

Slide 1 Promoting Independence and Access through Responsible Design

Part 2: Safe and Accessible Intersections

will begin at 2 pm ET

Audio and Visual are provided through the on-line webinar system. This session is closed captioned. Individuals may also listen via telephone by dialing 1-857-232-0476 Access Code: 368564 This is not a toll-free number.

Slide 2 Webinar Platform Keyboard Shortcuts

- **Full list – Keyboard shortcuts from the help menu on the Menu Bar.**
- **Chat: Move cursor to the Message text box**
Windows: Ctrl+M Mac: Command-M
- **Speaker level Up:**
Windows: Ctrl+Alt+Up Arrow
Mac: Command-Option-Up Arrow
- **Speaker level Down:**
Windows: Ctrl+Alt+Down Arrow
Mac: Command-Option-Down Arrow

Slide 3 Captioning Keyboard Shortcuts

- **Open Closed-Captioning window**
Windows: **Ctrl+F8**
Mac: **Command-F8**
- **Close Closed-Captioning window**
Windows: **Alt+F4 or Ctrl+W**
Mac: **Command-W**

Slide 4 Captioning

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The caption screen can be accessed by selecting the “CC” icon in the AUDIO & VIDEO panel.

- **Once selected you will have the option to re-size the captioning window, change the font size, and save the transcript**

Picture- Arrow points to the “cc” icon in the audio and video panel.

Slide 5 Listening to the Webinar

Online:

- **Please make sure your computer speakers are turned on or your headphones are plugged in**
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Picture- arrow points to microphone icon on audio and video panel

Slide 6 Listening to the Webinar (cont.)

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This is not a toll-free number

Slide 7 Submitting Questions

- In the webinar platform:
 - You may type and submit questions in the **CHAT** area text box or press **Control+M** and enter text in the **CHAT** area; your questions and comments will only be visible by session moderators
- If you are connected via a mobile device, you may submit questions in the **CHAT** area within the app
- Questions may also be emailed to:
ADAtraining@transcen.org

Picture- participant list

Slide 8 Customizing Your View

- **Resize the whiteboard where the presentation slides are shown to make it smaller or larger by choosing from the drop down menu located above and to the left of the whiteboard; the default is “fit page”**

Picture- drop menu selecting “fit to page”

Slide 9 Customize Your View continued

- **Resize/Reposition the CHAT, PARTICIPANT, and AUDIO & VIDEO panels by “detaching” and using your mouse to reposition or “stretch/shrink”**
- **Each panel may be detached using the icon in the upper right corner of each panel**

Slide 10 Technical Assistance

If you experience technical difficulties

- **Use the CHAT panel to let us know**
- **E-mail ADAtesting@transcen.org**
- **Call 301-217-0124**

Slide 11

Archive

- **This webinar is being recorded and can be accessed within a few weeks**
- **You will receive an email with information on accessing the archive**

Slide 12 Certificates of Participation or American Institute of Architects (AIA) Credits:

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Slide 13 About Your Hosts...

- **TransCen, Inc.**
 - **Mission Statement: Improving lives of people with disabilities through meaningful work and community inclusion**
- **Mid-Atlantic ADA Center, a project of TransCen, Inc.**

- **Funded by National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), Administration for Community Living, U.S. Department of Health and Human Services**

Picture- TransCen Logo

Picture- Mid-Atlantic ADA Center logo

Picture- NIDILRR logo

Slide 14 Promoting Independence and Access through Responsible Design

Picture- photo of Melissa Anderson

Picture- TransCen logo

Picture- Mid-Atlantic ADA Center logo

Slide 15 Promoting Independence and Access through Responsible Design

4-part Webinar Series

- ✓ **Part 1 - Obligations and Sidewalk Basics**
- **Part 2 - Safe and Accessible Intersections**
- **Part 3 - Curbside Access**
- **Part 4 - Ensuring Access on Public Right of Way Projects**

Slide 16 Promoting Independence and Access through Responsible Design 4-part Webinar Series

- **Part 2 – Safe and Accessible Intersections**
 - **Legal Obligations Review**
 - **Standards, Guidelines and Other Resources**
 - **Technical Requirements for Curb Ramps**
 - **Technical Requirements for Street Crossings**
 - **Technical Requirements for Pedestrian Signals**

Slide 17 Federal Civil Rights Laws

- **1973 Rehabilitation Act, Section 504**
 - **Prohibits discrimination in programs and activities receiving Federal funds**
 - **Enforced by DOT/FHWA**
- **1990 Americans with Disabilities Act**
 - **Prohibits discrimination in the provision of facilities, services, and programs**
 - **Title II applies to State and Local Governments**
 - **Enforced by DOJ and DOT/FHWA**

Slide 18 Standards and Guidelines

- **US Access Board – independent Federal agency**
- **Develop Guidelines based on minimum level of access**
- **Standards adopted from Guidelines**
 - **Department of Justice – 2010 ADA Standards**
 - **Department of Transportation ADA Standards**
- ***Proposed* Guidelines for the right of way**
 - **Not a Final Guideline**
 - **Not a Standard**

Picture- president George Bush and others during the signing of the American's with Disabilities Act

Slide 19 Obligation for Access in the Public Right of Way

- **Regulation (28 CFR 35.151) requires curb ramps to comply with 2010 ADA Standards**
- **Flexibility in design for areas not covered**

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

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

Picture- the cover of the Department of Justice 2010 Standards

Picture- the cover of the 2011 proposed Public Right of Way Accessibility guidelines

Picture- cover of the Manual on Uniform Traffic Control Devices.

Picture- logo for the American Association of State and Highway Transportation Officials (AASHTO)

Slide 20 Obligations for Access

- **New construction is required to be accessible- no existing constraints**
- **Alterations to existing facilities must be accessible to the maximum extent practicable within the scope of the project**
- **Existing facilities that have not been altered cannot deny access to persons with disabilities- Transportation Plan**

Slide 21 Alterations

- **Alteration is a change that affects the usability of a facility**
- **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.**

Picture- an intersection under construction with the sidewalk partially torn up and construction barrels in the middle of the road. A bobcat is seen in the background across the street.

Slide 22 Street Alterations

- **If a street is altered a curb ramp must be provided**
 - **35 CFR 35.151(i)**
- **When is resurfacing a street an alteration?**
 - **2013 DOJ/DOT Technical Assistance Memo**
 - **DOT/DOJ Questions and Answers Supplement**
 - **Spans one intersection to another**
 - **Overlay of additional material to the roadway**
- **Maintenance does not require adding or updating curb ramps**

Slide 23 Street Resurfacing Alterations

- **Resurfacing is an alteration that triggers the requirement to add curb ramps if it involves work on a street or roadway spanning from one intersection to another, and includes overlays of additional material to the road surface, with or without milling.**

- **Examples include, but are not limited to the following treatments or their equivalents: addition of a new layer of asphalt, reconstruction, concrete pavement rehabilitation and reconstruction, open-graded surface course, micro-surfacing and thin lift overlays, cape seals, and in-place asphalt recycling.**

Slide 24 Street Maintenance

- **Maintenance - Treatments that serve solely to seal and protect the road surface, improve friction, and control splash and spray are considered to be maintenance because they do not significantly affect the public's access to or usability of the road.**
- **Some examples are: painting or striping lanes, crack filling and sealing, surface sealing, chip seals, slurry seals, fog seals, scrub sealing, joint crack seals, joint repairs, dowel bar retrofit, spot high-friction treatments, diamond grinding, and pavement patching. In some cases, the combination of several maintenance treatments occurring at or near the same time may qualify as an alteration and would trigger the obligation to provide curb ramps.**

Slide 25 Resurfacing Questions

- **When a municipality is resurfacing a street and there are curb ramps or sidewalks that are not compliant with the ADA standards or when there are no curb ramps at all at intersections or at street crossings, what is the municipalities responsibility to correct those sidewalks and/or curb ramps?**
- **Or to install new curb ramps?**
- **Does the source of funding being used for the resurfacing project play into whether or not curb ramps need fixed or installed?**
- **Who is ultimately responsible for ensuring that the correct process is being followed when streets are being resurfaced?**

Slide 26 Curb Ramps

Scoping and Technical Requirements

Slide 27 Format

PROWAG

- **2013 Proposed Public Right of Way Accessibility Guidelines**

ADA Standards

- 2010 ADA Standards, or DOT Standards where noted

Best Practice

- Melissa's opinion based on knowledge and experience

Can you pick a cherry?

Picture- cherries in aa tree

Slide 28 Scoping – Where are Curb Ramps Required?

➤ 35 CFR 35.151(i)

- **Newly constructed or altered streets, roads, and highways must contain curb ramps or other sloped areas at any intersection having curbs or other barriers to entry from a street level pedestrian walkway.**
- (2) **Newly constructed or altered street level pedestrian walkways must contain curb ramps or other sloped areas at intersections to streets, roads, or highways.**

At all **crosswalks***!

Picture- crosswalk at a signalized intersection. There is a pushbutton on the far side, but no curb ramp for access.

Slide 29 Scoping – How many curb ramps?

PROWAG

- One for each street crossing
- Alterations where it's impracticable a single diagonal curb ramp is allowed

ADA Standards

- Not specified, but part of an accessible route

Best Practice

- Follow PROWAG, exceeds ADA

Picture- Photo showing two curb ramps with detectable warnings at corner.

Picture- Illustration of a diagonal curb ramp and the required dimensions

Slide 30

Two curb ramps per corner are required unless impracticable

Picture-street crossing with diagonal ramps on each corner. The path of travel is straight for a person who can step off the curb. For a person using the curb ramps it is down the curb ramp toward the center of the intersection, back to the crosswalk, back toward the center of the intersection and up the receiving curb ramp.

Slide 31

A curb ramp for each street crossing.

Picture- a blended transition at the intersection of two sidewalks leading into two crosswalks

Picture- Drawing of a depressed corner with curb ramps approaching at 90 degrees from each other.

Picture- a single directional curb ramp leading into two crosswalks

Slide 32 Types of Curb Ramps/Transitions

PROWAG

- **Perpendicular curb ramps**
- **Parallel curb ramps**
- **Blended Transitions**

ADA Standards

- **Non-specific**
- **Allows perpendicular, parallel and blended transitions**

Best Practice

- **Follow ADA, but PROWAG is more specific**

Picture- brick curb ramp and grey detectable warnings

Picture- a parallel ramp constructed out of concrete with bright yellow detectable warnings

Slide 33 Perpendicular Curb Ramps

Perpendicular to the curb or street

Picture- Graphic of 2 perpendicular curb ramps at a corner. The ramps are parallel to the crosswalk and have a "funky triangle" at the bottom.

Picture- Graphic of a perpendicular curb ramp with the grade break at the back of the curb, perpendicular to the radial curb.

Slide 34 Parallel Curb Ramps

Perpendicular to the curb or street

Picture- Drawing of a parallel curb ramp. Ramp runs are parallel to the curb.

Slide 35 Blended Transitions

Pedestrian access route transition to street is less than 5%.

Blended Transition (depressed corner)

Picture- Drawing of a blended transition with a level path around the inside corner above the slope to the street. The slope to the street cannot be more than 5% perpendicular to the curb. The cross slope of the path around the corner cannot be more than 2%

Picture- Drawing of a blended transition with two parallel curb ramps that slope down the full width of the sidewalk to a blended transition, or depressed corner, at the bottom. The blended transition at the bottom must have slopes less than 2%

Slide 36 Technical Requirements

- **Surface**
- **Width**
- **Running slope, or grade**
- **Cross slope**
- **Turning space/landing**
- **Grade breaks**
- **Clear space**
- **Flares**
- **Detectable warnings**
- **Counter slope**

Slide 37 Curb Ramp Surface Requirements

PROWAG

- **Firm, stable and slip resistant**
- **No grade breaks on ramp runs**

ADA Standards

- Firm, stable and slip resistant
- No changes in level on ramp run
- Landings cannot accumulate water

Best Practice

- Follow ADA+ no grade breaks
- Concrete easiest to form and most likely to comply with other requirements

Picture- brick curb ramp and grey detectable warnings

Picture- accessible sidewalk with no detectable warning

Slide 38 Width Requirements

PROWAG

- 48 inches' min
- Full width of a shared use path

ADA Standards

- 36 inches' min

Best Practice

- Follow PROWAG, exceeds ADA
- 48+ inches' to account for finishing bevel and construction tolerance

- **AASHTO and local policies generally 5-8 ft. pedestrian route**

Picture- a shared use path, full width curb ramps and a crosswalk

Slide 39 Running Slope Requirements?

PROWAG

- **1:12, or 8.3% max**
- **“15 ft Rule” allows steeper slope**
- **Document!!**

ADA Standards

- **1:12, or 8.3% max**
- **Exceptions for space limitations**
 - **8.3-10% for 6 in. max rise**
 - **10-12.5% for 3 in. max rise**
 - **12.5% max**
- **No “15 ft Rule”**

Best Practice

- **Follow ADA**
- **Use the flattest slope possible**
- **Steeper slope only if technically impracticable, or space limitations**
- **7.5% max to allow for construction tolerance**
- **Note- no max. length for a curb ramp**

Slide 40 Running Slope Examples

Picture- Drawing shows a pair of parallel curb ramps with ramp run slope arrows parallel to the curb

Picture- Drawing of a blended transition with arrows showing the running slope

Slide 41 ADA Exception and the “15 Foot Rule”

- **ADA Standards Exception – alterations with limited space**
- **PROWAG- “Chasing grade” to meet existing sidewalk**

Slide 42 Cross Slope Requirements?

PROWAG

- **2.0% max if traffic must stop or yield**
- **5.0% max if traffic has no stop or yield (through condition)**

2010 ADA

- **2.0% max**

Best Practice

- **Follow ADA**
- **Steeper cross slope only if technically impracticable, document**
- **1.5% max to allow for construction tolerance**

How much cross slope is needed to drain water from a curb ramp?

Picture- a very long steep curb ramp

Slide 43 Cross Slope Examples

ADA standard vs reality

Slide 44 Turning Space/Landing Requirements?

PROWAG

- **Required at the top of a perpendicular curb ramp and the bottom of a parallel curb ramp**
- **4 ft min x 4 ft min**
- **4 ft min x 5 ft min, if constrained**
- **Cross slope 2% max for stop or yield, 5% max in not stop or yield**

ADA Standards

- **Required at the top of a curb ramp**
- **36 in min x 36 in min**
- **If no landing, or <36 in., flares 1:12 max**
- **Cross slope 2% max**

Best Practice

- **Follow ADA for slopes and PROWAG for dimensions**
- **Always have a landing, or choose different design**
- **1:12 flares with no landing creates a compound slope and is difficult to use**
- **Allow for construction tolerance**

Slide 46 Turning Space/Landing Examples

2010 ADA Standards

- **36 in min.**
- **Full width**
- **2% max. slopes**

PROWAG

- **4ft x 4ft min**
- **4ft x 5ft min. with constraints**
- **2% max slopes**
- **Slope may vary with crosswalk type**

Picture- Drawing from Section 406.4 of the 2010 ADA Standards showing the dimensions of a landing at the top of a curb ramp - 36 inches parallel to the ramp run and the full width of the ramp.v

Picture- from the PROWAG showing landing space dimensions of 4 ft x 4 ft

Slide 46 Turning Space – Why Does It Matter?

Picture- a man struggling to up a curb ramp and turn onto the adjacent sidewalk without a turning space.

Picture- man leaning forward as he tries to navigate the compound slope of a curb ramp without a turning space.

Slide 47 Grade Break Requirements?

PROWAG

- **Perpendicular grade breaks**
- **Flush transitions**

ADA Standards

- **Flush transitions**

(Cross slope of 2% max. will result in perpendicular grade break)

Best Practice

- **Follow PROWAG, exceeds ADA standards**
- **A non-perpendicular grade break causes instability**

Picture- a wheelchair on a ramp with a skewed grade break. One front caster is off the surface and circled in red.

Slide 48 Grade Break Examples

Perpendicular grade break

Flush transition

Picture- Drawings of two perpendicular curb ramps on a radius with the grade breaks at the bottom of the ramp at the back of the curb.

Picture- Drawing of the profile of a curb ramp and transition to the gutter. It is a flush transition.

Picture- Drawing of a person using a power chair with the tip wheels holding the running wheel above the surface of the gutter because of the lip at the bottom of the curb ramp

Slide 49 Clear Space Requirements?

PROWAG

- **Required at the bottom of a curb ramp**
- **4 ft min. x 4 ft min.**
- **Outside parallel vehicle travel lane**
- **Within the crosswalk**

ADA Standards

- **Required at the bottom of a diagonal curb ramp**
- **48 in min. x 36 in min.**
- **Outside of active traffic lanes**
- **Within the crosswalk markings, if marked**

Best Practice

- **Follow PROWAG, exceeds ADA Standards**
- **No specific slope requirements**

Slide 50 Clear Space Examples

- **Within crosswalk**

- 48 in x 48 in min.
- No slope requirements

Picture- Drawing of perpendicular curb ramps with the clear space shown within the crosswalk markings

Picture- Drawing of a diagonal curb ramp with the 48 in. deep clear space within the crosswalk markings

Slide 51 Clear Space Examples

Picture- a curb ramp sitting so skewed with the crosswalk the clear space is outside of the markings and in the path of vehicular travel

Picture- a curb ramp that is half outside of the crosswalk alignment

Slide 52 Flare Requirements?

PROWAG

- **Required where a pedestrian circulation path crosses the curb ramp, flare slope 10% max, measured parallel to the curb**

ADA Standards

- **Where provided, flare slope 10% max**

Best Practice

- **Follow PROWAG, and ADA standards**
- **Provide flares where curb ramp sides are traversable and all flares 10% max.**

Picture- a corner with two curb ramps and flares in between them where people might walk

Slide 53 Flare Examples

Picture- a curb ramp single perpendicular curb ramp with short steep flares

Picture- a perpendicular curb ramp with vertical curbs on the side. The vertical curb is within the width of the sidewalk and person in a wheelchair might to ride on the top of the curb and tip.

Slide 54 Detectable Warnings Requirements?

PROWAG

- **2 ft min in direction of travel**
- **Contrasting**
- **Full width of curb ramp, blended transition or turning space**
- **Same specs (R305)**
- **RR crossings and boarding platforms**
- **Location guidance**

DOT ADA Standards

- **2 ft min in direction of travel**
- **Full width of curb ramp**
- **Contrasting**

- Same specs (705)

Best Practice

- Follow PROWAG exceeds ADA standards
- Provides location guidance
- Protect the full width of the curb opening

Picture- Drawing of the technical specifications for truncated domes on detectable warnings

Picture- Drawing of the dome dimensions

Slide 55 Detectable Warning Locations – Parallel Curb Ramps and Blended Transitions

- Place DW at the back of the curb

Picture- Drawing shows a pair of parallel curb ramps with ramp run slope arrows parallel to the curb and the detectable warnings on the turning space at the back of the curb

Picture- Drawing of a blended transition with a clear path around the inside corner above the slope to the street. The slope to the street cannot be more than 5%. The detectable warnings are at the back of the curb

Slide 56 Detectable Warning Locations – Perpendicular Curb Ramps

- **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**

Picture- This is a graphic showing curb ramps on the right and left of an intersection. The left one is a single perpendicular curb ramp ending less than 5 feet from the back of the curb - detectable warnings go on the bottom of the curb ramp. The right side shows two curb ramps approaching the intersection at right angles to each other. They share a turning space at the bottom and the ends of the curb ramps are more than 5 feet from the back of the curb - detectable warnings go at the back of the curb.

Slide 57 Detectable Warning Locations

Picture- parallel curb ramps with yellow detectable warnings at the back of the curb on the turning space

Picture- a curb ramp single perpendicular curb ramp with black detectable warnings placed perpendicular to the path of travel leaving a triangle at the bottom behind the curb

Picture- a blended transition with 2 ft detectable warnings across the full width of the curb opening

Picture- a perpendicular curb ramp with black detectable warnings at the back of the curb

Slide 58 Counter Slope Requirements?

PROWAG

- 5% max

ADA Standards

- 5% max
- Flush at transitions

Best Practice

- Follow ADA

Picture- Drawing of a man in a wheelchair and the gutter has been flattened as a transition between the curb ramp and the crosswalk.

Picture- Drawing of a man in a wheelchair tipping backwards because the curb ramp slope and the slope of the crosswalk are both steep.

Slide 59 Curb Ramp Maintenance

Picture- a curb ramp with severely deteriorated detectable warnings

Picture- a curb ramp with the clear space blocked by temporary banners and their ballasts

Picture- A group of people on a sidewalk

Slide 60 Street Crossings/Crosswalks

Picture- an elderly woman waiting to cross a wide street

Picture- Aerial picture of tan intersection showing a four-lane road with two outer roads and a crosswalk with pedestrian signals

Picture- Aerial picture of a multi-lane roundabout with pedestrian crossings.

Picture- a pedestrian using a walker crossing a street

Slide 61 Street Crossing Resources

PROWAG

- **Covered in PROWAG**

2010 ADA

- **Not covered**

Best Practice

- **Follow PROWAG**

Definition of a Crosswalk, MUTCD- the part of a roadway included within the connections of the lateral lines of the sidewalks on opposite sides of the highway, and in the absence of a sidewalk on the side

of the roadway, the extension of the lateral lines of the sidewalk at right angles to the center line; or any portion of a roadway indicated as a pedestrian crossing by pavement marking

Slide 62 Where do Crosswalks Exist?

Picture- Aerial picture of crosswalks at T-intersections

Picture- Picture of a metal barrier and a sign reading Crosswalk Closed

Slide 63 Technical Requirements for Crossings

- Marked vs Unmarked**
- Surface**
- Width**
- Running slope, or grade**
- Cross slope**

Picture- a man using a wheelchair crossing the road in a marked crosswalk

Slide 64 Marked vs Unmarked Crossings

No accessibility information to address marking a crosswalk. See Part 3 of the MUTCD and TRB Research

Picture- an unmarked crosswalk and a pedestrian signal

Picture- a busy intersection with a marked crosswalk

Slide 65 Crosswalk Surface

Part of the pedestrian access route

- **Firm, stable and slip resistant**
- **1/4 - 1/2 in. max. surface discontinuities**
- **No large openings or gaps**
- **48 in. min. width, full width of a shared use path**

Picture- a crosswalk that is full of potholes and uneven patches

Picture- a person walking across a nicely paved marked crosswalk

Slide 66 Crosswalk Running Slope

Part of the pedestrian access route

- **5% max.**

Picture- a man using a wheelchair crossing the road in a marked crosswalk

Slide 67 Crosswalk Cross Slopes

Maximum crosswalk cross slope

- **2% is a general requirement for pedestrian access routes and stop or yield vehicle control**

- **5% is allowed in a street crossing without stop or yield vehicle control- free flow (PROWAG only)**

Picture- steep street that has been leveled off at the intersection

Slide 68 Median vs Refuge Island

Median

- **median allows full street crossing**
- **no pedestrian wait area**
- **no detectable warnings**

Refuge Island

- **Refuge island provides pedestrian wait area- 6 ft. long**
- **5 ft. wide min.**
- **Requires detectable warnings**

Picture- a man and woman walking through a pedestrian refuge island with detectable warnings

Picture- refuse island between the right turn lane and the other lanes. Plenty of room to wait for pedestrian crossing signal

Slide 69 Pedestrian Crossings at Roundabouts

- **Separate sidewalks**
- **Multi- lane must have pedestrian activated signal**

Picture- Separated sidewalk at a multi-lane roundabout with a pedestrian signal

Picture- a pedestrian walking across a single lane of a roundabout with a car waiting.

Slide 70 Pedestrian Signals – Effective Communication

ADA - 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.

Slide 71 Usable vs Accessible Pedestrian Signal

Accessible to and Usable by

- **Pedestrian access route**
- **Surface slopes**
- **Reach range**
- **Operable parts**

Accessible Pedestrian Signal

- **Locator tone**
- **Audible indicators**
- **Vibrotactile indicators**

Picture- a pedestrian push button located on a pole several feet from the sidewalk across a dirt path

Slide 72 Reach from Clear Space

➤ Vertical

- **Max. Reach – 48”**
- **Min. Reach – 15”**

(forward & side)

➤ Horizontal

- **Side reach within 10”**
- **Forward reach – no obstruction or space**

➤ Operable Parts

- **No tight grasping, twisting, or pinching**

Picture- Drawing of a person in a wheelchair and the high and low reach range limits with a 10 inch obstruction.

Picture- an accessible pedestrian pushbutton

Slide 73 Clear Space

- **30 in. x 48 in min.**
- **Alcove requires maneuvering space**
- **Cross slope 2% max.**

- Best practice, less than 2% max. slope in each direction

Picture- Clear space for a pedestrian pushbutton located in an alcove with curbs on three sides requiring additional maneuvering space

Slide 74 Usable Pedestrian Signal

- **Button**
 - **Face of button parallel to crosswalk**
 - **Mounted at 42" (48" max used to be 54")**
 - **Max. 5 lbs. pressure needed to activate**
- **Sign**
 - **Adjacent to button – explains purpose and use**
 - **Must clearly indicate crosswalk direction**

Picture- an accessible pedestrian push button

Slide 75 Pedestrian Pushbutton Location (MUTCD Guidance)

- **Accessible route to ramp and crossing**

- **Reachable (10 in) from a clear space**
- **5 ft from the crosswalk**
- **1.5-6 ft from edge of curb or pavement**
- **See MUTCD Guidance Fig. 4E-4**

Picture- Diagram from the MUTCD of the proper location of pedestrian push buttons

Slide 76 Accessible Pedestrian Signals

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

Picture- Pedestrian with guide dog using APS

Picture- Example of large pedestrian push button with tactile arrow

Slide 77 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!

Picture- crosswalk to channelizing island with no curb ramp.

Picture- intersection corner with accessible pedestrian signal, crosswalks and no curb ramps. New sidewalk appears to have been constructed.

Picture- intersection corner with crosswalks and inaccessible curb ramp.

Slide 78 Resources

- US Access Board –

www.access-board.gov

www.row@access-board.gov

- FHWA –

www.fhwa.gov

State Division Office

- DOJ –

www.ada.gov

Title II Technical Assistance

for specific resources see the handout on the webpage

Slide 79 Questions?

Picture- a woman pointing to a sign that says No Pedestrian Crossing and it has a push button just beneath it.

Slide 80 Upcoming Webinars

- ✓ Part 1 - Obligations and Sidewalk Basics**
- ✓ Part 2 - Safe and Accessible Intersections**

Curb ramps, street crossings, signals

Part 3 - Curbside Access

Transit stops, parking, passenger loading zones

Part 4 - Ensuring Access on Public Right of Way Projects

Design decisions, construction inspection and best practices

Slide 81 Certificate of Participation and/or LU/HSW AIA Code

- **Please consult the reminder email you received about this session for instructions on obtaining a certificate of participation for this webinar.**
- **Please email the code above to adatrainig@transcen.org by 5 PM E.T. on Monday, May 20th.**

Slide 82 Mid-Atlantic ADA Center

TransCen, Inc.

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Toll Free: 800-949-4232 (DC, DE, MD, PA, VA, WV)

Telephone: 301-217-0124

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ADAinfo@transcen.org

www.ADAinfo.org

Picture- Mid- Atlantic ADA Center logo

Slide 83 Thank You!