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**VIRTUAL  
SERIES**

# Mobility and Access for All: **PROWAG and Active Transportation**

**Speakers:**

Jeremy Chrzan, PE, PTOE, LEED AP, Toole Design

Jim Elliott, AICP, Toole Design

*December 13, 2023*



# Webinar Housekeeping

- This meeting is being **recorded**
- Turn on closed captions from the menu bar with the CC icon. Click and drag captions to preferred location on screen.
- Submit questions via the **Q & A function or chat**
- We'll send a follow-up email within the next week with **link to recording and Q & A transcript**
- For more information on the Kansas Active Transportation Enhancement (KATE), access to webinar recordings and other resources, and to sign-up for future sessions, visit:  
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The state's first Active Transportation Plan since 1995 explores the needs of people who walk, cycle, use mobility assistance devices, scoot, and more. In addition to the Plan, several toolkits and resources that complement the Plan and advance the needs of active transportation in local communities are available.

**Kansas Active Transportation Plan**  
Plan Appendices:  
[Equipment Summaries](#)  
[Policy Memo](#)  
[Crash Analysis Summary](#)  
[Statewide Economic Impact Analysis Summary](#)

**Kansas Active Transportation Plan (ATP) Toolkits**  
[Active Transportation Planning Toolkit for Small- and Medium-Sized Communities](#)  
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**Walk, Bike, Roll Kansas Virtual Series and Summit – Mark Your Calendars!**  
Virtual Series #1 – May 24th at 2pm: Meet KATE: Supporting Active Transportation at the State and Local Level. [Slides](#), [Q&A](#), [Recording](#)  
Virtual Series #2 – June 28th at 2pm: Active Tourism [Register Here](#)  
Virtual Series #3 – July 29th at 2pm: Active Transportation Demonstration Projects 101  
Virtual Series #4 – August 23rd at 2pm: Active Transportation Planning Toolkit  
[In-Person Summit - September 20-22, McPherson Community Building](#)  
Virtual Series #5 – October 25th at 2pm: Increasing Safety for Pedestrians  
Virtual Series #6 – December 13th at 2pm: Mobility and Access for All

**Other Kansas Active Transportation Plan Resources:**  
[Active Transportation Benefit Cost Tool & User Guide](#)  
[Funding Your Plan](#)  
Active Transportation [Stories Map](#) - How Kansans Get Around Their Communities  
[Active Transportation Plan and Policy Registry & map](#)  
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Safe Routes to School in Kansas: What's New and How Your Community Can Get Started

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Kansas Drive to Zero: Speed Management and User Separation to Increase Safety

Network Gaps and Barriers: Design Strategies and Considerations for Roadway, Highway, and Water Crossings

Planning for Long-Term Project Success: Maintenance Needs and Costs from Concept through Implementation

# Our Speakers

Jeremy Chrzan, P.E., PTOE, LEED AP  
Multimodal Design Practice Lead, Toole Design

Jim Elliott, AICP  
Senior Planner, Toole Design



# Introduction to PROWAG:

The U.S. Access Board's  
Public Right-of-Way  
Accessibility Guidelines

**TOOLE**  
DESIGN



# What Will Be Covered

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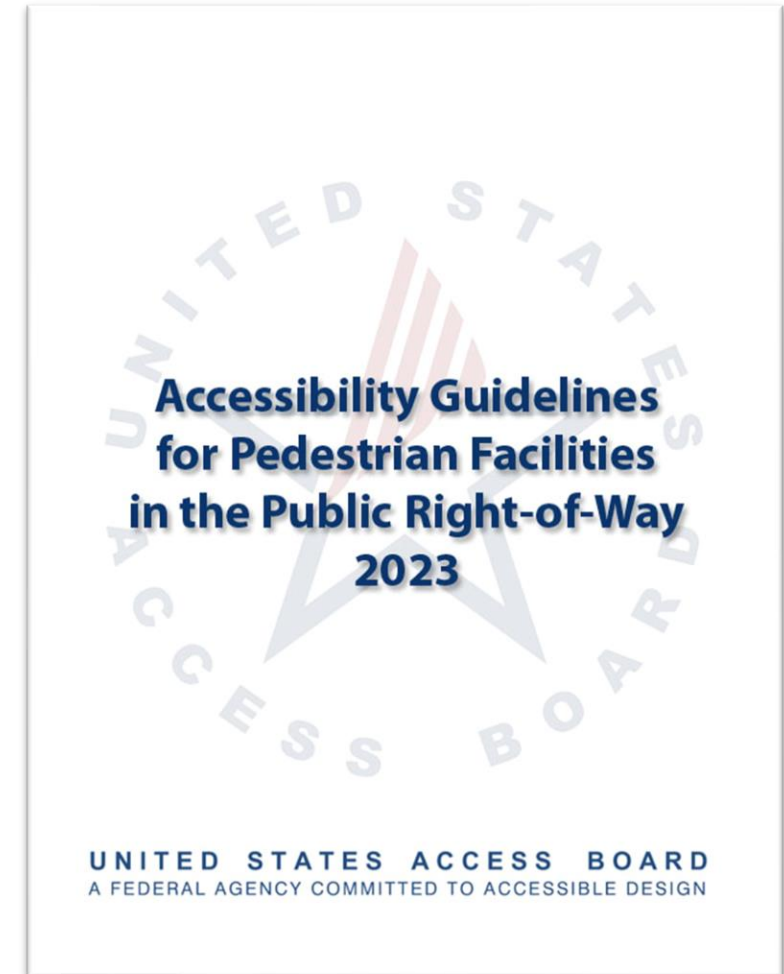
- Background
- Overview
- Changes from NPRM
- Pedestrian Access Routes
- Wrap Up
- Q&A

# BACKGROUND



# What is PROWAG?

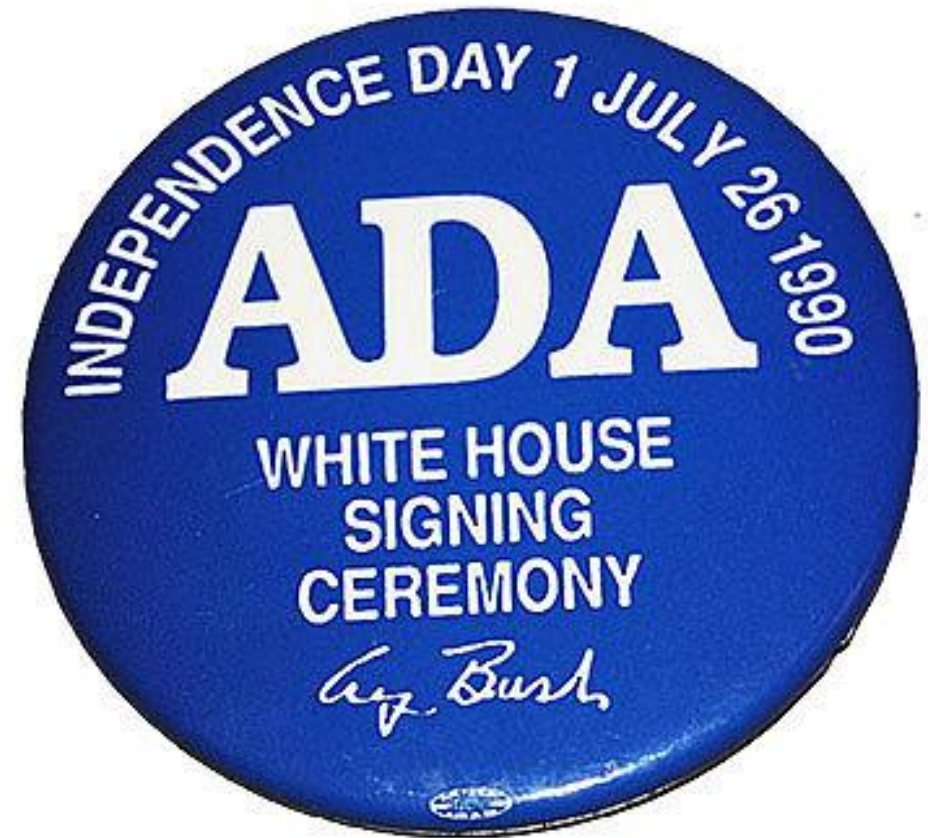
- Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way
- Minimum accessibility guidelines for pedestrian facilities in the public right-of-way
- Does not require construction of pedestrian facilities, but if facilities are constructed or altered they must comply.
- Applicability not contingent on federal funding
- Goal is to ensure pedestrian facilities in the public right-of-way are readily accessible and usable by individuals with disabilities





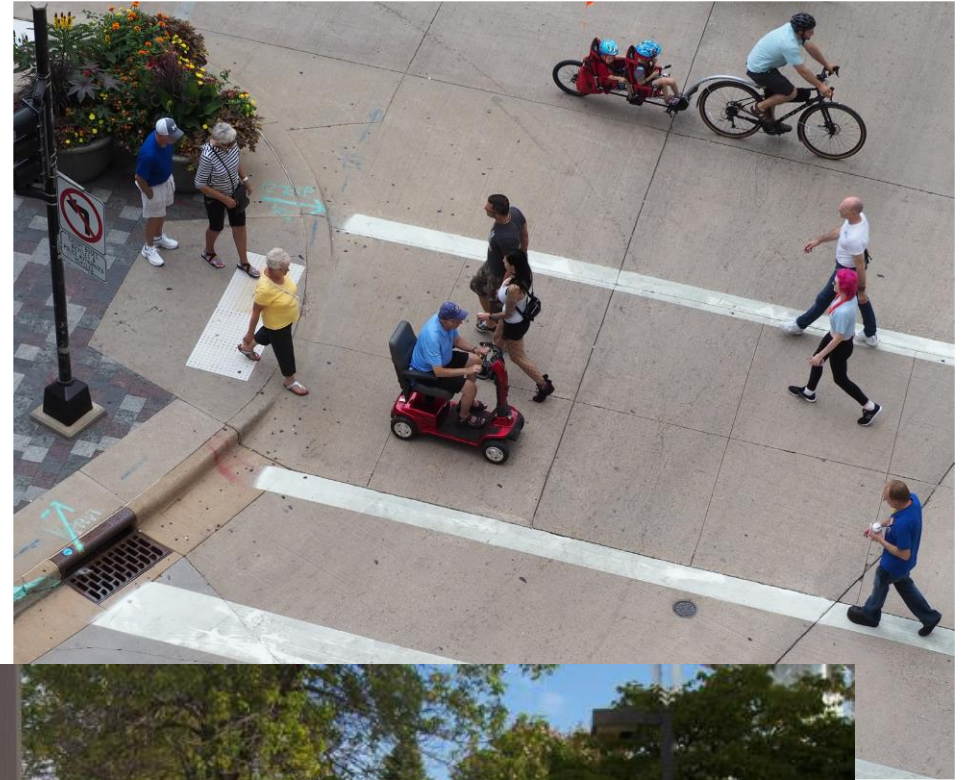
# PROWAG History

- 30+ years in the making
  - 1990 - ADA enactment
  - 2002 - Draft guidelines issued
  - 2011 - NPRM issued
  - 2013 - SNPRM issued
  - 2023 - Final rule adopted by Access Board August 8; effective Oct. 7, 2023
- Enforceable standard upon adoption by USDOT and USDOJ



# Why PROWAG Matters

- PROWAG to become first national-level enforceable guidance for accessibility in the public right-of-way
- Consistency and predictability in design
- 27% of US population has some type of disability (CDC)
- Most people experience a temporary disability
- Access to education, jobs, healthcare, shopping, recreation, etc.
- Benefits people who do not have disabilities



# PROWAG OVERVIEW

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# PROWAG Organization

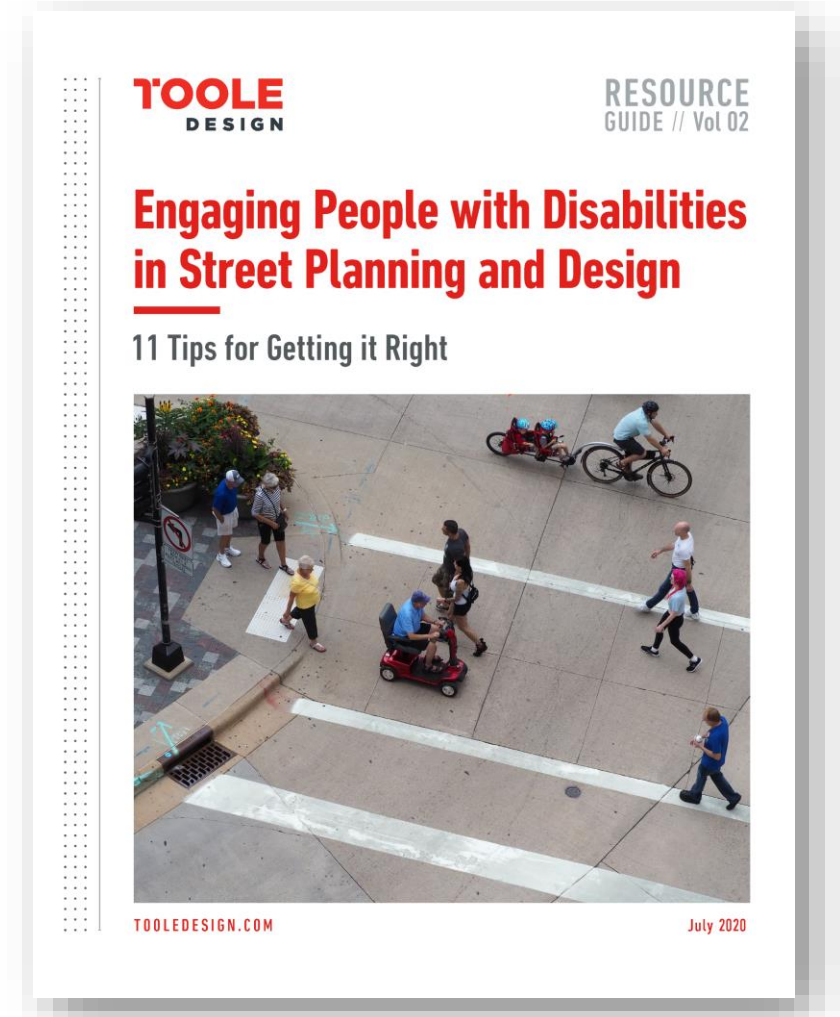
- Chapter 1: Application and Administration
- Chapter 2: Scoping Requirements
- Chapter 3: Technical Requirements
- Chapter 4: Supplemental Technical Requirements

# Topics Covered

- Pedestrian access routes
- Alternate pedestrian access routes
- Protruding objects and vertical clearance
- Sidewalks
- Street furniture
- Curb ramps and blended transitions
- Detectable warning surfaces
- Crosswalks
- Accessible pedestrian signals
- Pedestrian signal timing
- Pedestrian overpasses and underpasses
- Transit stops and transit shelters
- On-street marked or metered parking
- Passenger loading zones
- Stairs and escalators
- Handrails
- Street furniture, including public toilets, tables, counters, benches, drinking fountains
- Pedestrian signs
- At Grade Rail Crossings

# Topics Not Covered or Not Covered In-Depth

- Separated bike lanes, floating bus stops, shared spaces, electric vehicle charging stations, and other street design innovations
- Quick build projects, e.g., flex post curb extensions and pedestrian crossing islands
- Tactile walking surface indicators other than detectable warning surface, e.g., tactile direction indicator
- People with intellectual and developmental disabilities
- Engaging people with disabilities

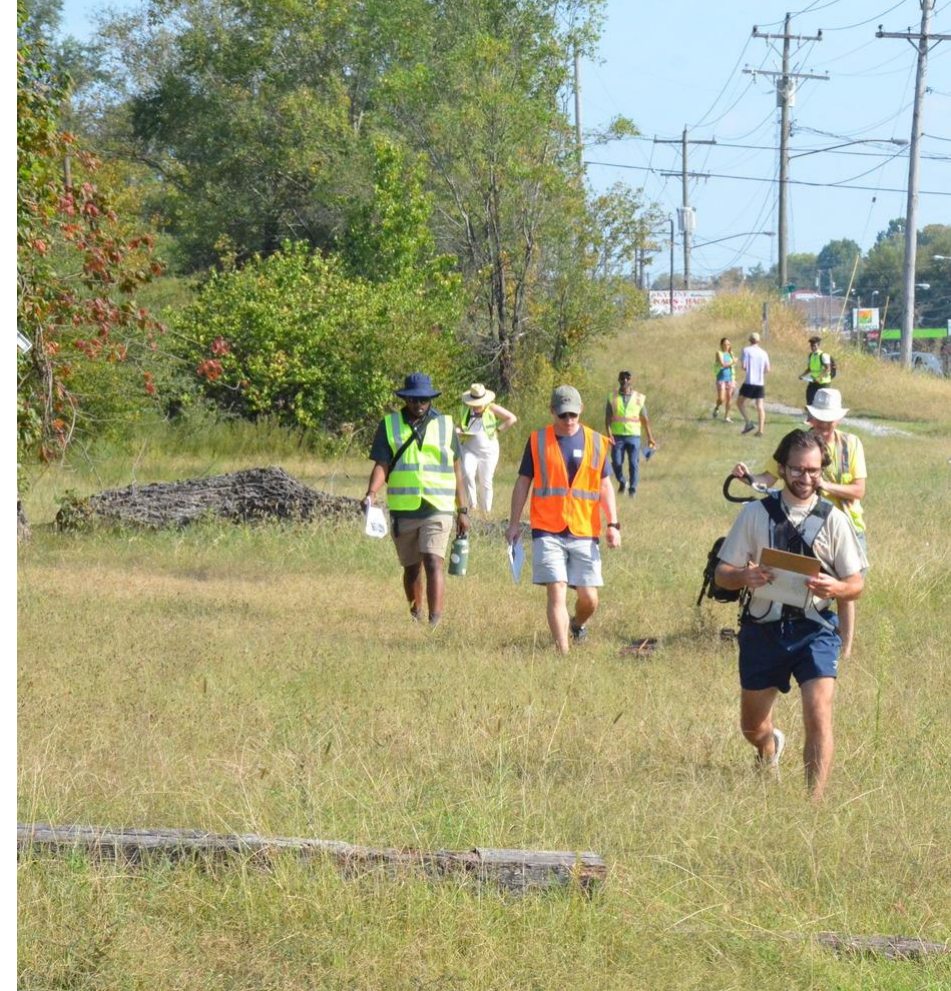


# Key Changes from NPRM



# New Construction Projects

- Construction on undeveloped land, i.e., greenfield
- New construction must fully comply
- **EXCEPTION:** Pedestrian facilities within vaults, tunnels, and other spaces used only by service personnel for maintenance, repair, or monitoring of equipment are not required to comply.





# Alterations Projects

- *Change to, or an addition of, pedestrian facility in existing developed public right-of-way*
- Must comply to the maximum extent feasible where existing physical constraints make compliance technically infeasible
- Existing ROW width is not a physical constraint

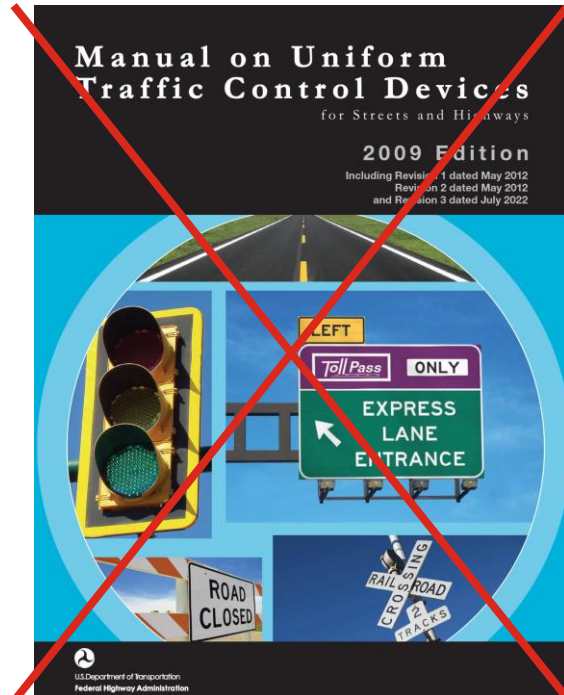


# General Changes

- No more advisories
- MUTCD sections previously incorporated by reference now stated directly
- “alternative designs, products, or technologies” that provide “substantially equivalent or greater accessibility” are allowed except for treatments covered under the ABA

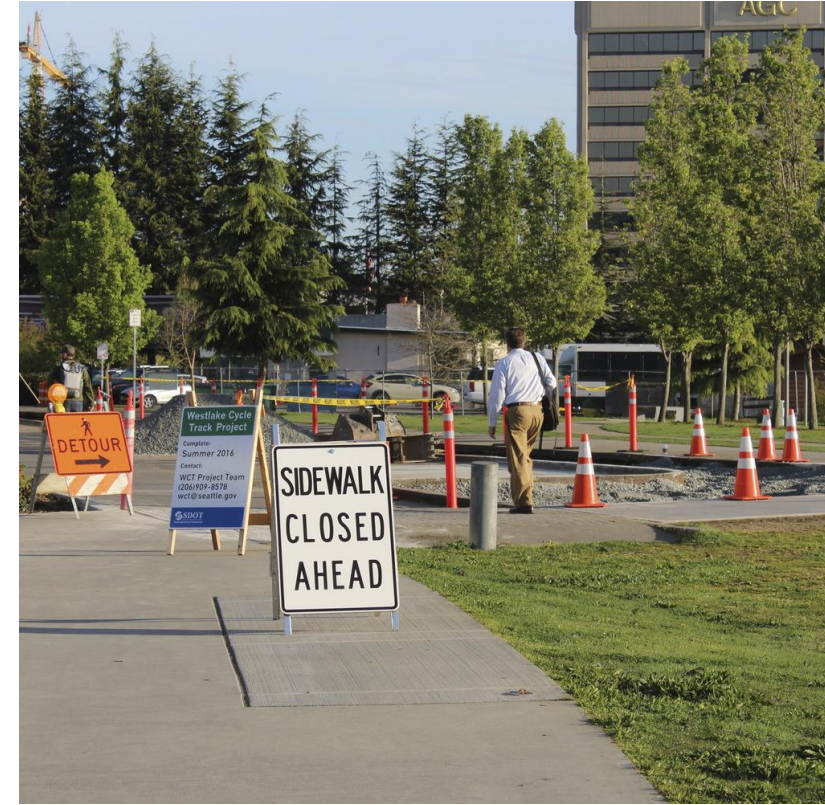
**Advisory R304.1 General.** There are two types of curb ramps:

- Perpendicular curb ramps have a running slope that cuts through or is built up to the curb at right angles or meets the gutter break at right angles where the curb is curved. On large corner radiuses, it will be necessary to indent the gutter break on one side of the curb ramp in order for the curb ramp to meet the gutter break at right angles.
- Parallel curb ramps have a running slope that is in-line with the direction of sidewalk travel and lower the sidewalk to a level turning space where a turn is made to enter the pedestrian street crossing.



# Pedestrian Access Routes & Pedestrian Circulation Paths

- Maximum cross slope is 1:48 (2.1%)
  - For landings, accessible routes, and clear spaces adjacent to operable parts
- Requirements for alternate pedestrian access routes (formerly in MUTCD)
- For alternate pedestrian access routes, requires audible or other non-visual signage in advance of decision points



# Continuous Clear Width

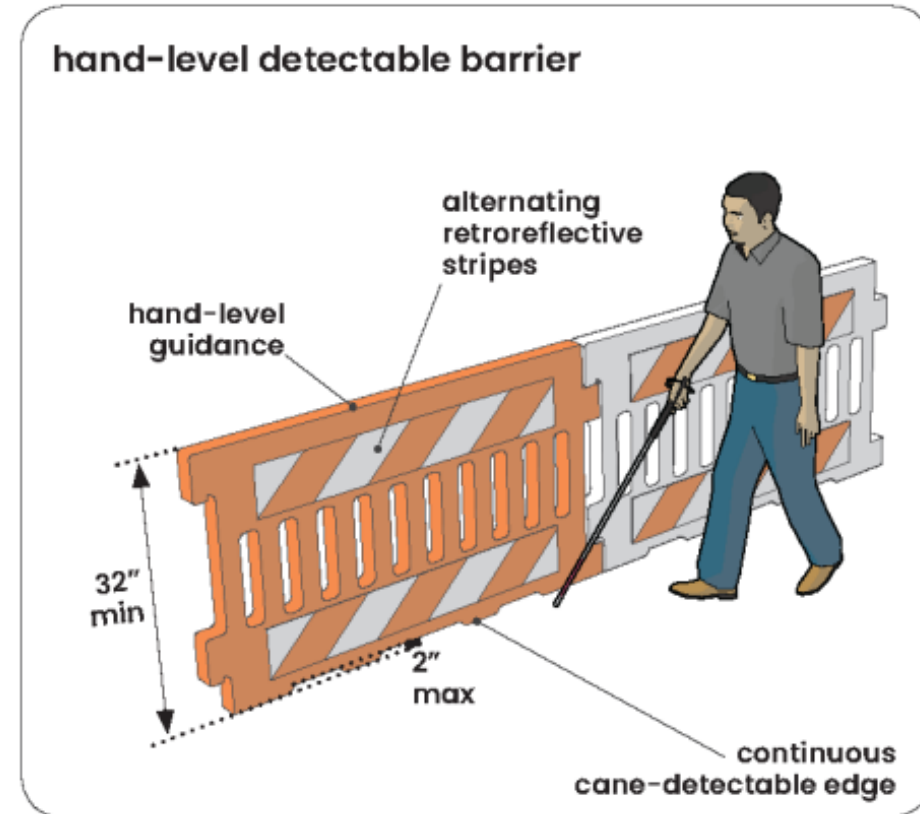
- 48" min. continuous clear width of alternate pedestrian access routes exclusive of the width of any curb.

*EXCEPTION: If the alternate route uses an existing pedestrian circulation path, the width shall not be less than the width of the temporarily closed route*



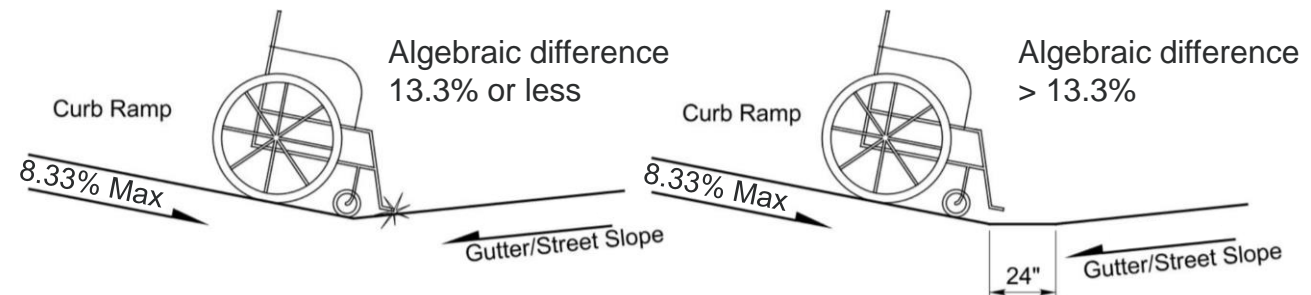
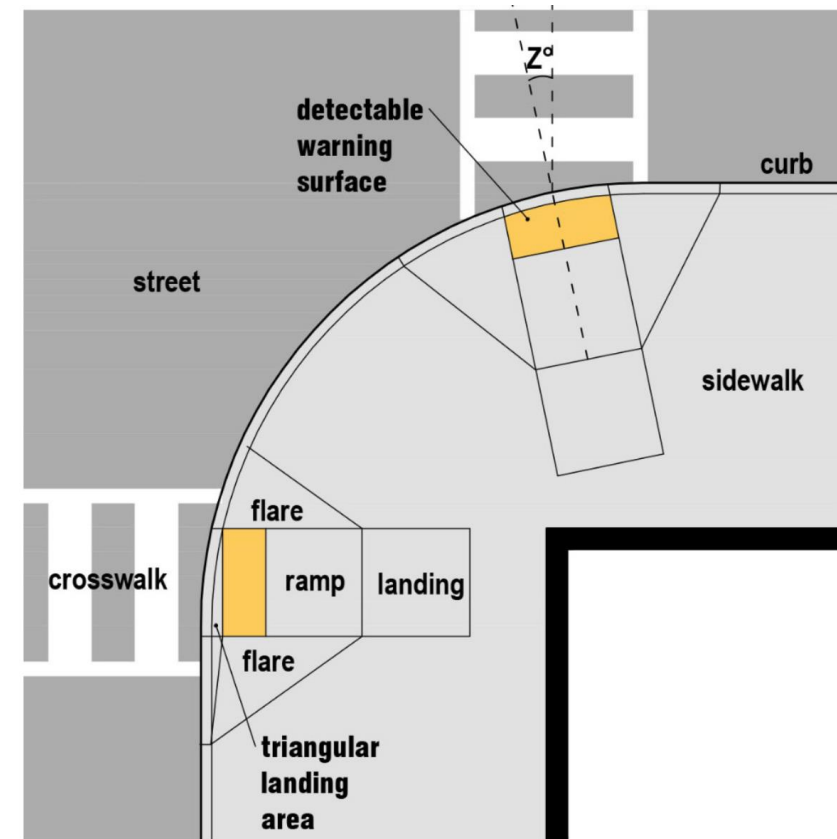
# Detectable Edging of Channelizing Devices

- Where a channelizing device is used to delineate an alternate pedestrian access route, continuous detectable edging shall be provided throughout the length of the route.
- *EXCEPTION: Where pedestrians or vehicles turn or cross, gaps in the detectable edging are permitted.*

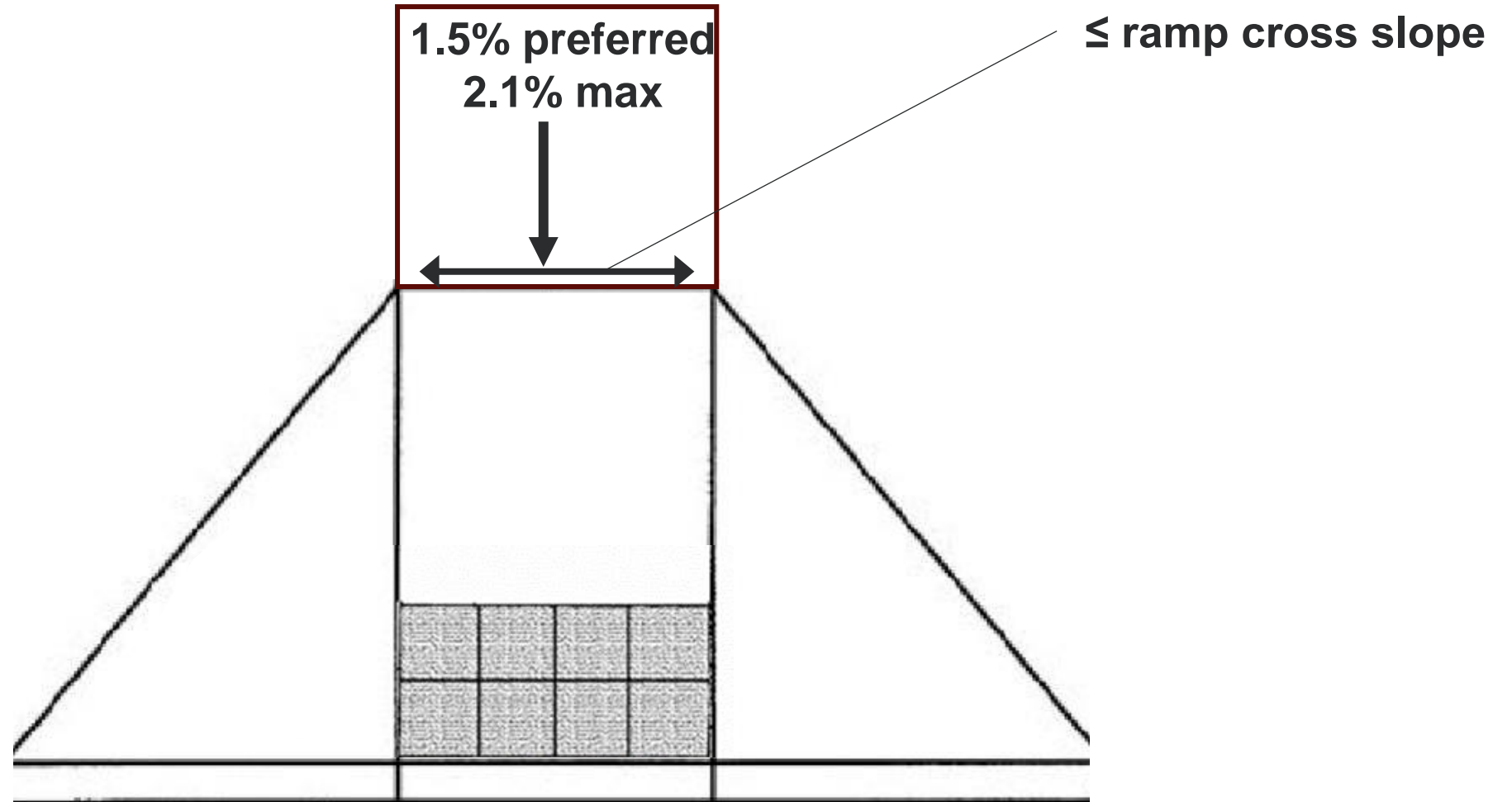


# Curb Ramps and Blended Transitions

- Still requires one curb ramp or blended transition for each crosswalk (including unmarked) or a single blended transition that spans all crosswalks
- A landing is required when a change in direction is necessary to access a curb ramp from a pedestrian access route
- Clarifies that 48" x 48" clear area at bottom of ramp is required for perpendicular ramps and located wholly outside the vehicle or bicycle travel lanes parallel to crosswalk
- Provides option of installing a transitional space at the bottom of a curb ramp or blended transitions, so that the combined change in grade is not greater than 13.3%.



# Curb Ramp Landing Slopes



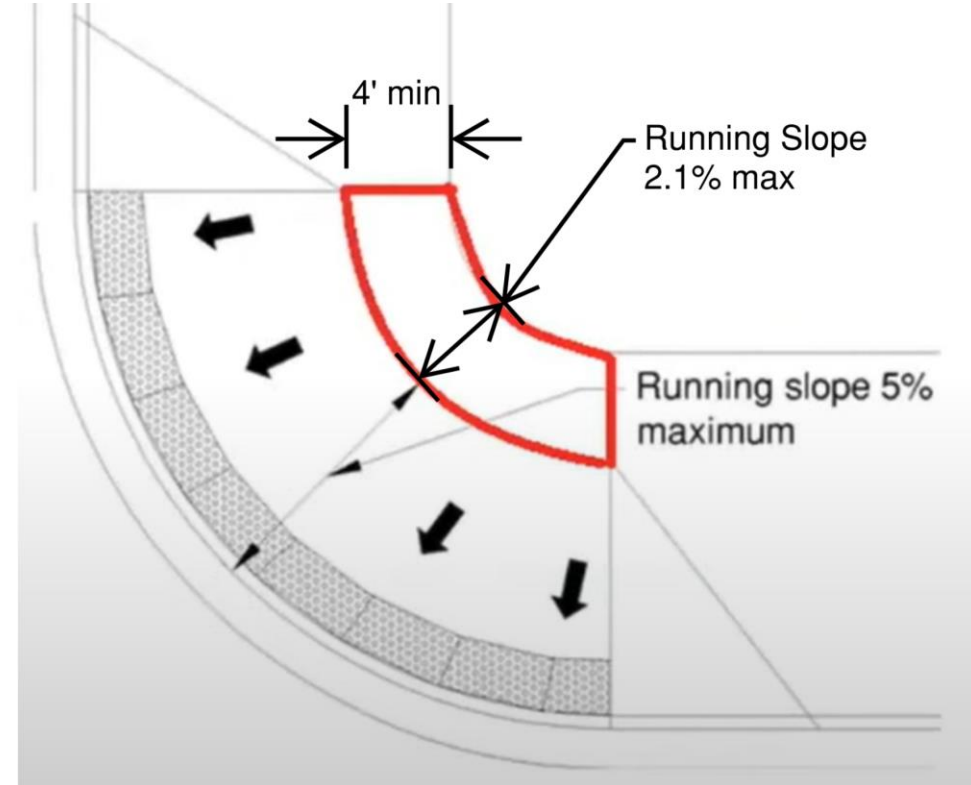
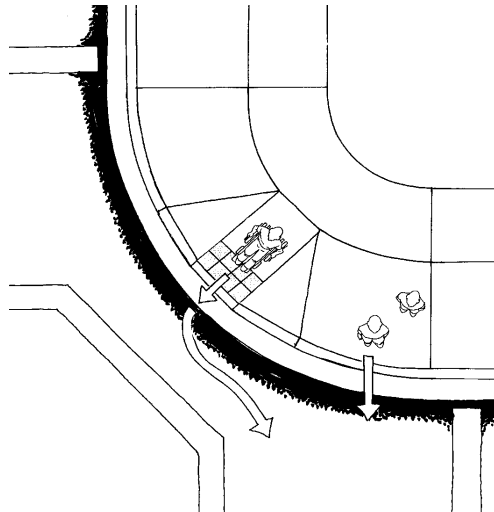
# Perpendicular Curb Ramps with Shared Landing





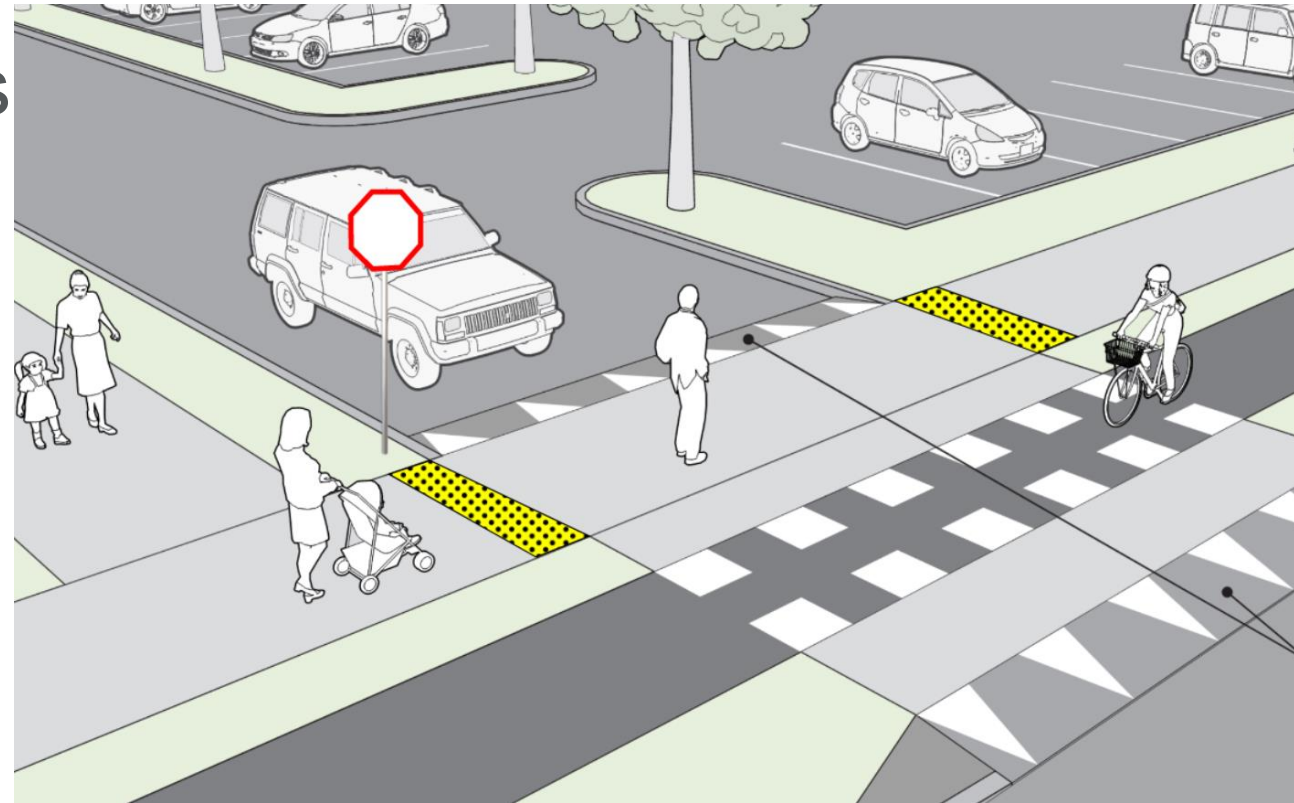
# Curb Ramps and Blended Transitions (Cont.)

- Blended transitions require accessible bypass with running slope no greater than 2.1%
- A single diagonal ramp is only permitted if two ramps are technically infeasible



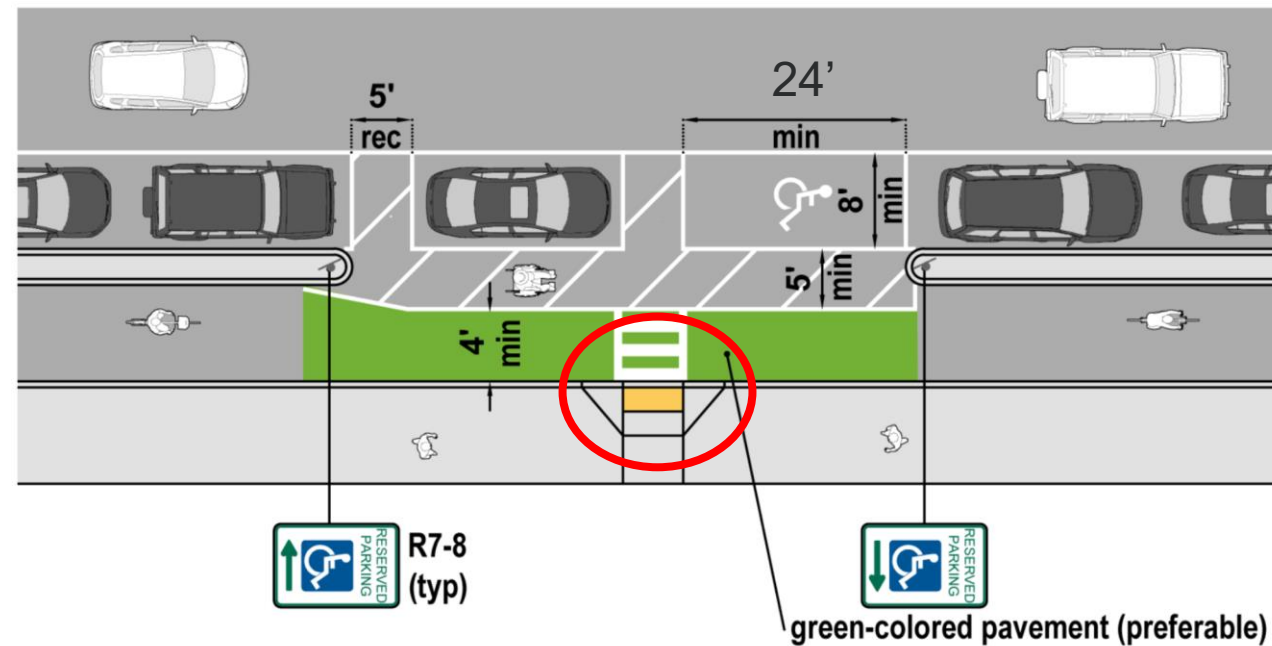
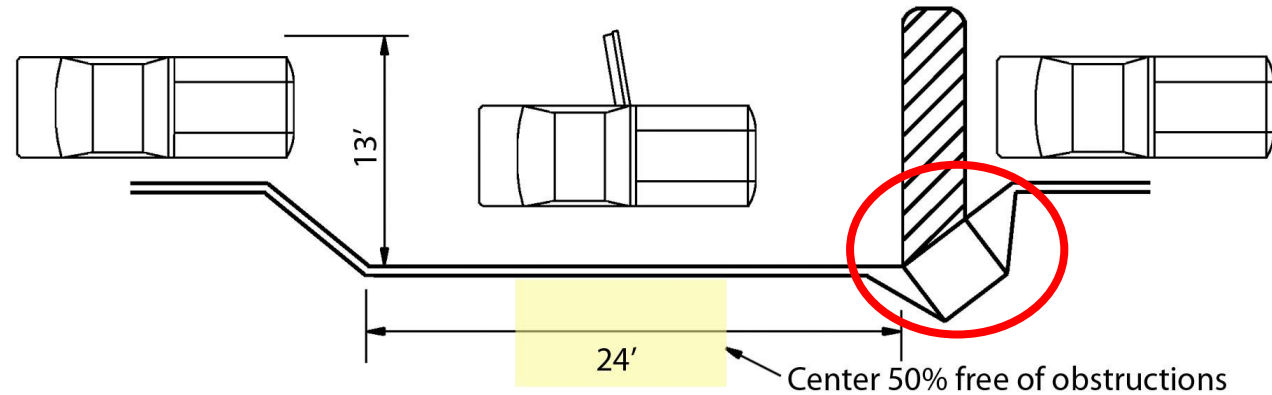
# Detectable Warning Surfaces

- Requires detectable warnings at driveway crossings with stop or yield control or traffic signals
- Concrete borders of 2" max now permitted around DWS



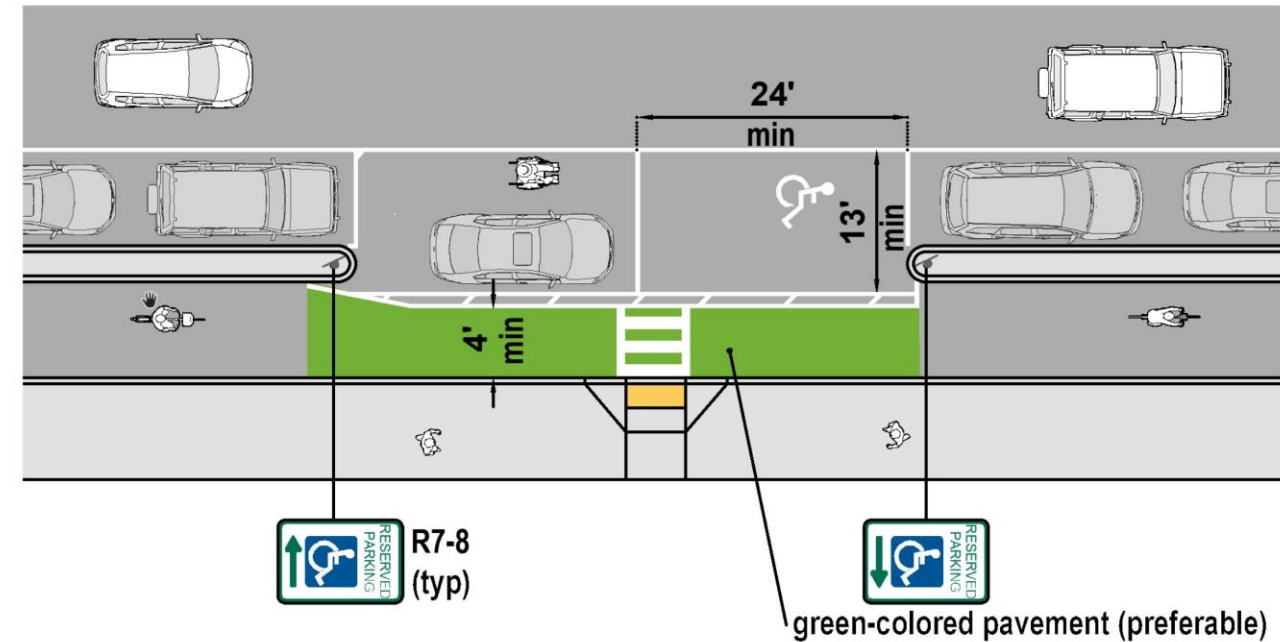
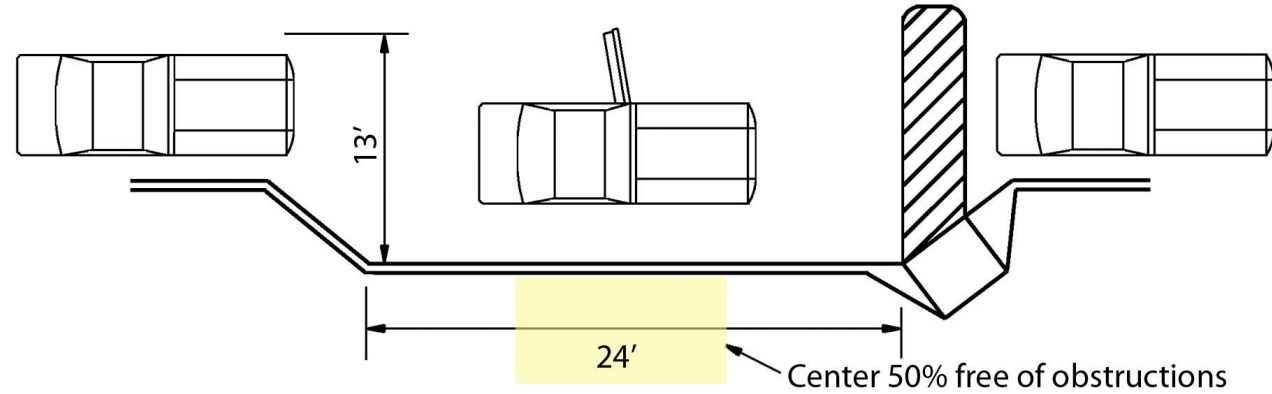
# Detectable Warning Surfaces

- Specifies that DWS are not required on curb ramps used exclusively to provide access between on-street parking aisles and passenger loading zones and PARs.



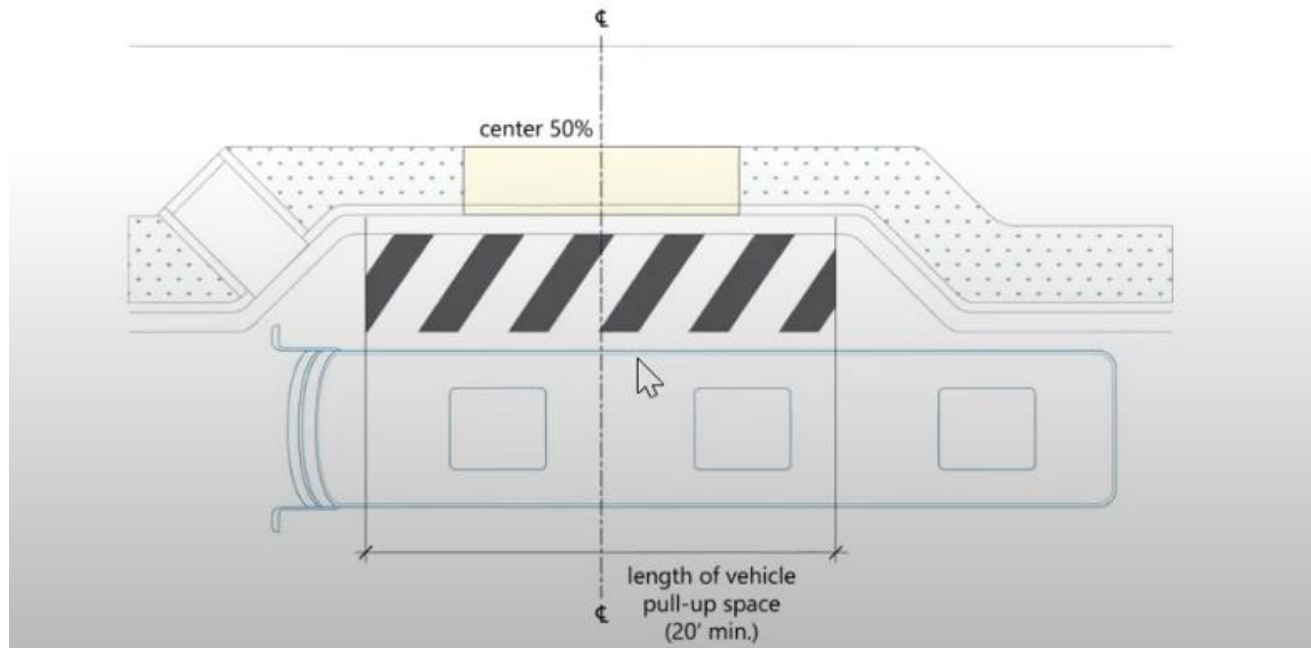
# Accessible Parking Spaces

- Accessible parallel parking spaces must be 13' wide x 24' long
  - Exception 1: Adjacent PAR not altered then width may match other parallel parking widths.
  - Exception 2: Insufficient ROW (9' from curb to ROW) in alteration project
  - For exceptions, spaces must be located nearest crosswalk
- Middle 50% of parking spaces must be free of obstructions
- Angled parking spaces must be 11' wide



# Passenger Loading Zones

- Similar to parking requirements
  - 8' wide pull up space, 20' length
  - 5' wide accessible aisle at the same elevation as loading zone
  - Same center 50% obstruction free requirement along sidewalk



# Parking and Passenger Loading Zones (Cont.)

- Metered or signed on-street shall provide the minimum number of accessible spaces on the block perimeter
  - Parking designated exclusively as residential or for commercial or law enforcement vehicles shall not be counted in number of spaces
  - Where spaces are altered, parking requirements are applicable only to the affected spaces until the minimum number spaces are provided
- At least one accessible loading zone shall be provided in every continuous 100 feet of loading zone space, or fraction thereof.

Total Number of Metered or Designated Parking Spaces	Minimum Required Number of Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 and over	4 percent of total

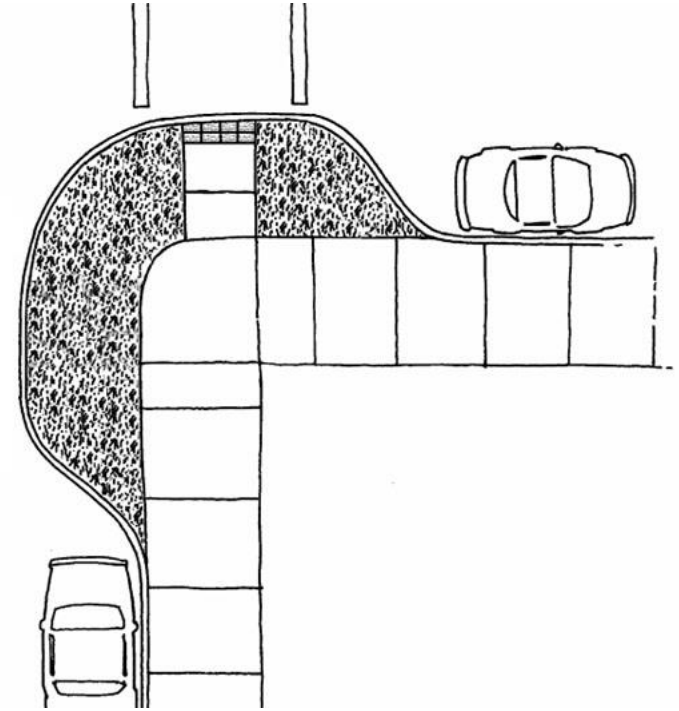
# Crosswalks

- Grade shall be 5% max. If superelevated may match the superelevation slope.
- Cross slope shall be 2.1% max at yield or stop controlled locations.
- Cross slope shall be 5% max at uncontrolled, signalized, or locations with PHBs.
- Cross slopes at midblock or roundabouts shall not exceed street grades.



# Crosswalks

- Where crossing is prohibited at intersections and roundabouts, curb ramps shall not be provided and the PAR must be separated from road by either:
  - landscaping (or other non-prepared surface)
  - a detectable vertical edge treatment with bottom edge 15" max above PAR





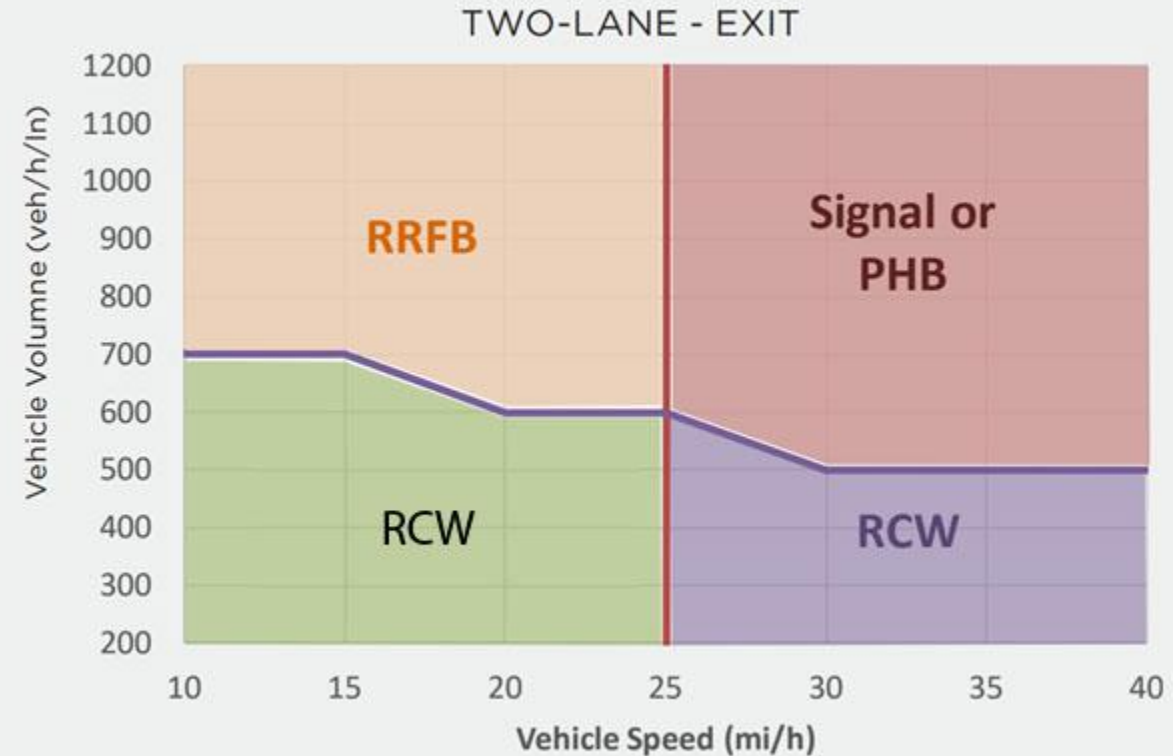
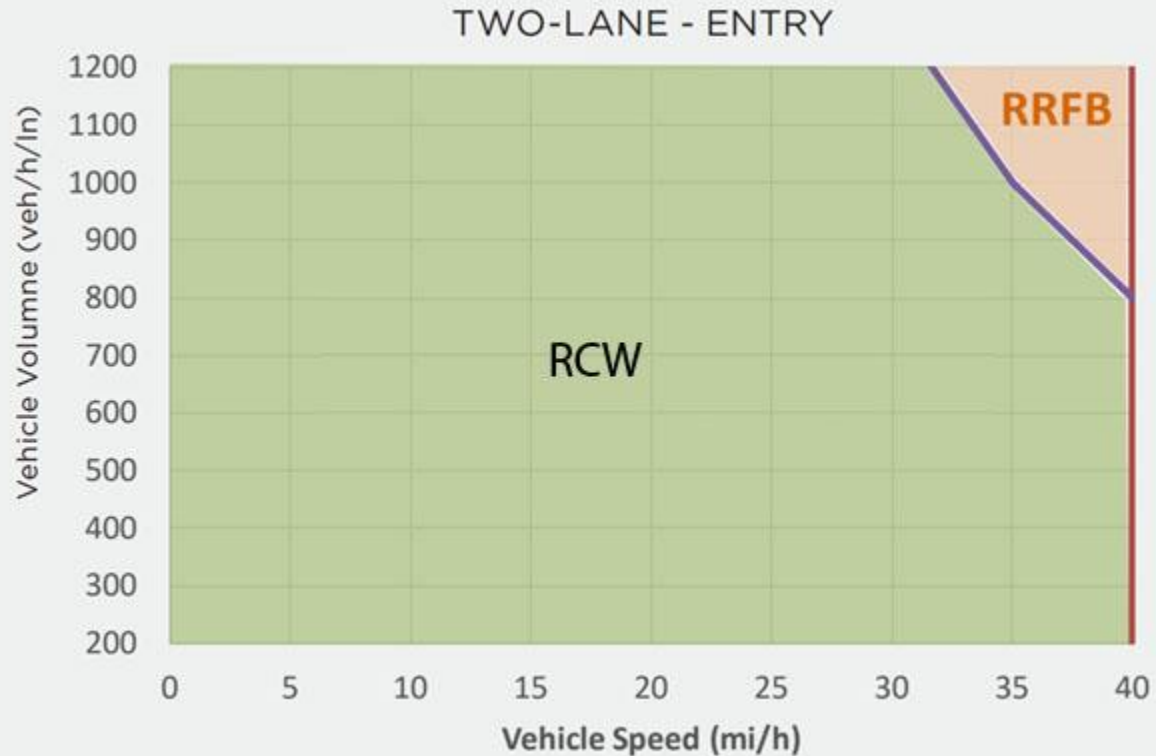
# Roundabouts and Channelized Turn Lanes

- At multi-lane segments of roundabouts and multi-lane channelized turn lanes, one or more of the following is required:
  - Traffic control signal with pedestrian signal head
  - Pedestrian hybrid beacon (PHB)
  - Rectangular rapid flashing beacon (RRFB)
  - Raised crosswalk



# Roundabouts and Channelized Turn Lanes

**FIGURE 5-15: CROSSWALK TREATMENT RECOMMENDATIONS FOR TWO-LANE ROUNDABOUTS IN LOW NOISE ENVIRONMENTS**



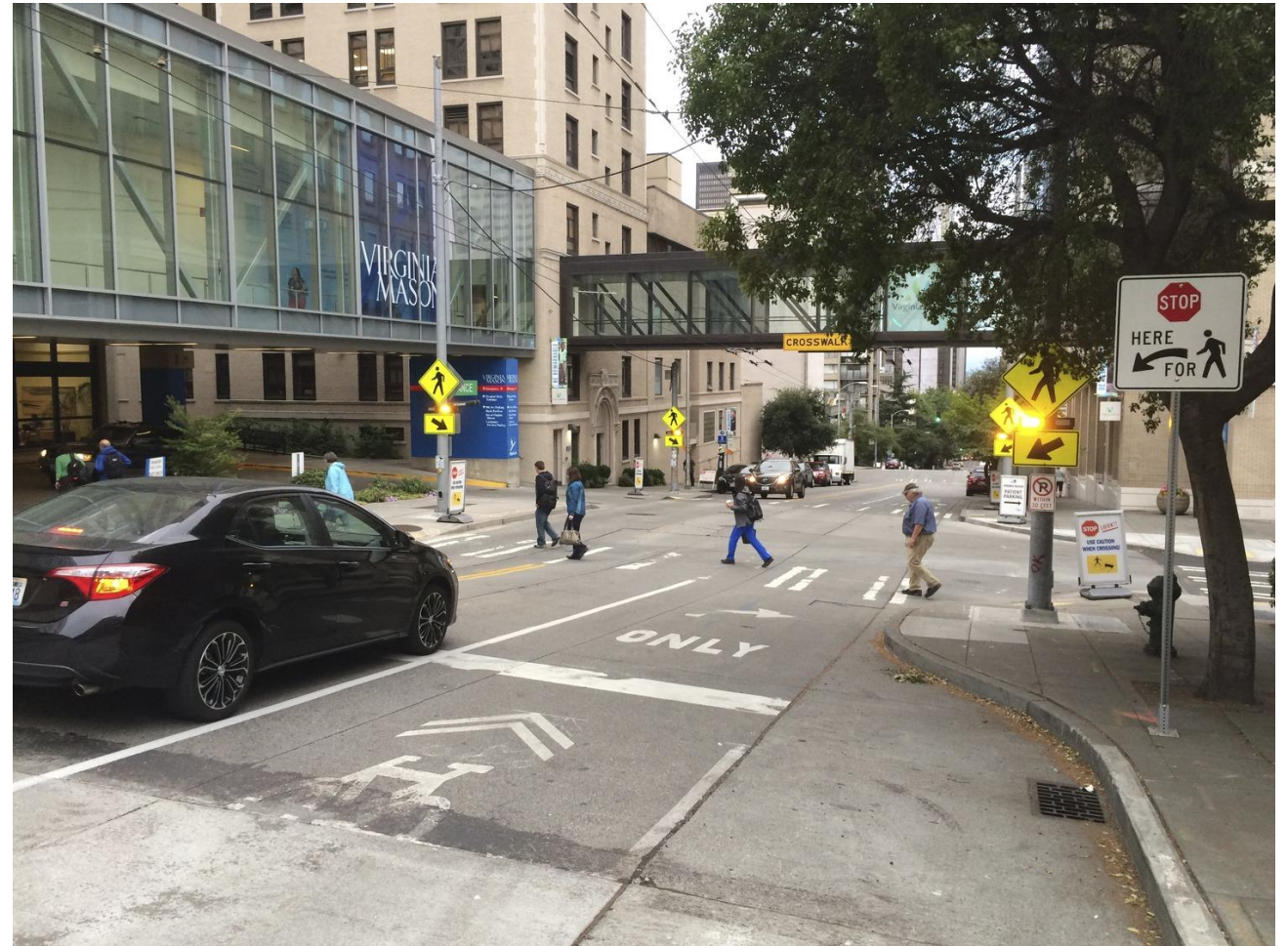
# Accessible Pedestrian Signals

- Signals with Pedestrian Signal Heads must have an accessible push button
  - Audible and Vibrotactile indication
  - Include a locator tone
  - Tactile arrow
- Access Board declined to provide guidelines on what alteration triggers APS installation.



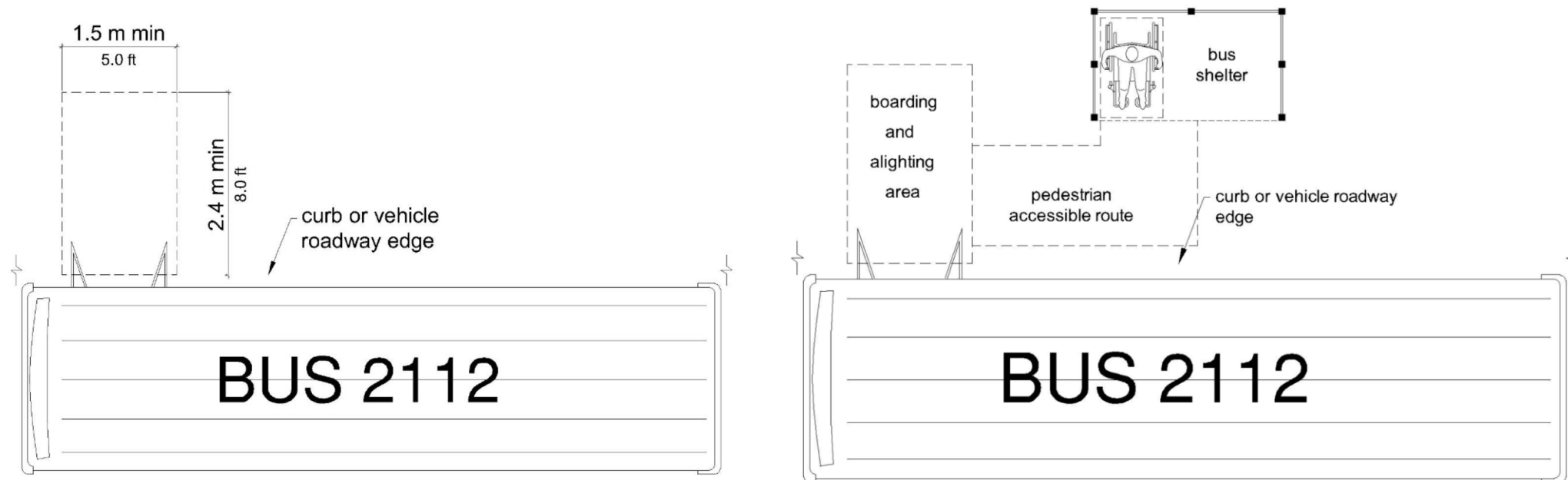
# Pedestrian Activated Warning Devices

- Pedestrian activated warning devices, e.g., RRFBs, require audible speech message indicating the status of the beacon
  - Push button activated, or
  - Passive detection



# Transit Stops & Transit Shelters

- Requires alternate transit stops if accessible transit stops are temporarily not accessible, e.g., due to construction
- Boarding and alighting area guidance and access to PAR consistent with draft PROWAG

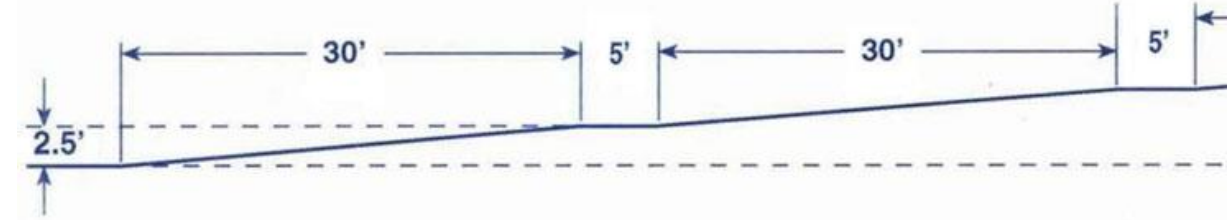


# Shared Use Paths

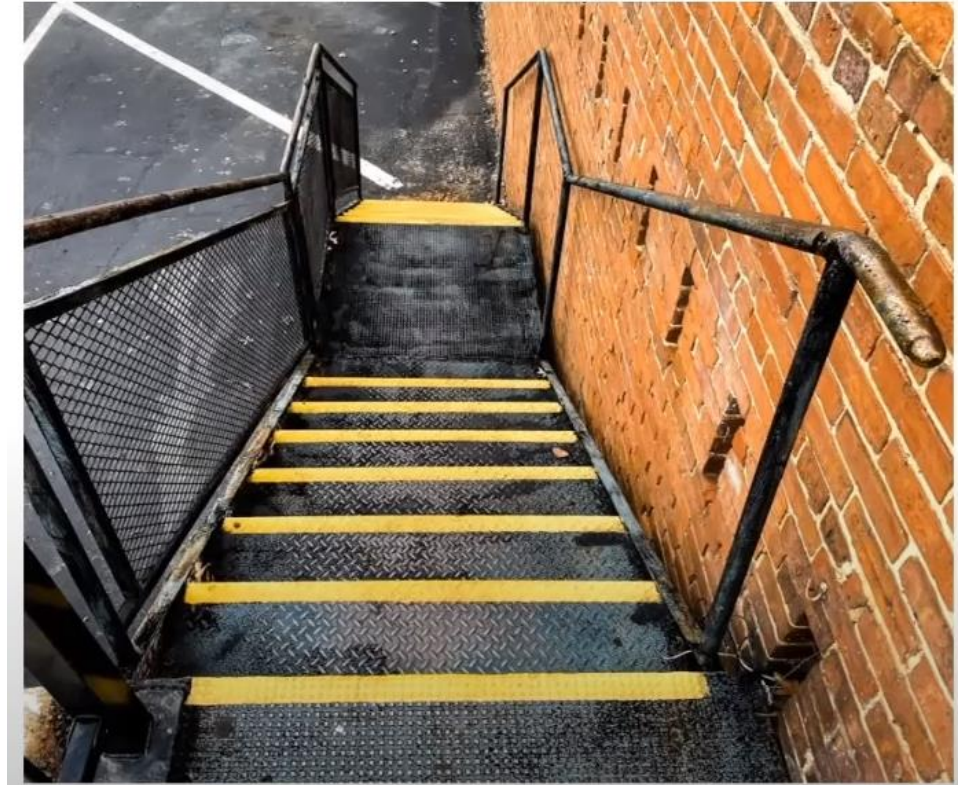
- Updates definition of “Shared use path” to emphasize transportation purpose
  - *A multi-use path designed primarily for use by bicyclists, pedestrians, and other authorized motorized and non-motorized users, for transportation purposes, and that may also be used for recreation. Shared use paths are physically separated from motor vehicle traffic by an open space or barrier and are either within the highway or other public right-of-way.*
- SUPs accessing overpasses and underpasses may exceed 5% slope if ramps and landings provided
- Permits bollards to prevent motor vehicle entry but must maintain 4’ clear width from each of bollard



# Ramps and Stairs



- Ramps rise of 30" max before landing
- Ramps require minimum clear width of 4' (i.e. between handrails if provided)
  - EXEPTION: Where a ramp only serves a building entrance, the clear width of the ramp run can be minimum 3'
- Stairs requires 1" wide visual contrast on treads & top landing



# PEDESTRIAN ACCESS ROUTES

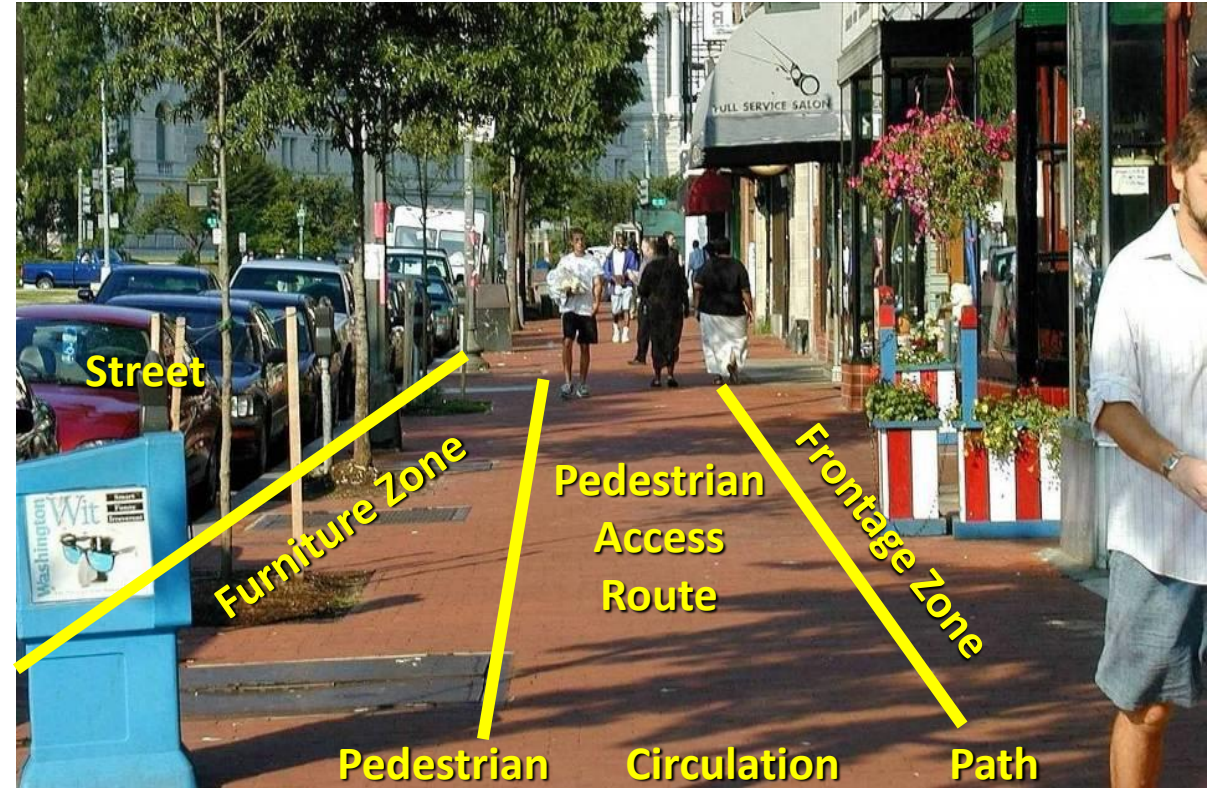
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# Key Terms

- **Pedestrian Access Route:** *An accessible, continuous, and unobstructed path of travel for use by pedestrians with disabilities within a pedestrian circulation path.*
- **Pedestrian Circulation Path:** *A prepared exterior or interior surface provided for pedestrian use in the public right-of-way.*
  - May or may not contain a pedestrian access route; required for new construction



# Scoping

- Pedestrian facilities must contain or connect to a pedestrian access route that meets the requirements in R302
- Pedestrian facilities include:
  - Sidewalks
  - Shared use paths
  - Paved shoulders
  - Curb ramps
  - Crosswalks
  - Medians and pedestrian refuge islands
  - Pedestrian at-grade rail crossings
  - Pedestrian overpasses and underpasses



Sidewalks



Shoulders

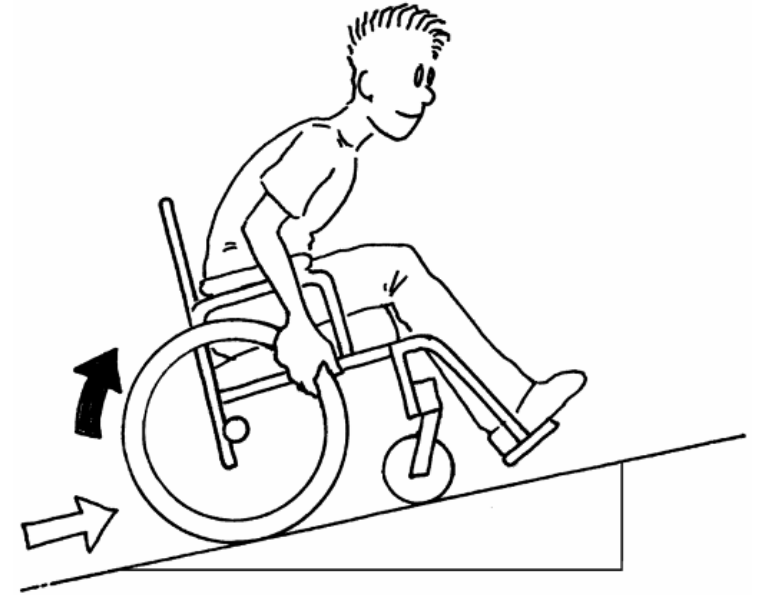
# Shoulders are not a suitable PAR in suburban & urban areas

'Goat trail' indicates need



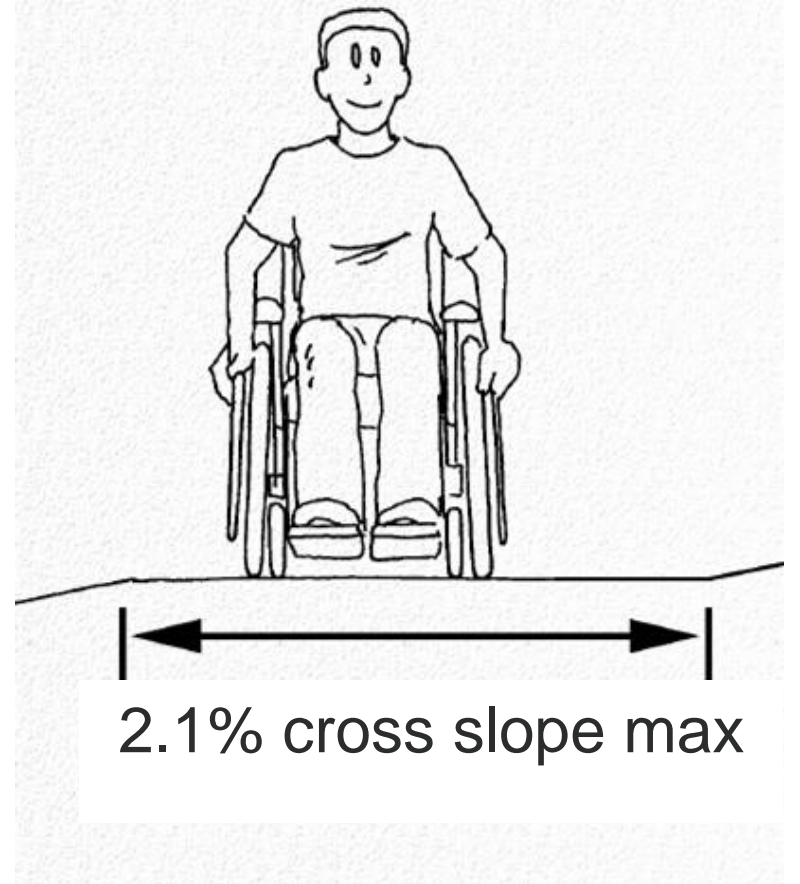
# Grade

- Running slope in direction of pedestrian travel
- Within street right-of-way, cannot exceed 5% or the grade of the adjacent street, whichever is greater
  - NOTE: PAR may be graded at 5% even if the adjacent street has grade less than 5%
- Outside street ROW, cannot exceed 5% grade
  - EXCEPTION: May exceed 5% in crosswalk if superelevation requires grade greater than 5%



# Cross Slope

- Slope perpendicular to the direction of pedestrian travel
- Max cross slope of 1:48 (2.1%)
  - EXCEPTION: Portion of PAR within street that connects an accessible parallel parking space to the nearest crosswalk does not need to meet cross slope requirements
  - EXCEPTION: Uncontrolled crosswalks, signalized intersections with a green phase, and midblock and roundabout crosswalks



# Surface Characteristics

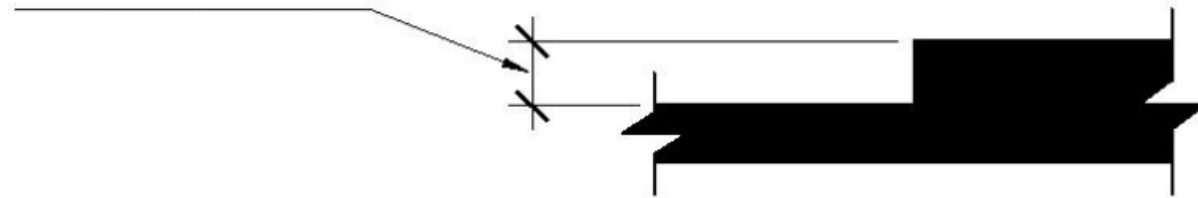
- Surface must be firm, stable, and slip resistant



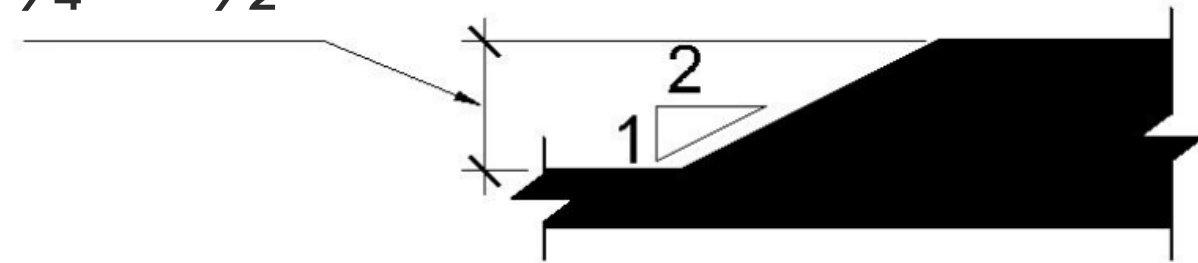
# Grade Breaks & Changes in Level

- Grade breaks must be flush
- Changes in level
  - 1/4" to 1/2" — Bevel required
  - 1/2" to 6" — Requires ramp with max slope 8.3%
  - Over 6" — Treat as ramp with max slope of 5%

1/4" MAX

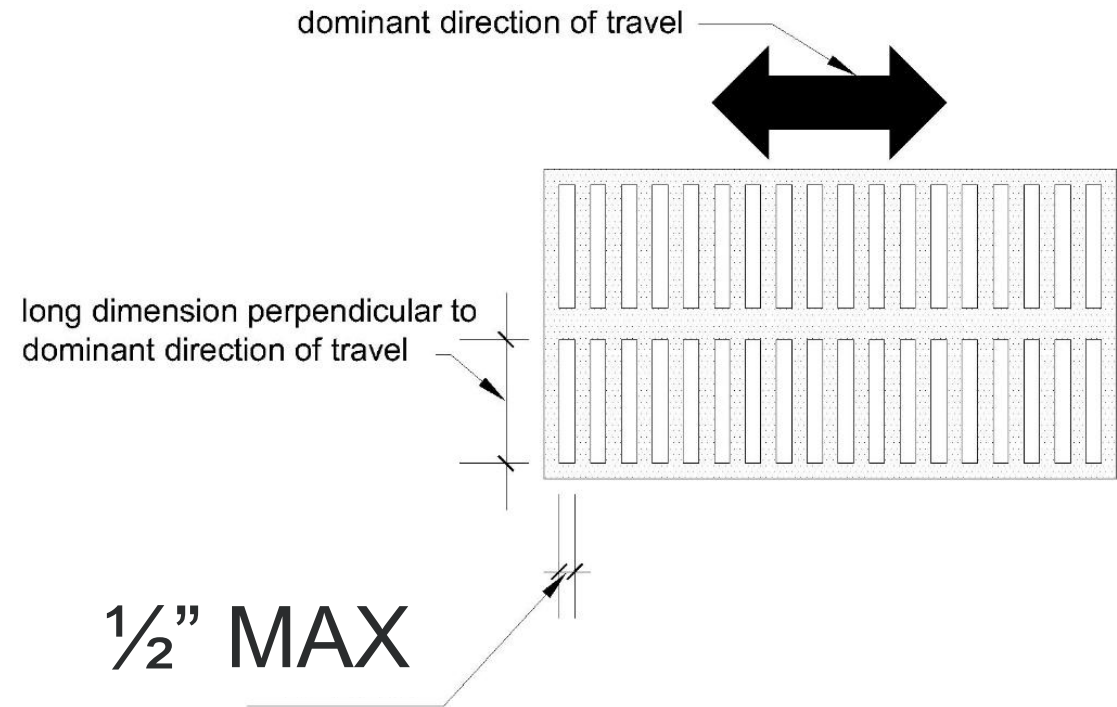


1/4" — 1/2"



# Horizontal Openings

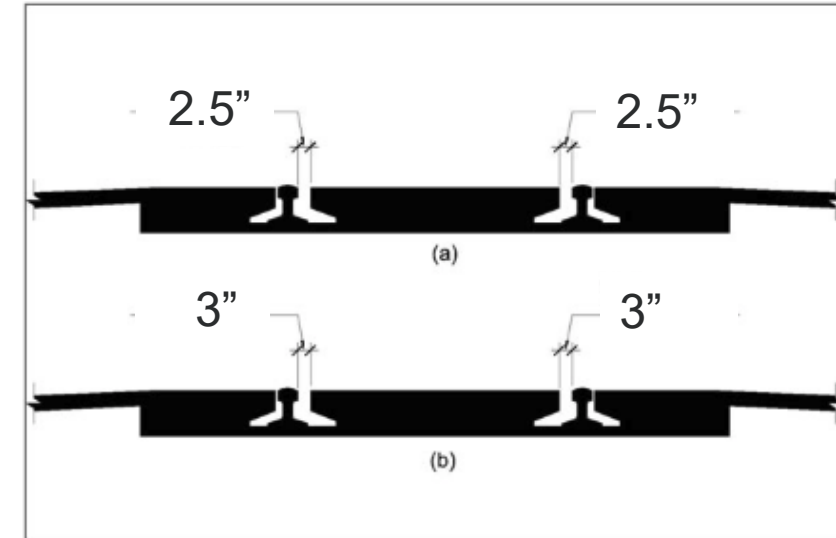
- Must not allow a sphere larger in diameter than  $\frac{1}{2}$ " can pass through
- Elongated openings meeting requirements allowed
  - NOT allowed where pedestrian access routes intersect
- Different guidance for railroad flangeway gaps





# Pedestrian At-Grade Rail Crossings

- Pedestrian access route shall be level and flush with top of rail at outer edge of rail
- Flangeway gaps: max 2.5" nonfreight tracks, max 3" freight tracks
- Detectable warning surfaces
  - At crossings not located within a street, DWS shall extend full width of ped circulation path
  - Shall be located on each side of rail crossing, 6' min and 15' max from centerline of nearest rail.
  - Where ped gates provided, DWS shall be placed on side of gate opposite rail and shall not overlap DWS



# Protruding Objects

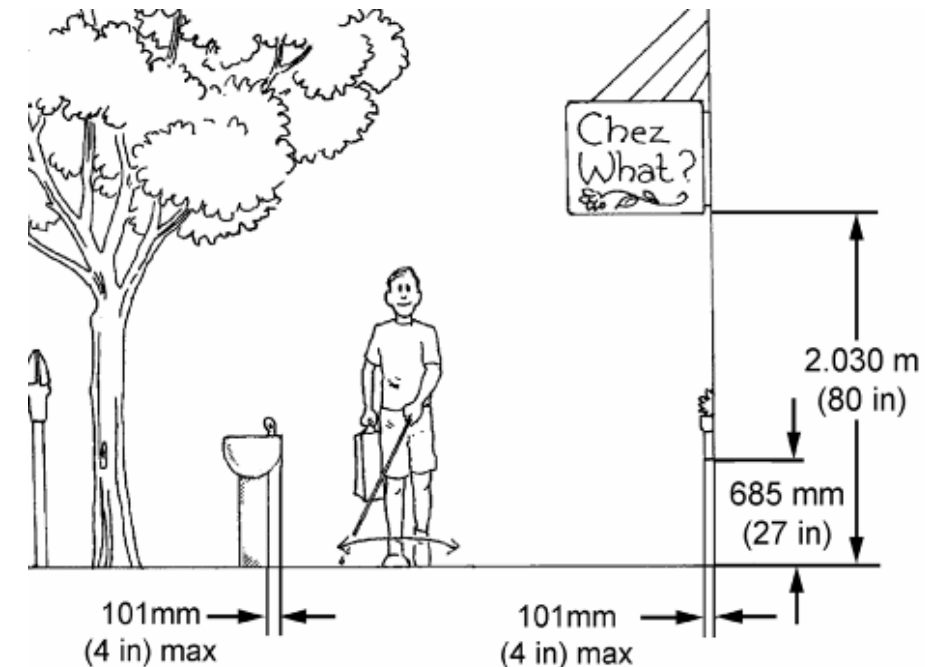
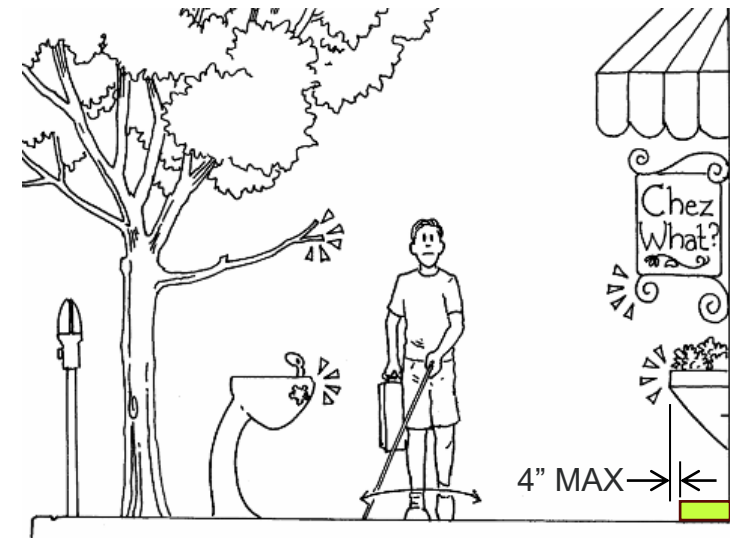
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- Objects 27" to 80" above ground are not detectable by cane
- Objects in furniture or frontage zones must not protrude more than 4"
  - Handrails can protrude 4-1/2" max
- Protruding objects may be protected by a barrier or curb that is at least 2-1/2" high



# Protruding Objects

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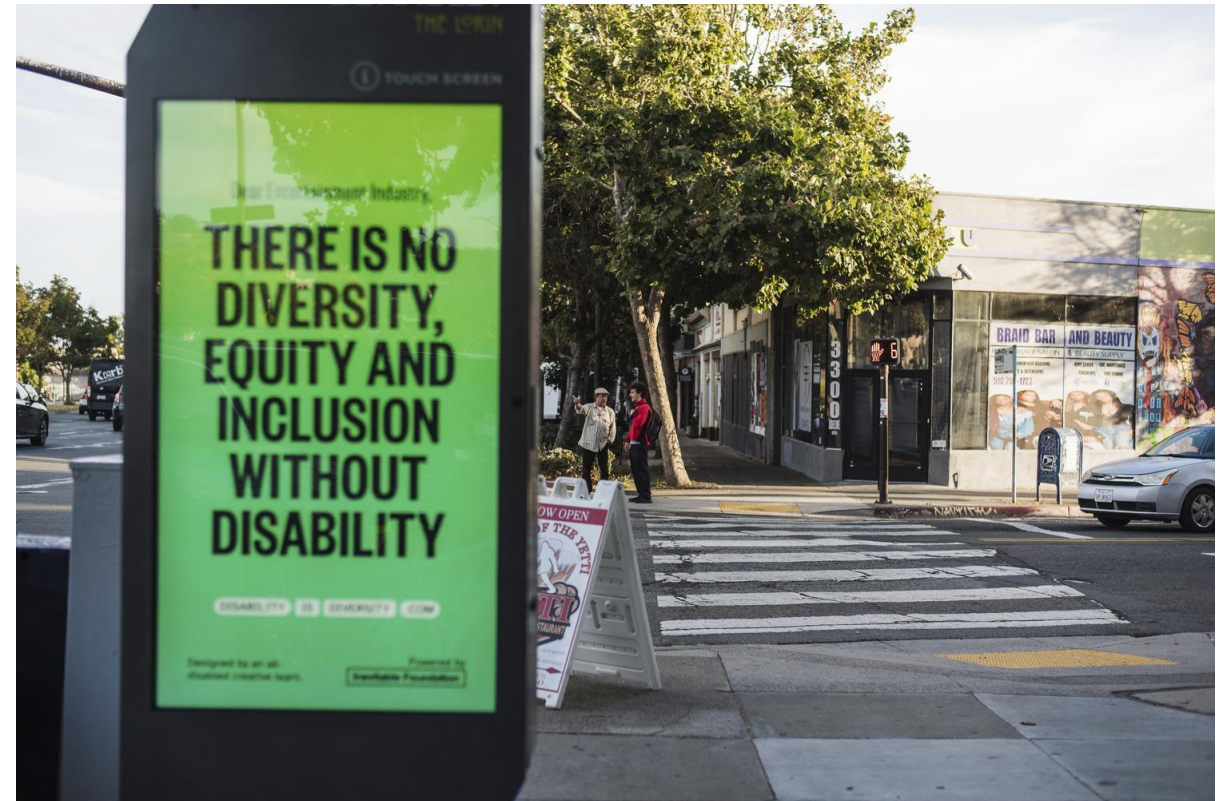


# WRAP UP



# Reminders!

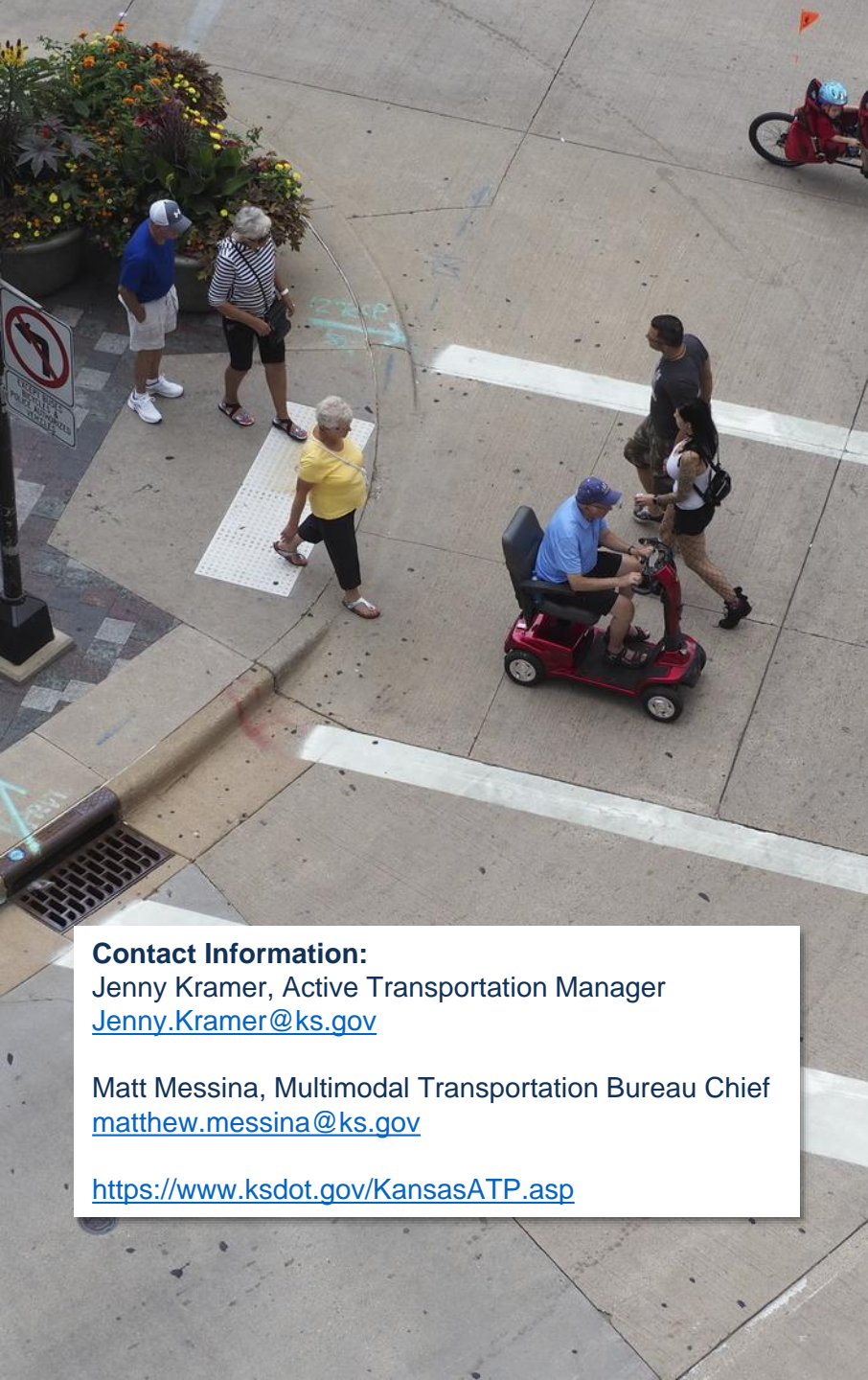
- **PROWAG establishes minimum standards.** We can and should go beyond these minimums.
- **PROWAG isn't comprehensive.** There are many accessibility issues that are not addressed or are not addressed completely.
- **Engaging people with disabilities is critical.** Engagement is especially important for projects that include non-conventional designs.



# Q&A

**Jeremy Chrzan, PE, PTOE,  
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**Jim Elliott, AICP**  
[jelliott@tooledesign.com](mailto:jelliott@tooledesign.com)



# WALK BIKE ROLL KANSAS

## VIRTUAL SERIES



# Thank you!

Virtual Walk Bike Roll Virtual Series

Stay Tuned for future  
webinars in 2024!

**Contact Information:**

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Matt Messina, Multimodal Transportation Bureau Chief  
[matthew.messina@ks.gov](mailto:matthew.messina@ks.gov)

<https://www.ksdot.gov/KansasATP.asp>

