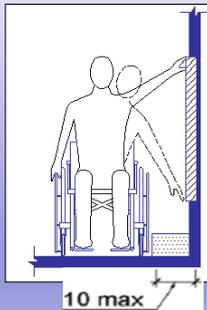
Should be:

Vertical

- Reach height – 15" - 48"
(forward & side reach)

Horizontal

- Side reach within 10"
- Forward reach – no obstruction or space



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Pushbutton Size



Photos from the Access Board

Should be usable with a closed fist (ADAAG, Section 309)

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Pedestrian Pushbutton Access?



Photos from the Access Board

Should be connected by a pedestrian access route
(proposed PROWAG, R403, R404-not enforceable standard)

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Accessible Pedestrian Signals

Communication Features

- Locator tone
- Audible and vibro-tactile detectors required
- Tactile arrow indicates direction
- 10 ft. separation, or speech indication
- Volume adjusts for ambient noise
- Speech walk criteria MUTCD 4E.11
- Extended Press Features



Photo from the Access Board

MUTCD 4E.08-4E.13

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Pushbutton Orientation



Face of pushbutton should be parallel to the crosswalk
(MUTCD, Section 4E.08)

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Accessible Pedestrian Signal



Photos from the Access Board

Locator tone then walk indication
Helps locate pushbutton and crossing

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Alterations and Project Scope

What's required??

- APS → curb ramp?
- Curb ramp → APS?
- Curb ramp → receiving curb ramp?
- APS on one crossing → full intersection?



Depends on project scope!



Photos from the Access Board



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Questions?



Photo from the Access Board

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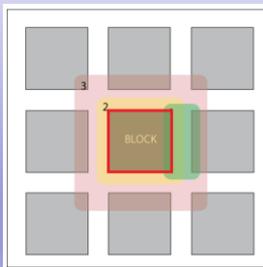
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On-Street Parking (Proposed PROWAG)

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On-Street Parking proposed PROWAG Scoping (not an enforceable standard)



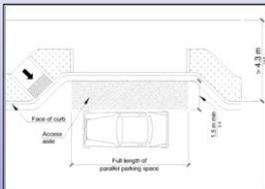
Graphic from the proposed PROWAG

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- Number of accessible spaces is based on total marked or metered spaces on a block perimeter
- Scoping Section R214

On-Street Parking – Wide ROW



Graphic and photo from the Access Board



Where the width of the adjacent sidewalk or available right-of-way exceeds 14 ft. should provide an access aisle (proposed PROWAG-not enforceable standard)

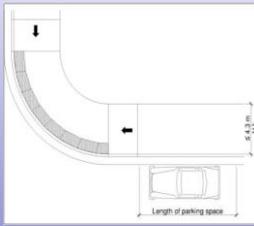
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On-Street Parking – Narrow ROW



Graphic and photo from the Access Board



Narrow sidewalks – an access aisle is not required
(proposed PROWAG-not enforceable standard)

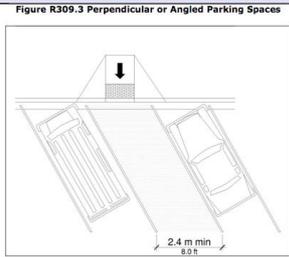
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On-Street Parking - Angled



Graphic and photo from the Access Board



Angled (or perpendicular) on-street parking
(proposed PROWAG-not enforceable standard)

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Parking Meter Displays and Information (proposed PROWAG-not enforceable standard)



Photo from the Access Board

- Information must be visible from a point 3.3 ft. max above the center of the clear space
- Operable parts requirements must be met

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Thoughtful Design



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Transit

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Transportation Facilities

- Bus Boarding and Alighting Areas (810.2)
- Bus Shelters (810.3)
- Bus Signs (810.4)



Photos from the Access Board



US DOT 2006 ADA Standards for Transportation Facilities

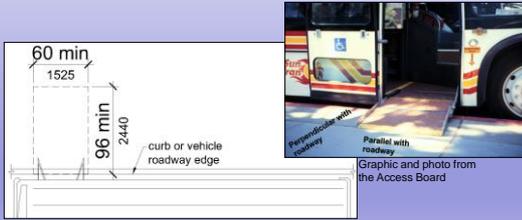
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Bus Boarding and Alighting Areas

(DOT ADA Standards (49 CFR Parts 27, 37))

- Clear space: 96"x60"
- Perpendicular to road - 2% max slope;
- Parallel to the road can match grade of road



Section 810.2

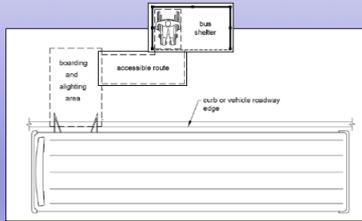
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Clear Space and Access

(DOT ADA Standards (49 CFR Parts 27, 37))

- Space for wheelchair entirely within shelter
- Accessible route connection to boarding/alighting area



Graphic from the Access Board

Section 810.3

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Bus Stops & Shelters



Connect boarding areas, shelters and pedestrian network with an accessible route (DOT ADA Standards, 810.3)

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Bus Route Signs

Must comply with the requirements of visual characters found in 703 (DOT ADA Standards 810.4)



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Bus Maps and Schedules

Schedules, timetables and maps are not required to comply with 703 (DOT ADA Standards 810.4)



Photo from the Access Board

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Available Resources

- FHWA - www.fhwa.dot.gov/civilrights
- US Access Board - www.access-board.gov
- US DOJ - www.ada.gov
- ADA National Network – www.adata.org

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Questions?

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Photo from the Access Board

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Additional Sessions are scheduled for the ADAOnline2020 Program through October 2020

Next Session:

2010 ADA Standards Part 1 & 2
October 6th and 8th

View/register on-line at: www.adaonline2020.org

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