

Pedestrian Safety and Accessibility in Work Zones



Pedestrian Safety and Accessibility in Work Zones

Eryn Fletcher / Senior TE, FHWA
John Wright / Dir. of Hwy Design, INDOT

March 10, 2015



Pedestrian Safety in Work Zones

What are we going to learn today?

- **Why** pedestrian safety and accessibility must be provided
- **Present**, Current state of practice
- **How**, MUTCD & PROWAG requirements
- **Future**, Where we are going
 - INDOT standards development,
 - Standard pay items



Disability Statistics

- **Hearing Disabilities** **7.5 Million people**
- **Vision Disabilities** **8.1 Million people**
- **Walking** **30.5 Million people**
 - 3.6 Million use wheelchairs
 - 11.6 Million used cane/ crutches/ walkers



70%



Question

**According to the 2010 Census,
what percent of the U.S.
population over the age of 15 has
a disability?**

21%



Pedestrian Safety in Work Zones

Safety (NHTSA Traffic Safety Facts)

- In 2012, 4,743 people were killed in pedestrian/motor vehicle crashes (12/day). 76,000 reported pedestrian injuries.

Six most frequent sources of injury

1. Tripped on uneven/cracked sidewalk
2. Tripped/fell
3. Hit by car
4. Wildlife/pets involved
5. Tripped on stone
6. Stepped in a hole



Why Pedestrian safety in Work Zones?

1. Safety of Pedestrians



Why Pedestrian safety in Work Zones?

2. Business Impact

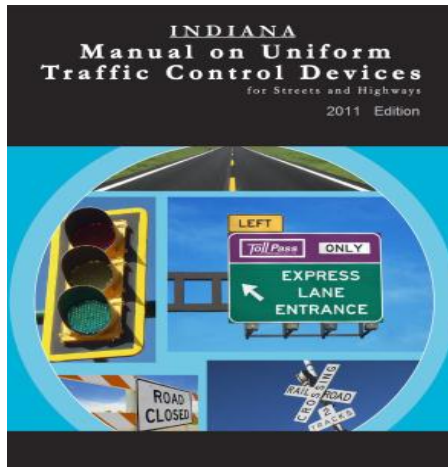


Why Pedestrian safety in Work Zones?

3. It's The Law →



IMUTCD



ADA compliance



Signing of the Americans with Disabilities Act in the spring of 1990



Pedestrian Safety in Work Zones

Law

- **2009 MUTCD**
 - If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided.
- **Americans with Disabilities Act of 1990 (ADA)**
 - ADA requires that pedestrians with physical and/or mental disabilities be accommodated during times of construction.

Because it's the LAW!!!



Pedestrian Safety in Work Zones

4. Professional Engineer's obligation

AASHTO 2011 Green Book

*Because of the demands of vehicular traffic in congested areas, it is often extremely difficult to make adequate provisions for pedestrians. Yet this **should be done, because pedestrians are the lifeblood of our urban areas...***



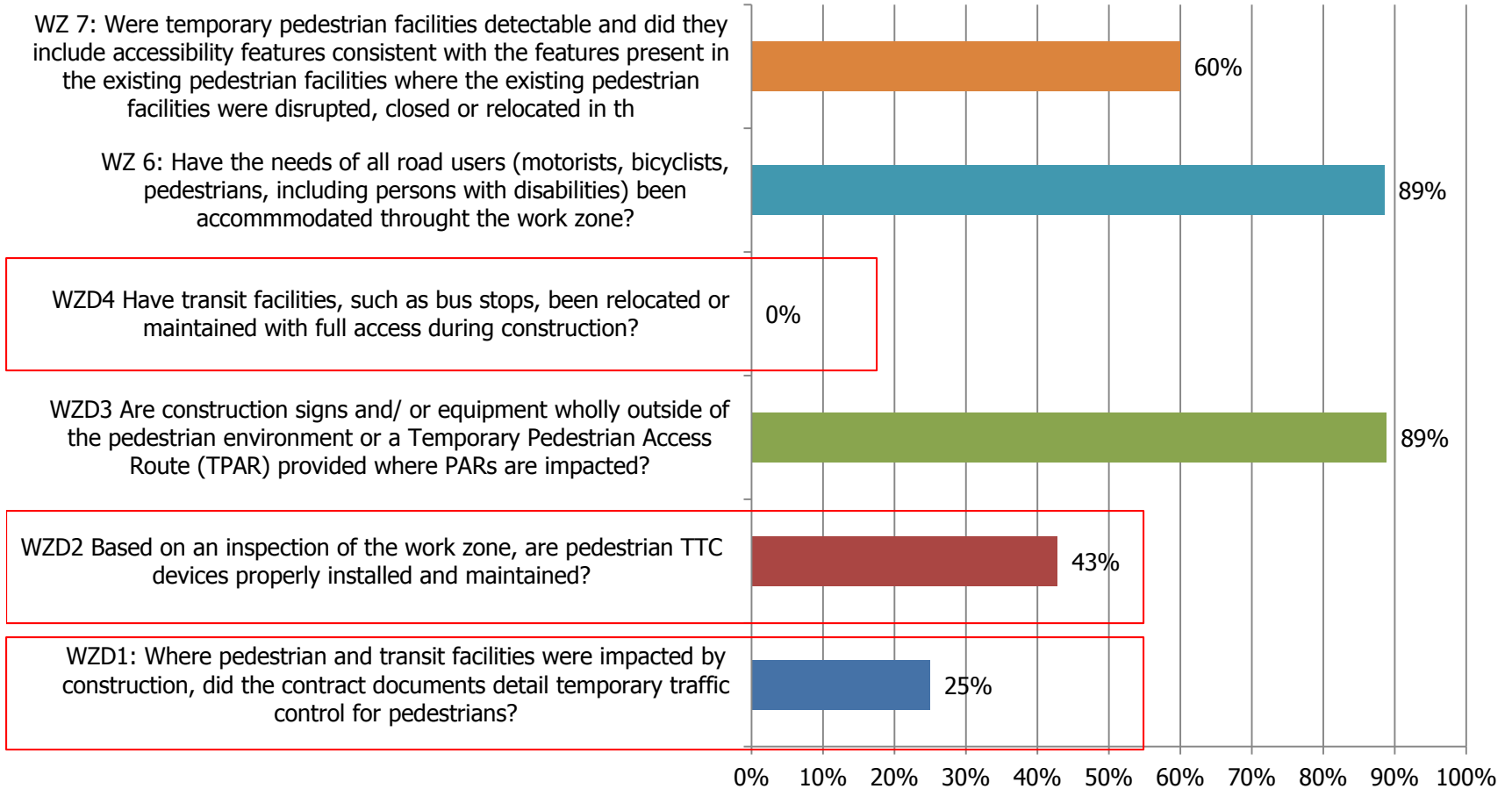
Current State of practice

We know it's the law, so how are we doing?



Current State of Practice

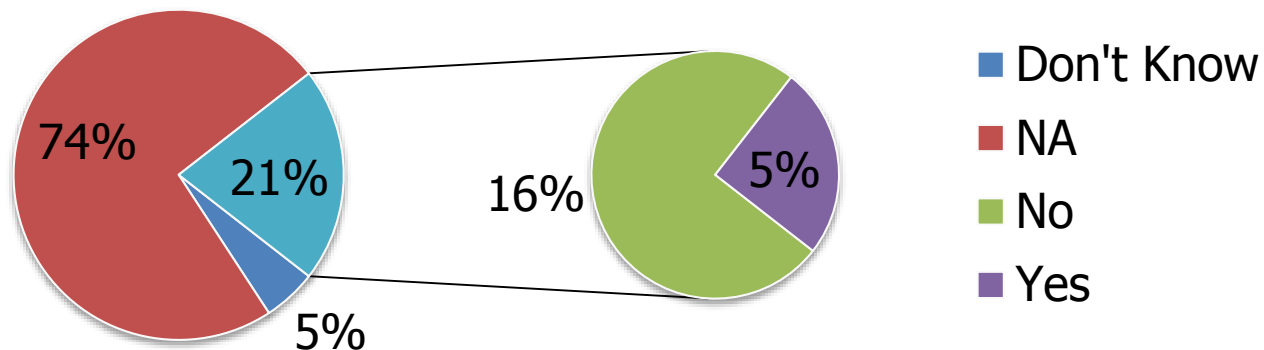
FHWA Compliance Assessment Program 2014



Current State of Practice

Design

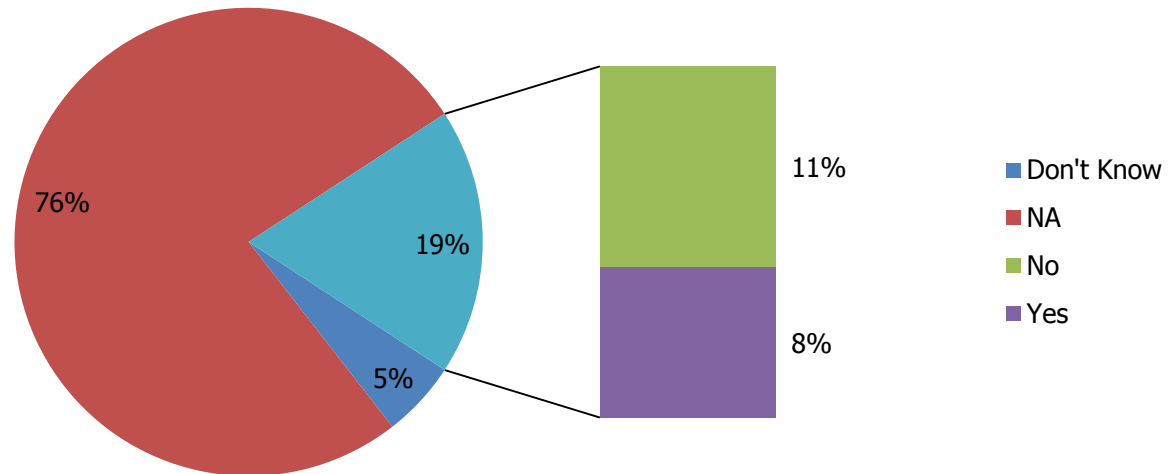
WZD1: Where pedestrian and transit facilities were impacted by construction, did the contract documents detail temporary traffic control for pedestrians?



Current State of Practice

Construction

WZD2 Based on an inspection of the work zone, are pedestrian TTC devices properly installed and maintained?



Current State of Practice

- In short, we have a lot of opportunity in this area...



MUTCD and PROWAG

Here's Johnny.....



R205 Construction Work Zones - Pedestrian Access Routes

- **Unfortunately, too many bad examples...**



PROWAG History

- US Access Board began work on public ROW guidelines (PROWAG) to suppl. ADAAG in 1992
- Section 14 (NPRM 2002/IFR 1994)
- Sidewalk video and design manual (1997)
- Advisory committee (1999)
- PROWAAC report (2001)
- PROWAG (1st Draft) June 2002
- Revised PROWAG (2nd Draft) November 2005
- Revised PROWAG July 2011
- New PROWAG 2015 ??



PROWAG Organization

PROWAG - Organization

- **R1 Application and Administration**

- **R2 Scoping Requirements**

- **R3 Technical Provisions**

 - Pedestrian access route (PAR)

 - Alternate circulation path

 - Curb ramps and blended transitions

 - Detectable warning surfaces

 - Pedestrian crossings

 - Accessible pedestrian signals (APS)

 - Street furniture

 - On-street parking

- **R4 Supplementary Tech provisions (from ADA/ABA-AG)**

 - Protruding objects, clear space, reach, etc

PROWAG Sections

***apply to permanent
accessibility and temporary
accessibility during
construction***



MOT R205 Alternate Pedestrian Access Route

*

Reference	Title
PROWAG R205	Alternate Pedestrian Access Routes (2005 PROWAG provided MUTCD guidance in R302, but this has been removed in the latest version)
IMUTCD 6D.01 IMUTCD 6D.02	Pedestrian Considerations Accessibility Considerations
IMUTCD 6F.63 IMUTCD 6F.68 IMUTCD 6F.70 IMUTCD 6F.71	Channelizing Devices, Barricades, TTB as Channelizing Devices, Longitudinal Channelizing Devices
IMUTCD 6F.74	Detectable Edging for Pedestrians
IMUTCD 6G.05	Work Affecting Pedestrians and Bicycle Facilities
IMUTCD 6H-28 IMUTCD 6H-29	Sidewalk Detour or Diversion Crosswalk Closures and Pedestrian Detours



MOT R205 Alternate Pedestrian Access Route

- * R205 - Alternate Pedestrian Access Route is required when an existing pedestrian circulation path is temporarily closed by construction, alteration, maintenance, or other condition.



Pedestrian Safety in Work Zones

* Temporary Traffic Control Considerations

Three basic pedestrian considerations when designing and implementing temporary traffic control (TTC) plans.



Pedestrian Safety in Work Zones

Basic Consideration 1

1. “Pedestrians should not be led into direct conflicts with work site vehicles, equipment, or operations.” ^①

Avoid conflicts with the work site

^① *MUTCD Chapter 6D.01*



Pedestrian Safety in Work Zones

Basic Consideration 2

2. "Pedestrians should not be led into direct conflicts with mainline traffic moving through or around the work site." ①

Avoid conflicts with motorists

① *MUTCD Chapter 6D.01*



Pedestrian Safety in Work Zones

Basic Consideration 3

3. “Pedestrians should be provided with a reasonably safe, convenient, and accessible path that replicates as nearly as practical the most desirable characteristics of the existing sidewalk(s) or footpath(s).” ①

Provide safe, convenient, path matching accessibility characteristics of the existing sidewalk



① *MUTCD Chapter 6D.01*



Pedestrian Safety in Work Zones

Planning Pedestrian Temporary traffic Control

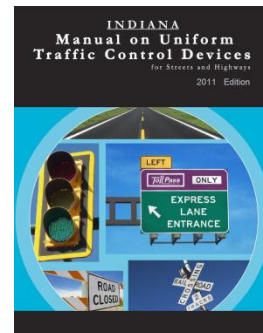
- Plan early
 - Identify needs:
 - Presence of pedestrian facilities ?
 - Impact on significant pedestrian generators
- Special Considerations should include;**
- School children,*
 - Elderly*
 - Individuals with disabilities*
- Transit facilities within the project limits?



MOT R205 Alternate Pedestrian Access Route

Planning Pedestrian Temporary Traffic Control

1. Temporary Traffic Control (TTC) Plan should address impacted pedestrian facilities.
1. **Avoid closure of Pedestrian Route (if possible)**
 - Channelizing devices are more effective and less costly than detours
 - They are more convenient for pedestrians who often will not retrace steps or travel additional distance
2. **If you must close a Pedestrian Route**
 - Design an alternate route using the MUTCD
Advance warning required
 - An alternate access may be provided where technically infeasible (i.e., free bus service, pedestrian assistance thru work zone, flaggers in school zones, etc)



Public Information

Planning/Design should also include;

- **Community announcements**

Residents, businesses, schools

- **Project web sites**

Particularly useful with major projects,
heavily used facilities

- **Other languages, as appropriate**

- ❖ Discuss location and duration

- ❖ Provide guidance in the contract special provisions for sidewalk closures... duration....locations....the more information, the better.



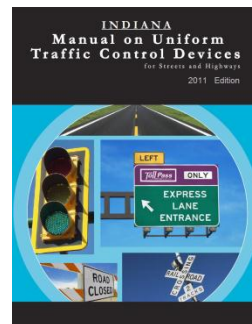
MOT R205 Alternate Pedestrian

* **Alternate Route Requirements:**

- 1. Alternate routes should be convenient, accessible, and replicate existing walkway to the extent feasible**
 - Accessibility features consistent with existing facilities
- 2. Be as wide as existing sidewalk**
 - Must be at least 4' wide, if less than 5' wide, must contain a 5' x 5' passing space every 200'
- 3. Have a smooth, continuous, hard surface**
(no holes, debris or abrupt changes in grade or terrain)
- 4. Should consider barriers and channelizing devices**
(keep construction signs clear of pedestrian area)
- 5. Provide access to temporary transit stops**
- 6. Separate pedestrians from worksite with appropriate devices that maintain accessibility**

Protect pedestrians from excavations, equipment, etc

- 5. Should consider audible information devices and APS**



■ Temporary Audible Devices

(reference shows up in various sections of the IMUTCD)

■ IMUTCD 6D.02 Accessibility Considerations

Because printed signs and surface delineation are not usable by pedestrians with visual disabilities, blocked routes, alternate crossings and (sign & signal) information should be communicated to pedestrians with visual disabilities by providing audible information devices, accessible pedestrian signals (APS), and barriers and channelizing devices that are detectable to pedestrians traveling with the aid of a long cane or who have low vision.

Audible information devices might not be needed if detectable channelizing devices make an alternate route of travel evident to pedestrians with visual disabilities.



■ Temporary Audible Devices

■ IMUTCD 6F.14 Sidewalk Closed Signs

An audible information device is **needed when** the detectable barricade or barrier for an **alternate channelized route is not continuous**.

■ IMUTCD 6F.16 Warning Sign Function, Design and Application

Where road users include pedestrians, the provision of supplemental **audible information** or detectable barriers or barricades **should be considered** for people with visual disabilities.

■ IMUTCD Notes from Figures 6H-28 and 6H-29

Audible information devices **should be considered where midblock closings and changed crosswalk areas cause inadequate communication** to be provided to pedestrians who have visual disabilities.



■ Temporary Audible Devices

So how do you make the decision?

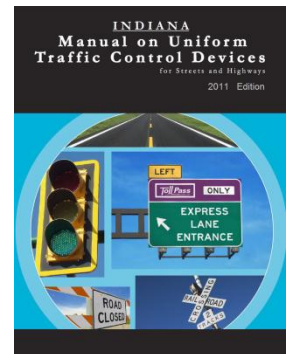
1. Do any of the IMUTCD sections guide you to adding audible devices?
2. Does the intersection your working on already have audible signals?
3. Discuss with the District Traffic Engineer for a recommendation



MOT R205 Alternate Pedestrian Access Route

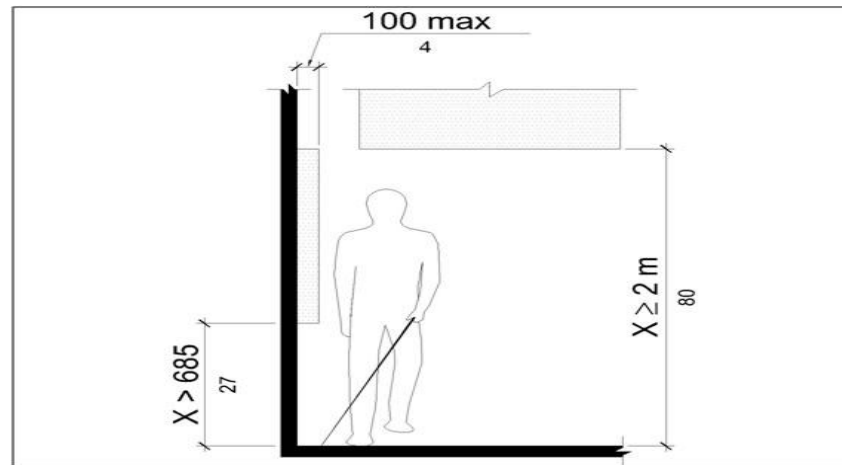
* Channelizing of Alternate Routes

- See IMUTCD 6F.63, 6F.68, 6F.70, 6F.71 (Channelizing Devices for vehicles and Pedestrians)
- Must protect pedestrian from:
 - Motor vehicles
 - Worksite hazards
- Contain detectable edging IMUTCD 6F.74

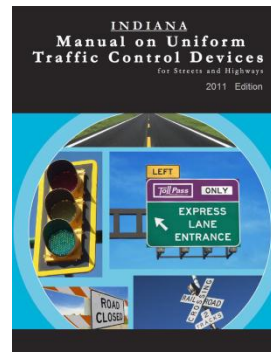


Channelizing of Alternate Routes

- Barricade rail supports between 27" and 80" height shall not protrude into alternate route $> 4"$



- Signs mounted at less than 7' shall not protrude $> 4"$ into alternate PAR



Channelizing of Alternate Routes

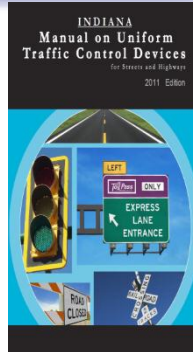
- Temporary Traffic Barriers (TTB)

Consider when:

Motor vehicles and pedestrians are re-routed closer to each other

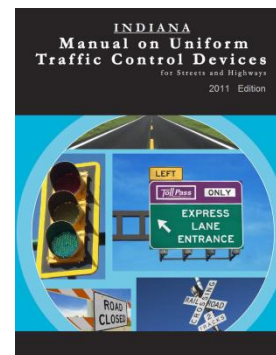
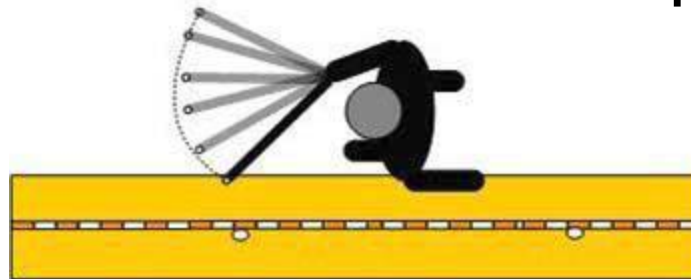
A significant potential exists for vehicle incursion into pedestrian path

- Wooden rail or fence between motorists and pedestrians is not allowed
- Tape, rope, chains are not accessible



Detectable Edging for Pedestrians

- Should be orange, white, or yellow; match adjacent channelizing device
- Bottom edge is maximum of 2" above and top edge is minimum of 6" above alternate PAR
- Continuous
- Firmly attached to ground or other device
- Interconnected to minimize displacement



MOT Tools to Minimize Construction Impacts

*

- Phasing of Construction
- Develop Detailed TTC Plan
- Effective Communication/Signage
- Effective Barriers
- Public Information



MOT Phasing of Construction

- Build new sidewalk early in multi-lane projects
- On bridges, build sidewalk wide enough to accommodate temporary bicycle-pedestrian travel
- In reconstruction of existing sidewalk, only work on one side of street at a time
- Maintain accessible crossings at beginning & end of work zone



MOT Temporary Accessible Barricades

*



**2004 ATSSA test at
FHWA's Research
Center**



MOT Examples of Effective Temp Barricade Design

*



Wood frame provides good proper direction, fencing is good addition



Nice solid barrier, but...

MOT Alternate Route Examples

- * Provide detectable alternate routes when the pedestrian access route is detoured; same-side is best, if feasible...



MOT Alternate Ramp Examples

*



Temporary Curb Ramp



MOT Alternate Route Examples



**Portable barrier on the left,
bottom edging and fence on
the right**

Not compliant

MOT Quick Check

ATSSA

https://www.workzonesafety.org//files/documents/training/fhwa_wz_grant/atssa_pedestrian_checklist.pdf

ACCESSIBILITY CRITERIA CHECKLISTS

ALTERNATE PEDESTRIAN CIRCULATION PATH (APCP) (WORK ZONE)

- Alternate pedestrian circulation path (APCP) requirements apply when pedestrians are diverted off the existing pedestrian circulation path network due to blockage from construction or maintenance activities.
- The APCP must contain a continuous accessible route that meets PAR requirements to the maximum extent feasible.
- The APCP shall be provided on the same side of the street as the blocked pedestrian circulation path, if feasible.
- Continuous cane-detectable pedestrian channelization in the form of barricades, longitudinal channelizing devices, and detectable edging shall be provided on both sides of the APCP from the point where pedestrian traffic is diverted from the existing pedestrian circulation path network to the point where they are returned to the existing network.
- Barricades, longitudinal channelization devices, and detectable edging shall conform to MUTCD sections 6F.63, 6F.68, 6F.70, 6F.71, 6F.73, and 6F.74.
- Sidewalk closures shall conform to MUTCD section 6D.02.
- See MUTCD sections 6D.01 and 6D.02 for further guidance.

PEDESTRIAN DETOUR ON EXISTING PEDESTRIAN CIRCULATION PATHS (WORK ZONE)

- Pedestrian detour requirements apply when an existing pedestrian circulation path is blocked by construction or maintenance activities and pedestrians are detoured around the work zone using the existing pedestrian circulation path network.
- Sidewalk closures shall conform to MUTCD section 6D.02.
- The pedestrian detour should have an equivalent level of accessibility as the route being detoured from.
 - ◇ Incorporate temporary curb ramps, detectable warning surfaces, and pedestrian push buttons into the pedestrian detour as needed to provide equivalent accessibility.
- See MUTCD sections 6D.01 and 6D.02 for further guidance.

Pedestrians Checklist and Considerations for Temporary Traffic Control Zones

For those who plan, design, and construct temporary traffic control (TTC) zones, the *Manual on Uniform Traffic Control Devices (MUTCD)* provides guidance considerations regarding pedestrians, accessibility, and worker safety. This document provides a checklist and overview of pedestrian-related considerations during planning, design, and construction phases for a project and is designed to enhance pedestrian safety and accessibility, maintain Americans with Disabilities Act of 1990 (ADA) compliance, and provide positive guidance to avoid pedestrian confusion throughout each phase. This side of the document provides pedestrian considerations for use during the planning and design phases, while the other side provides information for users while out in the field.

Pedestrian Considerations during Planning and Design

Planning

- Provide a safe, convenient travel path for pedestrians that replicates as nearly as possible the most desirable characteristics of the existing sidewalk or footpaths throughout all phases of construction.
- Avoid creating pedestrian paths that lead pedestrians into direct conflicts with work site vehicles, equipment, operations.
- Avoid creating pedestrian paths that lead pedestrians into direct conflicts with mainline traffic moving through or around the work site.
- Determine the TTC impact on pedestrians, including significant generators such as schools, senior centers, transit stops and shopping areas.
 - Determine the level of accessibility needed for pedestrians in the TTC zone through observing existing pedestrian travel patterns, and make accommodations prior to the start of work. Consider meeting with local community organizations (i.e., local blind organization, city ADA coordinator, etc.) through open houses to address concerns and needs. Develop outreach products available in the appropriate formats for those with specific needs.
- Assess the TTC impact on existing pedestrian flow.
 - Ensure that temporary facilities replicate as nearly as practical the accessibility features present in the existing pedestrian facility when the existing facilities are disrupted, closed, or relocated in a TTC zone.

Design

- Provide pedestrian information throughout the TTC zone.
 - Provide advance information, transition information, work area information, and ingress and egress directions for pedestrians. See *Accommodating Pedestrians in Work Zones* brochure developed by FHWA, FHWA-SA-03-011.
- The TTC pedestrian accommodation that utilizes a temporary route does the following:
 - Defines detour route clearly.
 - Provides advance signage at intersections rather than mid-block locations.
 - Separates pedestrians from vehicle traffic.
 - Avoids mid-block crossings.
 - Ensures that temporary routes are not much longer than the original route.
 - Provides clear and positive guidance to delineate a temporary route.
 - Provides continuous access to transit stops and/or relocates transit stops.
- Maintain a continuous accessible path of travel either around or through the construction site throughout all construction phases.
- Ensure compliance with Americans with Disabilities Act (ADA) of 1990 requirements.
 - Provide an alternate route when existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone. Temporary facilities should replicate the features present in the existing pedestrian facility.
 - Ensure a minimum sidewalk width of 36" (a 48" width is desirable), erect curb ramps, and provide passing space (minimum 5' foot by 5' foot space every 200 feet).
 - Maintain a minimum width and smooth surface to avoid creating tripping danger and to minimize barriers to wheelchair use. This includes providing ADA compliant facilities.
 - Make all barriers and channelizing devices detectable for pedestrians with visual disabilities. Note that the use of caution tape stretched between traffic control devices is not adequate and not acceptable.
 - Consider using additional devices for visual disabilities, such as audible information devices or accessible pedestrian signal.
- Maintain pedestrian access to businesses, residences, transit stops, etc.
- Provide temporary nighttime lighting for pedestrian walkways throughout the TTC zone.



continued on reverse →



Pedestrian Traffic Control

■ Where we are going

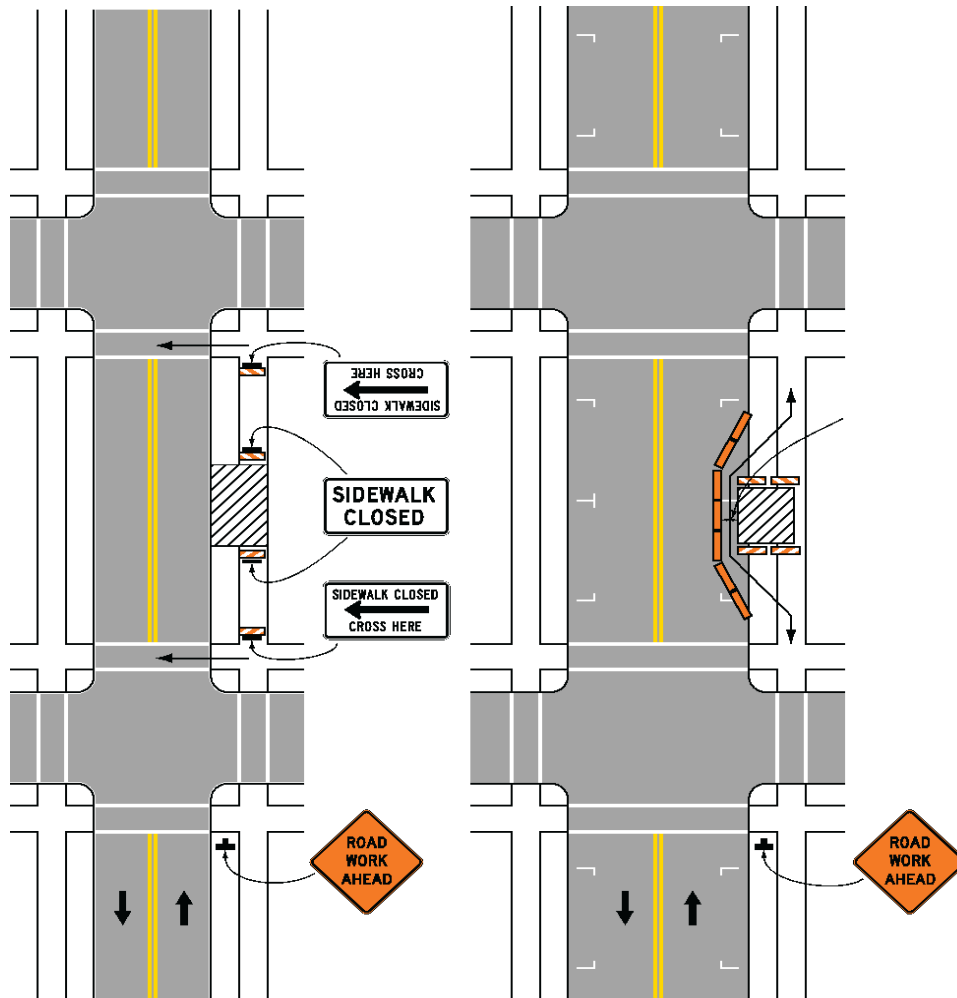
1. **Design plans** should address the Pedestrian Access Route (PAR)

Where do you get guidance?

- ✓ Use the IMUTCD and upcoming Standard sheets
- ✓ Pay for under Maintenance of Traffic
- ✓ Individual Pedestrian Access Route (PAR) items to be paid for separately

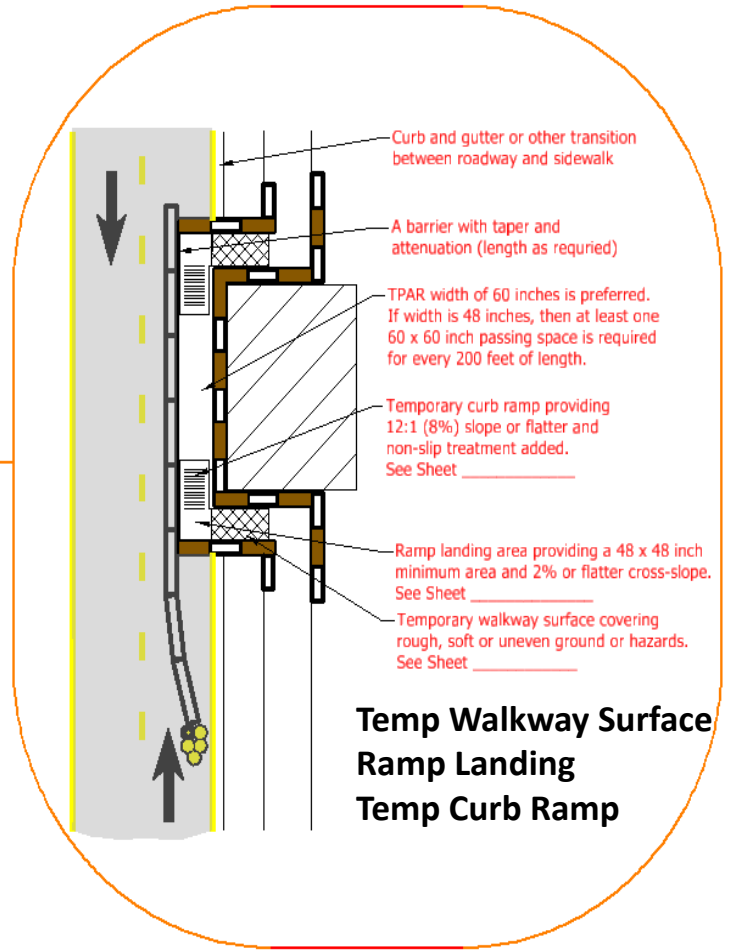
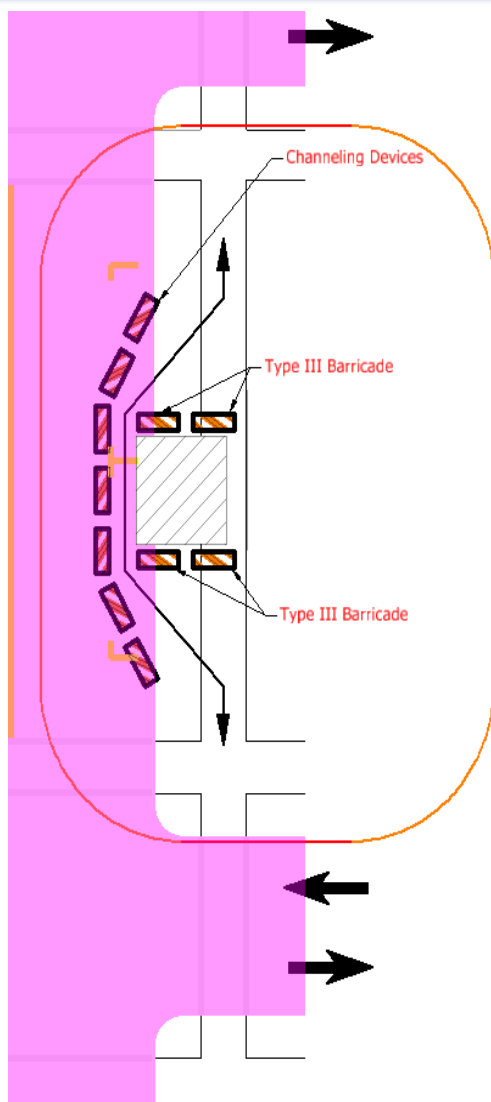
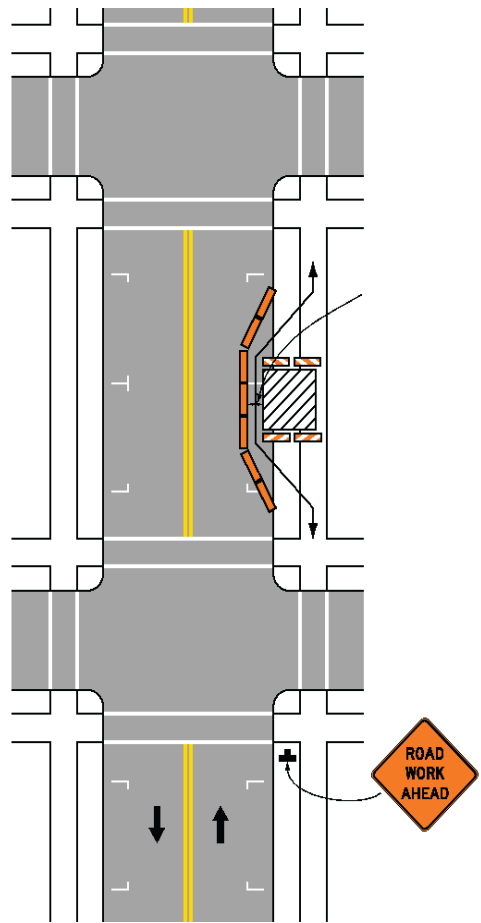


MOT IMUTCD 6H-28 Sidewalk Detour or Diversion



- **Sidewalk Detour or Diversion**
- Advance warning signs at intersection
- Temp Traffic Barrier to separate motorists and pedestrian
- Detectable edge extends across full width of closed sidewalk
- Where opportunity exists (parking, etc..) reroute adjacent to sidewalk to maximize convenience and ease communication

MOT IMUTCD 6H-28 Sidewalk Detour or Diversion



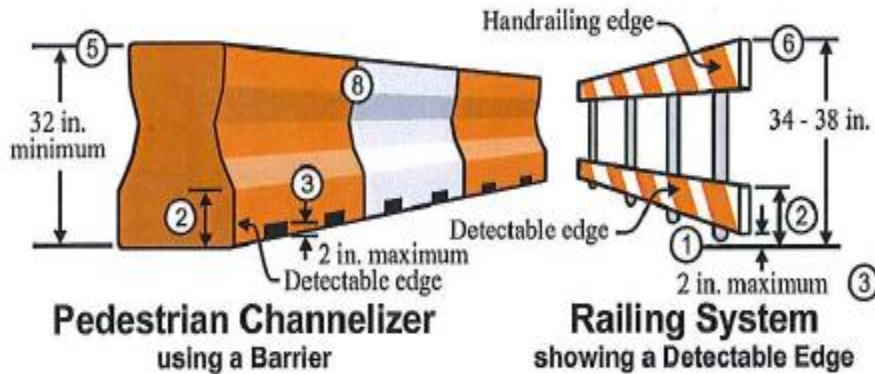
- Curb and gutter or other transition between roadway and sidewalk
- A barrier with taper and attenuation (length as required)
- TPAR width of 60 inches is preferred. If width is 48 inches, then at least one 60 x 60 inch passing space is required for every 200 feet of length.
- Temporary curb ramp providing 12:1 (8%) slope or flatter and non-slip treatment added. See Sheet _____
- Ramp landing area providing a 48 x 48 inch minimum area and 2% or flatter cross-slope. See Sheet _____
- Temporary walkway surface covering rough, soft or uneven ground or hazards. See Sheet _____

Temp Walkway Surface
Ramp Landing
Temp Curb Ramp

ALTERNATE SIDEWALK BY-PASS

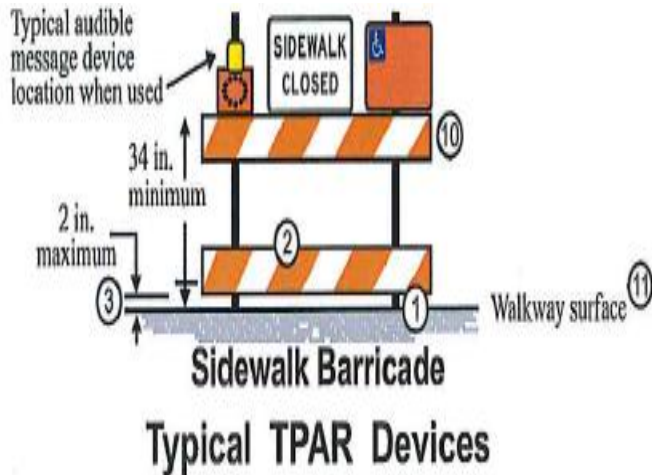


TPAR Devices



NOTES:

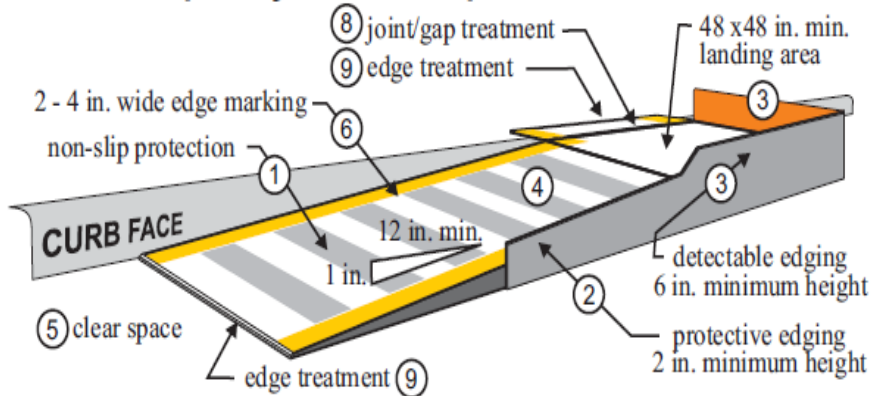
- To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device. Any support on the front of the device shall not extend into the 48 in. minimum walkway clear space and shall have 0.5 in. maximum height above the walkway surface with approved beveling (see note #9 on page 6K-xxxi for beveling details).
- Detectable edges for long canes shall be continuous and 6 in. min high above the walkway surface and have color or markings contrasting with the walkway surface.
- Devices shall not block water drainage from the walkway. A gap height or opening from the walkway surface up to 2 in. maximum height is allowed for drainage purposes.
- Railings or other objects may protrude a maximum of 4 in. into the walkway clear space when located 27 in. minimum above the walkway surface.
- Longitudinal channelizing devices for pedestrians shall be 32 in. high or greater.
- When hand guidance is required, the top rail or top surface shall:
 - be in a vertical plane perpendicular to the walkway above the detectable edge,
 - be continuous at a height of 34 to 38 in. above the walkway surface, and
 - be supported with minimal interference to the pedestrian's hands or fingers.
- All devices shall be free of sharp or rough edges, and fasteners (bolts) shall be rounded to prevent harm to hands, arms or clothing of pedestrians.
- All devices used to channelize pedestrian flow should interlock such that gaps do not allow pedestrians to stray from the channelized path.
- Any pedestrian devices used to provide positive protection (traffic or hazard) for pedestrians or workers shall meet crashworthy requirements appropriate for the barriers' application.
- Barricades shall be used to close the entire width of the walkway surface.
- A walkway surface shall be firm, stable, and slip resistant.



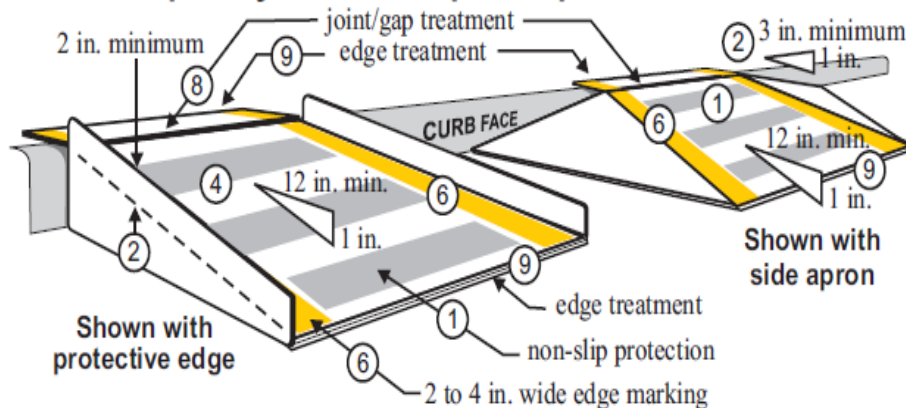
Temporary Curb Ramps

*

Temporary Curb Ramp - Parallel to Curb



Temporary Curb Ramp - Perpendicular to Curb

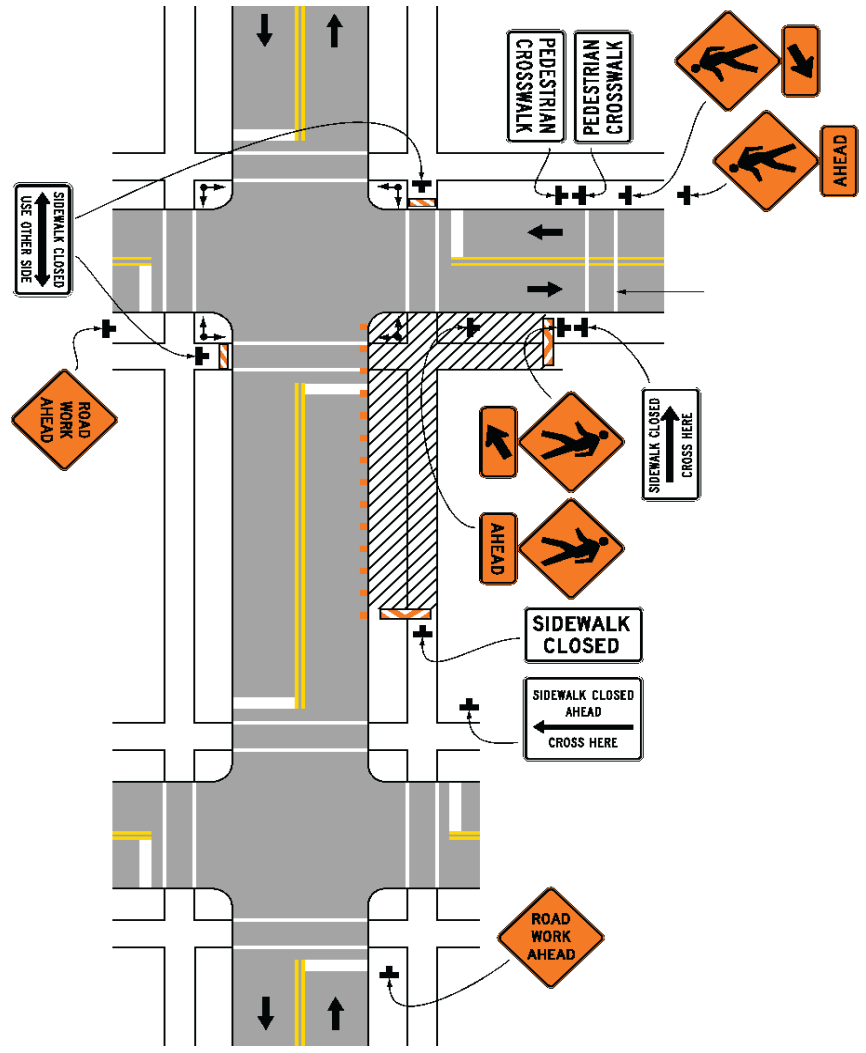


NOTES:

1. Curb ramps shall be 48 in. minimum width with a firm, stable and non-slip surface.
2. Protective edging with a 2 in. minimum height shall be installed when the curb ramp or landing platform has a vertical drop of 6 in. or greater or has a side apron slope steeper than 1:3 (33%). Protective edging should be considered when curb ramps or landing platforms have a vertical drop of 3 in. or more.
3. Detectable edging with 6 in. minimum height and contrasting color shall be installed on all curb ramp landings where the walkway changes direction (turns).
4. Curb ramps and landings should have a 1:50 (2%) max cross-slope.
5. Clear space of 48 x 48 in. minimum shall be provided above and below the curb ramp.
6. The curb ramp walkway edge shall be marked with a contrasting color 2 to 4 in. wide marking. The marking is optional where color contrasting edging is used.
7. Water flow in the gutter system shall have minimal restriction.
8. Lateral joints or gaps between surfaces shall be less than 0.5 in. width.
9. Changes between surface heights should not exceed 0.5 in. Lateral edges should be vertical up to 0.25 in. high, and beveled at 1:2 between 0.25 in. and 0.5 in. height.

Typical TPAR Devices

MOT IMUTCD 6H-29 Crosswalk Closures and Ped Detours



Crosswalk Closures and Detours

- Advance warning signs at intersections
- Introduction of mid-block crossing
- Where work is long term, the double yellow lines should be removed within the crosswalk markings
- In order to maintain systematic use of fluorescent yellow-green for ped./bike/schools may use FYG instead of orange signs



INDOT Pay Items

■ **Proposed** INDOT Pay items for pedestrian MOT

801-06775 Maintaining Traffic (LSUM)

801- 08401 Temporary Traffic Barrier Type 2 (LFT) (Concrete Barrier)

801-XXXXX Pedestrian Channelizer (LFT) (Portable Barrier)

801-XXXXX Pedestrian Railing System (LFT) (Wooden longitudinal Barricade)

801-XXXXX Temporary Curb Ramp (Each)

801-XXXXX Temporary Detectable Warnings (LFT)

801-XXXXX Temporary Audible Message Device (Each)

Devices such as cones, drums are not to be measured, as per 801.17



Recurring Special Provision

SECTION 801, AFTER LINE 71, INSERT AS FOLLOWS:

801.03 General Requirements

The applicable requirements of the MUTCD shall apply to the installation and materials for traffic control devices subject to the requirements of 107.08 and 107.12. ***Traffic control shall also include pedestrian traffic, as shown on the plans or as directed.*** When the plans do not include a maintenance of traffic plan, the Engineer will provide such a plan to the Contractor. The Contractor shall be responsible for the field layout, placement, operation, maintenance, and removal of temporary traffic control devices.

SECTION 801, BEGIN LINE 1006, INSERT AS FOLLOWS:

Items. The furnishing, placing, moving, removal, and maintenance of all other temporary traffic control devices, ***including devices used for maintaining pedestrian traffic,*** will be paid for at the contract ***lump sum price for maintaining traffic.***



Unique Special Provision

MAINTAINING PEDESTRIAN ACCESSIBILITY DURING CONSTRUCTION

Pedestrian accessibility shall be maintained during the construction of this project where existing sidewalk and curb ramps exist through the use of signed pedestrian detours that utilize nearby curb ramps less than 1000 ft away from the construction zone or the use of construction phasing or temporary sidewalk in accordance with 107.08 as shown in the maintenance of traffic details.

Sidewalk and ramp closures at any single location shall be limited to 14 days to minimize pedestrian travel disruption even if temporary sidewalks or pedestrian detours are used.



Why Pedestrian safety in Work Zones

- **Remember 3 Reasons that concern Pedestrians in Work Zones**

- 1. Safety of Pedestrians
- 2. Business Impact
- 3. It's The Law



3 Basic Considerations

■ Remember (3) Basic Considerations

1. Avoid conflicts with the work site;
2. Avoid conflicts with mainline motorists;
3. Provide safe, convenient path matching accessibility characteristics of existing sidewalk.

①

MUTCD Chapter 6D.01



References

- **Title II of ADA, with analysis**
 - <http://www.ada.gov/taman2.html>
- **Public Rights-of-Way (PROWAG) Notice of Proposed Rule Making, July 26, 2011**
 - <http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/proposed-rights-of-way-guidelines>
- **DOJ/DOT Joint Technical Assistance on the Title II of the ADA Requirements to Provide Curb Ramps when Streets, Roads, or Highways are Altered through Resurfacing**
 - http://www.fhwa.dot.gov/civilrights/programs/doj_fhwa_ta.cfm
- **Questions and Answers about ADA/Section 504 – Office of Civil Rights – FHWA**
 - http://www.fhwa.dot.gov/civilrights/programs/ada_sect504qa.htm#q11
- **AASHTO Guide for Planning, Design, and Operation of Pedestrian Facilities**
 - https://bookstore.transportation.org/item_details.aspx?id=119
- **Public ROW Access Advisory Committee’s Report on “Accessible Public ROW Planning & Designing for Alterations” – August 2007**
 - <http://www.access-board.gov/guidelines-and-standards/streets-sidewalks/public-rights-of-way/guidance-and-research/accessible-public-rights-of-way-planning-and-design-for-alterations>



Questions??

Eryn Fletcher / Senior TE, FHWA
John Wright / Dir. of Hwy Design, INDOT

