The Human Factor:
- 1 of 5 Americans currently live with a Disability.
- Barriers prevent the disabled from safe travel.
  - Barriers also decrease safety for various other users.
  - Excessive cross-slopes make travel exhausting to impossible.
  - 3% cross-slope requires 50% more exertion on a wheelchair user's countering arm. Think about pushing a wheel barrel overloaded on one side.

The Legal Factor:
- Failure to Comply has resulted in agencies nationwide receiving Court mandates to allocate up to 20% of their annual budgets to ADA improvements.

DISCLAIMER:
The teachings contained here within this presentation are derived from guidance published by the United States of America Access Board, and can be found within the document title “Public Rights-of-Way Accessibilities Guidelines” (PROWAG) version 2011. As current, the proposed guidelines are currently waiting official legislation to enact them as ‘Law’. The American Concrete Pavement Association offers this presentation as our view and understanding of the proposed guidelines, but disclaims any, and all, liability regarding the application of these thoughts. PROWAG is a federal publication, and as such, is generally created to express the ‘minimum’ for compliance. Agencies throughout the country may at any time choose to propose their own set of rules that meet, or exceed, those established by the federal government. The material, thoughts, and opinions contained here within are only thoughts and opinions of the presenters themselves, and in no way should be construed as legal absolutions.
In accordance with federal law, this transition plan must include a schedule for providing access features, including curb ramps for sidewalks, 28 CFR § 35.150(d). The schedule should first provide for pedestrian access upgrades to State and local government offices and facilities, transportation, places of public accommodation, and employers, followed by sidewalks serving other areas. 28 CFR § 35.150(d)(2). The transition plan should accomplish the following:

• Identify physical obstacles in the public agency’s facilities that limit the accessibility of its programs or activities to individuals with disabilities;
• Describe in detail the methods that will be used to make the facilities accessible;
• Specify the schedule for taking the steps necessary to upgrade pedestrian access to meet ADA and Section 504 requirements in each year following the transition plan; and
• Indicate the official responsible for implementation of the plan. 28 CFR § 35.150(d)(3).

**Does That Mean The Sidewalks & Shared Use Paths Must Comply too...?**

In 2001, a three-judge panel of the United States Court of Appeals for the Ninth Circuit ruled, in the case Bostic v. City of Sacramento, that sidewalks installed and maintained by local governments must be accessible to persons with disabilities under the Americans with Disabilities Act (ADA). (The Ninth Circuit serves the state of Washington.) Under the decision, the city of Sacramento, California was ordered that not only must it provide curb ramps at intersections on newly-constructed or remodeled roadways and sidewalks, it must have a program which will assure the accessibility of all its sidewalks between such ramps. The ruling meant that governments will be obligated to remove barriers from their sidewalks, such as benches, wires, cracks, breaks and sign posts. If their presence poses a barrier to the accessibility of the sidewalks to, for example, persons using wheelchairs or those with sight impairments. The decision is based upon the court holding that the operation of sidewalks as a service and “a useful, program or activity” under the ADA and that maintaining a public sidewalk is a “natural function of a governmental entity.” The city appealed the decision to the United States Supreme Court which in June 2003 rejected the appeal without comment.
PRETTY GOOD – JUST ONE ERROR – WHO CAN FIND IT..........?

HERE IS WHY YOU DON’T SEE MORE WHEELCHAIR USERS ON THE SIDEWALK

• Sometimes 95% right is 'technically speaking' way wrong?
**ADAAG vs PROWAG**

**Two Books – Two Very Different Outcomes!!!**

- **Americans with Disabilities Act Accessibility Guidelines (ADAAG)**
  - First rules published and enforced for R/W construction but were largely designed for buildings and building access.

- **Public Rights-of-Way Accessibility Guidelines (PROWAG)**
  - Second set of rules/guidance published and was specific to R/W facilities and provided for terrain tolerances!

**“Learning to Speak the Language - Common Terminology”**

- Pedestrian Access Route (PAR)
- Curb Ramp
- Ramp
- Grade Break
- Running Slope
- Cross Slope
- Street Crossings
- Detectible Warning
- Turning Space
- Clear Space
- Tabled Roadway
- Transitional Segments

**I Know What You’re Thinking**

**Job Security on the Left 😊**

**PAR**

- Pedestrian Access Route is the pedestrians equivalent of a traffic lane.
- PAR is a 4 foot “MINIMUM” wide “CLEAR” path that is continuous through side streets, driveways, medians, curbs, grass, roadways, etc.

**Does This Make Sense?**

- The
**General Requirements**

- **Surfacings:** PROWAG requires all surfaces to be firm, stable, and slip resistant (R302.7).
- **Changes in Level:** Changes in level, including bumps, utility castings, expansion joints, etc., shall be a maximum of 1/4 inch without a bevel or up to 1/2 inch with a 2:1 bevel. Where a bevel is provided, the entire vertical surface of the discontinuity shall be beveled (R302.7.2).

**Curb Ramps – Technical Requirements**

- **Cross Slope:** The maximum cross slope is 2.0% with a surface of curb ramp runs and turning spaces. (R304.5.2)

**Curb Ramp Anatomy**

- **Curb Ramps Include the Following Parts:**
  - **Landings?**
  - **Perpendicular Ramps = Landing at Top**
  - **Parallel Ramps = Landing at Bottom**
  - **Clear Spaces (4’ X 4’ Minimum)**
  - **Domes (2’ Deep, Entire Width of the Opening)**
  - **Ramp (8.33% Maximum Running Slope “unless” greater than 15 feet)**
  - **Grade Break (one at the top and one at the bottom of every ramp)**
  - **Turning Spaces (2% X 2% at Stop Controlled Intersection, 5% X 5% at Signalized or Free Flow Intersections)**
  - **Sometimes Flares (10% maximum – if needed)**
  - **Sometimes Curbs (To Help with Direction or Hold Grade)**

**Does Ramp Width “Have To” = Walk Width**

- **No – not in the Public Right of Way Circulation Paths (Sidewalk PAR’s)**
- **Per PROWAG – Only on Shared Use Paths does the Ramp or Blended Transition Have to Equal the Width of the SUP**

**DOES REQUIREMENTS**

- **Running Slope:** Provide curb ramps with a target running slope of 6.25% and a maximum slope of 8.3%; however, curb ramps are not required to be longer than 15 feet, regardless of the resulting slope. (R304.2.2 and R304.3.2)

- **Width:** The minimum width of a curb ramp is 4 feet, excluding curbs and flares. If the sidewalk facility is wider than 4 feet, the target value for the curb ramp is equal to the width of the sidewalk. (R304.5.1)

- **Grade Breaks:** Grade breaks at the top and bottom of curb ramp runs must be perpendicular to the direction of the curb ramp run. Grade breaks are not allowed on the surface of curb ramp runs and turning spaces. (R304.5.2)
**Grade Break(s)**

- A Construction Joint, Perpendicular to the Pedestrian Path of Travel, that signifies the beginning and ending of the ramp slabs.

**Running Slope**

- The slope or grade parallel to the direction of pedestrian travel
- When building in the R/W, Grade of Pedestrian Access Route can equal the General Grade of the Adjacent Roadway
- On Ramps, the Running Slope is between 5% and 8.333% maximum, unless you are chasing grade, in which the ramp only needs to be 15+ Feet and the grade can then exceed 8.333%

**Cross Slope**

The Slope or Grade perpendicular to pedestrian travel.

- 2% or less everywhere except:
  - Allowable 5% cross slope at street crossings without yield or stop control.
  - At Midblock Crossings Only – Cross slope of Ramp can equal Grade of road.

**Pedestrian Street Crossing**

- Cross Slope:
  The longitudinal grade of a street becomes the cross slope for a pedestrian street crossing.

- 1) Intersection Legs with Stop or Yield Control:
  For pedestrian street crossings across an intersection leg with full stop or yield control (stop sign or yield sign), the maximum cross slope is 2.0% (maximum 2.0% street grade through the crossing).

- 2) Intersection Legs without Stop or Yield Control:
  For pedestrian street crossings across an intersection leg where vehicles may proceed without slowing or stopping (uncontrolled or signalized), the maximum cross slope of the pedestrian street crossing is 5.0%.

- 3) Midblock Pedestrian Street Crossings:
  At midblock crossings, the cross slope of the pedestrian street crossing is allowed to equal the street grade.
BE CAREFUL....!!!!

• If you build the bottom two instead of allowing both street crossings – The United States Access Board says you must install a sign prohibiting anyone from crossing at this location.

Detectable Warning

• Color of Mat Must Contrast to Surroundings
• Must Cover Entire Width of Opening (2" boarder allowance)
• Placed at back of curb when on radius, a face of curb when in a cut through median
• Must be 2 Feet Deep Across "Entire" Opening

Domes on Ramp vs Radius

Domes are placed on the lower landing Radius when the distance from Domes to Ramp is greater than 5 feet. When this is required, the bottom grade break starts behind the domes, and thus – the domes are on a flat plane (2% x 2% or 5% x 5% max)

Domes are placed on the Ramp when the furthest distance from bottom of ramp to face of curb is less than 5 feet. Here, the bottom grade break starts in front of the domes.
A Closer Look at Domes on the Radius

Turning Space

- A 2% X 2% maximum sloped space at stop or yield controlled intersections to allow user to change directions on a relatively level surface.
- A 5% X 5% maximum sloped space at intersections without stop or yield control.

Clear Space

- R304.5.5 Clear Space.

Beyond the bottom grade break, a clear space 1.2 m (4.0 ft) minimum by 1.2 m (4.0 ft) minimum shall be provided within the width of the pedestrian street crossing and wholly outside the parallel vehicle travel lane.

Tabled Roadway

The act of breaking the grade of a roadway to allow for an accessible pedestrian route to safely cross.
The requirements in the proposed guidelines in Table 2 will have no impacts on state and local transportation departments compared to the requirements in the DOJ 2010 Standards and industry practices, except for the 2 percent maximum cross slope requirement for pedestrian access routes contained within pedestrian street crossings with stop or yield control where vehicles slow or stop before proceeding through the intersection (see R204.3 and R302.6). This requirement will have more than minimal impacts on the design and construction of new tabled intersections in hilly urban areas that contain pedestrian street crossings with stop or yield control.

TRANSITIONAL SEGMENTS

R202.3.2 Transitional Segments. Transitional segments of pedestrian access routes shall connect to existing unaltered segments of pedestrian circulation paths and shall comply with R302 to the extent practicable.

WHAT ABOUT A ROUNDABOUT?
WHAT ABOUT TRAILS & SUP’S……?

Yup! ADA Compliance Matters Here Too

WE CAN’T HAVE THIS EITHER……? TRAILS REALLY NEED TO BE CONCRETE IF WE WANT TO KEEP ADA COMPLIANCE

HELPFUL TOOLS AND LESSONS LEARNED

• Always double check the setting on your smart level – some default to degrees instead of percent………expensive mistake. MUST BE SET TO “PERCENT”

GOOD             BAD

Push Button Location

• Placed 1.5 Feet – 6 Feet from Crosswalk Entrance
• Maximum 5 Feet Offset from Crosswalk Entrance
• 10 Feet Separation from Each other if more than one is needed.
• Button must be on MoDOT’s approved products list.
THE GOOD, THE BAD & THE UGLY

CAN A WHEELCHAIR FIT THROUGH?

BECAUSE ACCESS IS A UTILITY!

TRY AND ‘C’(

the heck?

**Wish we had corner access**

**Excessive overlays can leave us swimming in noncompliance....!**

**Ultimate goal - We can get there!**

**Session 2 of our 2 part ADA series**

- Will focus on how the ADA is being implemented in Wisconsin
- Will highlight how Missouri is using innovative job special provision & standard drawings to maximize cost effective compliance
- Will walk through a curb ramp layout example
- Will showcase a ADA quick reference guide that will be made available to all registrants
"Life, Liberty and the Pursuit of Happiness......For All"

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