Accessible Features in the Public Right of Way

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Learning Objectives

• Title II Obligations and the proposed Public Right of Way Accessibility Guidelines
• 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

ADA Title II - Program Access

• ADA Title II prohibits discrimination against people with disabilities in all State and Local Government programs, services and facilities

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

- Final Rule Draft has been approved by the Access Board
- Review by the Office of Management and Budget
- Publication in the Federal Register
- Adoption by the Department of Justice and Department of Transportation

What can State and Local Agencies do in the meantime?

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

Obligations for Access

- New construction is required to be accessible
- Alterations to existing facilities must be accessible to the maximum extent feasible within the scope of the project
- Existing facilities that have not been altered cannot deny access to persons with disabilities
New Construction

Accessibility is easiest to achieve in new construction

Alterations

- In alterations, it may not be possible to meet all of the accessibility requirements.
- Follow new construction provisions to the extent practicable within the scope of the project.

Document decisions!

Existing Facilities

- Cannot deny access
- Title II - Self-evaluation
- Transition Plan
Questions?

Pedestrian Access Routes

Sidewalks - Who needs them?

If sidewalks are provided, then they are required to be accessible to and usable by a person with a disability.
What’s Required?

- PROWAG does not require Pedestrian Access Routes (PAR).
- If sidewalks are provided, then they are required to be accessible to and usable by a person with a disability.

Types of Pedestrian Facilities

Pedestrian Access Routes

- Sidewalks (pedestrians only)
- Shared-use Paths (peds and bikes)
- Shoulders

Design Basics

- Surface - firm, stable and slip resistant;
- Width – 48” min. or full width of a shared use path
- Running slope – ≤ road grade, or 5% max.
- 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
Clear Width

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

Shared Use Path Width

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

Continuous Clear Width

48” min clear width continues around all obstructions
Which one meets the requirements?

Running Slope (Grade)

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

Running Slope (SNPRM)

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.
Running Slope

If 2010 ADA Standard slope is applied...

Cross Slope

- 0% best for wheelchair users
- Some slope needed for drainage
- Max cross slope 2%
  - Exceptions for street crossings

Cross Slope at Driveways

Pedestrian design is not an after thought
Compound Slopes at Driveways

Compound slopes – running and cross slopes combined

Construction Tolerance

- Construction tolerances?
- Rounding? 2, 2.0, 2.0000?
- Method of measure? smart level, elevations?
- Design cross slope <2%

Surfaces
Surface Basics

Surface requirements:
• Firm, stable, and slip-resistant
• No large openings or gaps
• Minimal vertical discontinuities

Surface Textures

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

Surfaces

Shared Use Paths and Trails

Loose surface materials:
• Generally need special treatment (e.g., binders, consolidants, compaction, and grid forms)
• Frequent maintenance

NCA’s website - http://www.ncaonline.org/
Surface Discontinuity

* Grade breaks must be flush

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Grates and Openings

No more than ½ inch opening in the direction of travel.

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Flange Way Gap

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

What is the Circulation Path?

Protruding Objects

Objects between 27” and 80” may not protrude more than 4”.
Entire circulation path!
**Pole Mounted Protruding Objects**

- 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

**Ouch!**

No protruding objects within entire width of the pedestrian circulation route

**Ramps**

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

> 6” elevation change requires edge protection

Handrails

- Ramps, stairs, and walkways
- Knuckle clearance: 1 ½” min
- Diameter: 1 ¼” – 2”
- Applies to outer diameter
- Circular & noncircular cross sections

Questions?
Curb Ramps

Curb Ramps - What's Required?

• ADA regulations state that when a sidewalk approaches an intersection a curb ramp is required.
• Detectable Warnings are required on PAR, but not AR (building sites).
• Important to understand that:
  • The ‘cookie cutter’ curb ramp will not fit all.
  • Some engineering required at most corners.

Curb Ramp for each Street Crossing

Two ramps per corner
Two curb ramps per corner are required when feasible

What is a crosswalk?

Crosswalk is the extension of a sidewalk across the street (MUTCD)

Curb Ramp Basics

- Detectable warnings – PAR vs AR
- 1:12, or 8% max. running slope (with length limit as exception to slope limit);
- 1:50, or 2% max. cross slope (with exceptions for stop condition);
- Width – PAR is 4’ min, Shared use path is full width
- Turning space at top of a perpendicular curb ramp and at the bottom of a parallel curb ramp;
- Clear space at the bottom outside of travel lane;
- Flush transitions (no lips);
- Perpendicular grade breaks
Detectable Warnings??

- All curb ramps and blended transitions in the public right of way must have detectable warnings to provide notice underfoot of the change from a pedestrian to a vehicular route.

Detectable Warnings

- 2010 ADA Standards do not require them on curb ramps on sites.
- DOT Standards and 2010 ADA Standards require them at rail platforms where the edge is not protected.

Detectable Warnings (FHWA Memo)

- Required at all street crossings, railroad and boarding platforms.
- 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.
Detectable Warning
Dimensions

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

Anatomy of a Curb Ramp

The ‘cookie cutter’ curb ramp

Reality of Curb Ramps

Curb ramps require design work
Perpendicular Curb Ramps

Perpendicular to the curb or street

Detectable Warning Location

DW is placed at back of curb or at grade break

Detectable Warning Locations

- Place DW on curb ramp at grade break if space at bottom of ramp is less than 5’ from the back of the curb
- Place DW on transition behind the back of the curb if space is more than 5’ deep at any point
Parallel Curb Ramps
Parallel to the curb or street

Detectable Warning Location
DW placement on parallel curb ramp
Place at back of curb on the landing

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

Diagonal/Apex can cause dangerous conflicts
Only permitted in alterations as last option

Diagonal Curb Ramps – Accessible Routes Only* (2010 Standards)

Blended Transitions

Blended Transition (depressed corner)
Blended Transition (raised crossing)

Detectable Warning Location

DW needs to cover the entire flush edge

Running Slope

- Maximum curb ramp slope 1:12 (8%)
- When ‘chasing grade’ length of the ramp may be 15 feet minimum and the slope >8%.
- Consistent slope
Cross Slope

- 2% max where crossing is stop or yield (ADA Standards)
- 5% max where crossing may be free flow (PROWAG Only)

Curb Ramp Clear Width

- Curb ramp must be 4-foot-wide minimum and within the crosswalk.
- Curb ramp must extend full width of a shared use path.

Turning Space

Turning space is required at the top of curb ramps for changing direction (4’ x 4’ min)
Turning Space Locations

- Provide a level turning space at the top of a perpendicular ramp, at the bottom of a parallel ramp, and at corners.

Perpendicular Grade Breaks

Perpendicular grade breaks are required

Perpendicular Grade Break
Counter Slope

- Algebraic difference of the ramp or landing slope and the street crossing grade

Counter Slope – No Lip

Transition must be flush at all grade breaks

Refuge Islands

5-foot minimum width

Median vs Refuge Island - crossing distance
Detectable Warning Devices

Pedestrian refuge islands greater than 6 ft. - DWs placed at the curb

Refuge Islands – Usable?

Turning Space?

Railroad Crossing

Detectable warnings at pedestrian/rail crossings 6-15 ft from the near rail, but always outside a gate
Street Crossings

Street Crossing Basics

- 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 fps);
- Multi-lane roundabouts need some type of pedestrian demand signalization.

Crossings

- PROWAG does not tell you when to mark
- Or how to mark (meet MUTCD requirements)
Detectable Crossings

- Prohibited crossings happen...
- Prohibit for ALL pedestrians

Crossing Running Slope

Running slope of crosswalk is 5% max

Separated Crossings

Running slope – 5% max

Pedestrian Overpasses and Underpasses
Pedestrian Crossings

Maximum crosswalk cross slope
• 2% is a general requirement for pedestrian access routes
• 5% is allowed in a street crossing without stop or yield control

Crossing Time
• 3.5 fps from top of curb ramp to opposite curb
• PROWAG references MUTCD requirements

Crossing Length
• Shorten the crossing with bump outs and islands
Pedestrian Signals & Pushbuttons

Usable information about crossings

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.

Pedestrian Pushbuttons that are Accessible

• Button
  - 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
Pushbutton Location

Reach Ranges

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

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

Pushbutton Size

Usable with a closed fist
Pedestrian Pushbutton Access?

Must be connected by a pedestrian access route

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

MUTCD 4E.08-4E.13

Pushbutton Orientation

Face of pushbutton must be parallel to the crosswalk
Accessible Pedestrian Signal

Locator tone then walk indication
Helps locate pushbutton and crossing

Where's the Pushbutton?

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

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!
Questions?

Temporary Routes

Temporary Route Basics (Work Zones)

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

Yellow tape stops anything... right?

Temporary Traffic Control Devices

Temporary Curb Ramps
Parking

On-Street Parking – Scoping

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

On-Street Parking – Wide ROW

Where the width of the adjacent sidewalk or available right-of-way exceeds 14 ft. an access aisle is required
On-Street Parking – Narrow ROW

Narrow sidewalks – an access aisle is not required.

On-Street Parking - Angled

Angled (or perpendicular) on-street parking

Parking meter displays and information

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

Transit

Transportation Facilities

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

US DOT Standards
Bus Boarding and Alighting Areas

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

Clear Space and Access

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

Bus Stops & Shelters

Connect boarding areas, shelters and pedestrian network with an accessible route (PROWAG and 810.3)
Bus Route Signs

Must comply with the requirements of visual characters found in 703 (PROWAG R410)

Bus Maps and Schedules

Schedules, timetables and maps are not required to comply with 703 (PROWAG 410)

Available Resources

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

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