Virginia’s Work Zone Traffic Control for Pedestrians and Bicyclists

2016 National Work Zone Safety Conference
September 21, 2015

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We Are All Pedestrians

People walk for a variety of reasons or needs, including:

– travel to work, school, shopping
– connect to transit
– health and exercise
– recreation
– age, economic, or physical barriers to operating cars

It is the most basic form of transportation!
The Issue

We build and maintain Transportation Systems/Networks!

- Our construction and maintenance work affects all users

- Various state and Federal laws and regulations to accommodate the disabled

- The Manual for Uniform Traffic Devices (MUTCD) and the Virginia Work Area Protection Manual

- The Department of Justice requiring FHWA to enforce current regulations and require state DOTs’ to upgrade existing ramps.
Is There a Need for Pedestrian Accessibility in Work Zones
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Pedestrian Accessibility

During a 2012 Project Work Zone Review it was noted:

• In the TTC Plan that a pedestrian path was to be provided during construction but no specific details were provided

• No alternate path was provided for pedestrians
Pedestrian Accessibility

The alternate path that was provided for pedestrians by work order.
The proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way provides:

- guidelines for public rights-of-way are being prepared as a supplement to ADA and the Architectural Barriers Act

- these guidelines address pedestrian access to sidewalks and streets, including crosswalks and curb ramps
Public Rights-of-Way

The proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way includes:

- A requirement that alternate pedestrian access routes must be provided when a pedestrian circulation path is temporarily closed by construction, alterations, maintenance operations, or other conditions.

- That the alternate pedestrian route complies with the 2009 MUTCD.

- The requirement that the alternate route be accessible and detectable, including messages for blind/low vision pedestrians about sidewalk closures.
Virginia Work Zone
Pedestrian and Bicycle Guidance

Detectable Edge Devices

1. To prevent any tripping hazard to pedestrians, ballast shall be located behind or internal to the device.
2. Detectable edges for long canes shall be continuous, a minimum width of 6 inches, and be a contrasting color with the walkway surface.
3. Devices should not prevent the drainage of water from the walkway. An opening with a 2 inch maximum height above the walkway surface is allowed for drainage.
4. Longitudinal channelizing devices for pedestrians shall have a minimum height of 32 inches. Longitudinal channelizing devices shall not be installed with a handrail.
5. When hand guidance is required, the top surface of the device shall be in a vertical plane perpendicular to the walkway and above the detectable edge with a continuous height of 35-38 inches.
6. All devices should be free of sharp or rough edges with all fasteners installed below the surface and capped to prevent harm to hands, arms or clothing of pedestrians.
7. All devices used to provide guidance for pedestrians shall interlock to prevent gaps between devices.

Temporary Curb Ramps

1. Curb ramps should be a minimum of 48 inches in width for perpendicular ramps and 60 inches in width for parallel ramps, with a firm, stable non-slip surface.
2. Detectable edges for long canes shall be continuous and a minimum of 6 inches above the walkway surface and be a contrasting color with the ramp and landing surface. For perpendicular ramps, the 6 inch detectable edge may be replaced with a 10.1 apronilled side and a 2 inch wide marked walkway edge line.
3. Ramps shall have a slope not to exceed a maximum of an 12% (8:1).
4. Curb ramps and turning spaces should have a maximum of 2% (8:1) cross-slope.
5. A level clear space, 48 X 48 inch for perpendicular ramps and 60 X 60 inch for parallel ramps, should be provided above and below the ramp.
6. Curb ramps should be placed to have minimal restriction to water flow in the curbside gutter drainage system.
7. All joints and gaps between surfaces should be less than 0.5 inches.
8. Vertical changes between surface heights should not exceed 0.5 inches. Vertical edges can be vertical up to 0.25 inches. Vertical edges between 0.25 and 0.5 inches shall be beveled at 2:1.
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ADA Products

The manufacturers listed below offer temporary pedestrian products. The Virginia Department of Transportation (VDOT) does not assume liability for the contents of this list or its use, nor does the VDOT endorse the manufacturers or their products. The Virginia Department of Transportation did not evaluate all these products or certify the products as complying with the requirements of any VDOT or accessibility standard as well as any Virginia and Federal regulation. Products are listed because of their potential usefulness to individuals and do not because they have been tried to meet the requirements of any VDOT or accessibility standard as well as any Virginia and Federal regulation. The list is not an inclusive list of products and we recommend an internet search using the device headers in bold text for additional manufacturers and products.

Audible Warning Devices

Lake Traffic Solutions, LLC  http://www.laketraffic.com/ada.html
- ADA Construction Area/Sidewalk Warning
Empco-Lite  http://www.empcolite.com/barricade/ADA-Lite.htm
- Model 100 ADA Audible Device
MROI Worldwide  http://www.mroiworldwide.com/ada_speakers.htm
- ADA Special Facer

Longitudinal Channelizers/Pedestrian Barricades/Railings

FHWA Work Zone Safety Hardware
http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/listing.cfm?codes=workzone
GTW Safety  http://gtwsafety.com/mtm-32422-aq
- RMB4840
Pemco, Division Traffic Control Products  http://www.pemco.com/Pages/PemcoTraffic.aspx
- Temporary Pedestrian Access Route (TPAR) Barricade
Plasticade  http://www.plasticade.com
- Strongwall LCD
- Strongwall ADA Pedestrian Barricade
PlasticSafe  http://www.plasticsafety.com
- SafetyWall ADA-Compliant Pedestrian Barricade
- SafetyRail ADA-Compliant Pedestrian Barricade

Three D Traffic Works  http://www.trafficworks.com
- ADA-able
- Metro-Wall
- ADA-Wall
Northeast Traffic Control  http://www.nettraffic.net/products/ada-compliant-pedestrian-barricade/
- ADA-Compliant Pedestrian Barricade
Detectable Warning Products
Access Tile  http://www.accesstile.com
- Access Tile Tactile System
Armor Tile  http://www.armortile.com
- Armor Tile Tactile System
ArmorCast Product Company  http://www.armorcement.com
- Detectable Warning Panels
Lake Traffic Solutions, LLC  http://www.laketraffic.com/ada.html
- ADA Detectable Warnings and Tactile Dome
Three D Traffic Works  http://www.trafficworks.com
- Tough Etch Tiles (ADA Only)
- Red-Hot
Portable Curb Ramps
PlasticsWebSystems
- Board Wall Temporary Portable Modular Ramp
  http://adatasafety.com/Products/ADA-Compliant-Products/The-BoardWall.aspx
Hand-Ramp  http://www.handrampcorp.com/about.htm
PortaWall  http://www.portawall.com/modular_handicap_ramp_solutions.aspx
- SafeHand Ramp
An alternate pedestrian route, meeting existing conditions, should always be the first option.
Decision Flow Chart

Street/Roadway Pavement Operations

No

Existing Curb Ramp

Yes

Existing Alternate ADA Path

No

Duration < 1 Hour
- No Action Required

Vertical Rise ≤ ¼"
- No Action Required

Vertical Rise ≤ 1/2"
- No Action Required

Vertical Rise ≤ 3"
- 2:1 Slope Required

Vertical Rise ≤ 6"
- 8:1 Ramp Required

Vertical Rise > 6"
- 10:1 Ramp Required

Vertical Rise > 6"
- 12:1 Ramp Required

Detour or Divert Pedestrians per this ADA guidance Document
Decision Flow Chart

Maintenance and Utility Operations

No

Existing Curb Ramp

Yes

No Existing Path

Existing Path No ADA Access

No Action Required

Existing Path ADA Access

Pedestrian Access per VA WAPM

Detour or Divert Pedestrians per this ADA Guidance Document

Pedestrian Access per this ADA Guidance Document
Decision Flow Chart

Construction Operations

No

No Existing Path

No Action Required

Existing Path No ADA Access

Pedestrian Access per VA WAPM

Yes

Existing Curb Ramp

Alternate Existing ADA Path

Detour or Divert Pedestrians per this ADA Guidance Document

Existing Path ADA Access

Pedestrian Access per this ADA Guidance Document
Virginia Work Zone
Pedestrian and Bicycle Guidance

1. When sidewalks, crosswalks, shared-use paths, trails, or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall meet, and if feasible, exceed, accessibility features present in the existing facility.

2. The illustrated example only provides typical guidance. Refer to Figure TTC-35 in the Virginia Work Area Protection Manual for standards, guidance and options for blocking, closing or relocating pedestrian facilities.

3. When existing site conditions make it infeasible to meet the recommended standards these conditions shall be documented and retained in the project's file. Only traffic control devices controlling pedestrian movement are illustrated. Other traffic control devices, based on the work operation per the Virginia Work Area Protection Manual, may be needed to control vehicular and pedestrian traffic on the roadway.

4. When both sides of a temporary pedestrian facility require channelizing devices, the devices should be a similar type (longitudinal channelizing device or pedestrian barricade system), excluding traffic barrier, used to protect pedestrians from vehicular traffic.

5. Refer to Appendix A of the current Virginia Work Area Protection Manual for guidance on the application of barriers /channelizing devices in work zones.

6. A motion-activated message device(s) may be provided for sight-impaired pedestrians. When used, the message device(s) should provide a complete physical description of the temporary pedestrian facility including: duration, length of and/or distance to the facility, restriction or hazards as well as information present on the required signs. The message device(s) may also describe an alternate route.

7. A facility is non-compliant if it is missing key ADA elements such as curb ramps, truncated dome detectable warning, and detectable edging. Other restrictions may include insufficient width, traffic conflicts, steep grades, non-continuous channelizing devices, tripping hazards, uneven/rough/slip surfaces, etc. An alternate route should be provided and posted when a temporary facility is not ADA compliant and when the existing path to be closed has ADA access.
Sidewalk Bypass at an Intersection

1. When sidewalks, crosswalks, shared-use paths, trails, or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall meet, and if feasible exceed, accessibility features present in the existing facility.

2. The illustrated example only provides typical guidance. Refer to the Figure TTC-36 in the current Virginia Work Zone Protection Manual for standards, guidance and options for blocking, closing or relocating pedestrian facilities for additional sign and crosswalk pavement marking requirements.

3. When existing site conditions make it infeasible to meet the recommended standards these conditions shall be documented. Conditions may include insufficient width, traffic conflicts, steep grades, non-continuous channelizing devices, tripping hazards, uneven/rough/soft surfaces, etc. An alternate route should be provided and posted when a temporary facility is not ADA compliant.

4. Only traffic control devices controlling pedestrian movement are illustrated. Other traffic control devices based on the work operation per the Virginia Work Area Protection Manual, may be needed to control vehicular traffic on the roadway.

5. When both sides of a temporary pedestrian facility require channelizing devices, the devices should be of similar type (longitudinal channelizing device or pedestrian barricade system), excluding traffic barriers, used to protect pedestrians from vehicular traffic.

6. Refer to Appendix A of the current Virginia Work Zone Protection Manual for guidance on the application of barriers/channelizing devices in work zones.

7. A motion activated message device(s) may be provided for sight-impaired pedestrians. When used, the message device(s) should provide a complete physical description of the temporary pedestrian facility including duration, length of and/or distance to the facility, restriction or hazards as well as information present on the required signs. The message device(s) may also describe an alternate route.

8. When the route between a temporary pedestrian facility and an existing sidewalk is skewed at a crosswalk, a temporary detectable warning strip may be used to provide guidance for sight-impaired pedestrians.

9. VDOT’s “Guidelines for the Installation of Marked Crosswalks” should be used for information on the application of temporary marked crosswalks and the use of appropriate traffic control devices.
Virginia Work Zone Pedestrian and Bicycle Guidance

Sidewalk Mid-block Crossing
1. When sidewalks, crosswalks, shared-use paths, trails, or other pedestrian facilities are blocked, closed or relocated, temporary facilities shall meet, and if feasible exceed, accessibility features present in the existing facility.

2. The illustrated example only provides typical guidance and may be applied to street block lengths of more than 1000 feet. Refer to the current Virginia Work Area Protection Manual for standards, guidance and options for pedestrian facilities.

3. When existing site conditions make it infeasible to meet the recommended standards those conditions shall be documented. Conditions may include insufficient width, traffic conflicts, steep grades, non-continuous channelizing devices, tripping hazards, uneven/rough/soft surfaces, etc. An alternate route should be provided and posted when a temporary facility is not ADA compliant.

4. Only traffic control devices controlling pedestrian movement are illustrated. Other traffic control devices, based on the work operation per the Virginia Work Area Protection Manual, may be needed to control vehicular traffic on the roadway.

5. When both sides of a temporary pedestrian facility require channelizing devices, the devices should be a similar type (longitudinal channelizing device or pedestrian barrier system), excluding traffic barriers used to protect pedestrians from vehicular traffic.

6. Refer to Appendix A of the current Virginia Work Area Protection Manual for guidance on the application of barriers/channelizing devices in work zones.

7. A motion activated message device(s) may be provided for sight-impaired pedestrians. When used, the message device(s) should provide a complete physical description of the temporary pedestrian facility including duration, length of and/or distance to the facility, restriction or hazards as well as information present on the required signs. The message device(s) may also describe an alternate route.

8. When the route between a temporary pedestrian facility and an existing sidewalk is skewed at a crosswalk, a temporary detectable warning strip should be used to provide guidance for sight-impaired pedestrians.

9. VDOT's “Guidelines for the Installation of Marked Crosswalks” should be used for information on the application of temporary mid-block marked crosswalks and the use of appropriate traffic control devices.

10. W11-2 sign and W16-7 plaque shall be fluorescent yellow-green background.
Virginia Work Zone Pedestrian and Bicycle Guidance

- Continuity of the bikeway through the work zone should be maintained.
- If available, an alternate lower speed route for closed shared-use paths, should always be provided.
- Also provide guidance to other shared-use path users.
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EXAMPLE OF A SHARED-USE OR BICYCLE PATH CLOSURE WITH DIVERSION

EXAMPLE OF A SHARED-USE OR BICYCLE PATH CLOSURE WITH DETOUR
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Example of a shoulder closure with a bicycle diversion path.

Example of a path closure with a diversion path.
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ADA/Pedestrian/Bicycle Accessibility Checklist

ADA/Pedestrian Checklist

This project has been reviewed for the various temporary traffic control provisions for pedestrian accessibility considerations contained in the current MUTCD, the Virginia Work Area Protection Manual, and the guidance published in the Virginia Work Zone Pedestrian and Bicycle Guidance document. Considerations as listed below have been reviewed and where applicable, deviations and/or exceptions from the MUTCD, the Virginia Work Area Protection Manual, and the Virginia Work Zone Pedestrian and Bicycle Guidance document are documented.

IS IT REASONABLE TO EXPECT THAT PEDESTRIANS WILL BE PRESENT WITHIN THE VICINITY OF THE PROPOSED TEMPORARY TRAFFIC CONTROL ZONE?

YES - complete the following checklist
NO - document your conclusion

When existing pedestrian facilities (routes) are disrupted, closed, or relocated in a temporary traffic control zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.

A. Will a reasonably safe, convenient, and accessible route be provided that replicates as much as practical the characteristics of the existing pedestrian facility?

YES NO (partially) document your decision

B. Will access be provided to current or temporary transit stops?

YES NO (partially) document your decision

C. Will all pedestrian facilities near the work zones be separated from the work area by appropriate barriers that maintain the accessibility and detectability for pedestrians with disabilities?

YES NO (partially) document your decision

D. Will a smooth, continuous hard surface that will not cause tripping or restrict wheelchair use be provided throughout the entire length of the temporary pedestrian facility?

YES NO (partially) document your decision

E. Will blocked routes, alternate crossings, sign and signal information be communicated to pedestrians with visual disabilities? Devices may include audible information devices and accessible pedestrian signals. Other ADA compliant pedestrian devices may include barriers/ channelizing devices that are detectable to the pedestrian travelling with the aid of a long cane or who have low vision. Where pedestrian traffic is detoured to a signal, engineering judgment should be used to determine if pedestrian signals or accessible pedestrian signals should be considered for crossings along an alternate route.

YES NO (partially) document your decision

F. Will sidewalk(s) be closed properly with advance notification to the public? Advance notification of sidewalk closures shall be provided to the public. When a sidewalk is closed, a barrier that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.

YES NO (partially) document your decision

G. Will channelization with continuous edging be used to delineate a pedestrian pathway throughout the length of the facility such that pedestrians using a long cane can follow it? (These detectable edgings should adhere to the provisions of Section 6F.68 of the Virginia Work Area Protection Manual.)

YES NO (partially) document your decision

H. Will the width of the existing pedestrian facility be provided for the temporary facility? Where it is not possible to maintain a width of 60 inches throughout the entire length of the pedestrian route, is a 48 inch wide path with a 60 x 60 inch passing space provided at least every 200 feet to allow individuals in wheelchairs to pass?

YES NO (partially) document your decision

I. Is the accessible route free of intrusions by traffic control devices and construction materials? Signs and other devices mounted lower than 7 feet above the temporary pedestrian pathway should not project more than 4 inches into accessible pedestrian facilities. Barricade rail supports should not project into pedestrian circulation routes more than 4 inches from the support between 27 inches and 60 inches from the surface. Ballast shall not extend into the accessible passage width of 60 inches. Refer to Section 6F.76 of the Virginia Work Area Protection Manual for more details.

YES NO (partially) document your decision
**Virginia Work Zone Pedestrian and Bicycle Guidance**

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**ADA/Pedestrian/Bicycle Accessibility Checklist**

**Bicycle/Shared-Use Path Checklist**

This project has been reviewed for the various temporary traffic control provisions for bicycle considerations as well as other self-propelled devices contained in the current MUTCD, the Virginia Work Area Protection Manual, Virginia Work Area Protection Manual and the guidance published in the Virginia Work Zone Pedestrian and Bicycle Guidance document. Considerations as listed below have been reviewed and where applicable, deviations and/or exceptions from the MUTCD, the Virginia Work Area Protection Manual, and the Virginia Work Zone Pedestrian and Bicycle Guidance document are documented.

**IS IT REASONABLE TO EXPECT THAT MIXED TRAFFIC (BICYCLISTS/MOTORIZED VEHICLES) WILL BE PRESENT WITHIN THE VICINITY OF THE PROPOSED TEMPORARY TRAFFIC CONTROL ZONE?**

- **YES** - complete the following checklist
- **NO** - document your conclusion

When existing bicycle facilities (routes) are disrupted, closed, or relocated in a temporary traffic control zone, the temporary facilities shall include features consistent with the features present in the existing bicycle facility.

A. Will a reasonably safe, convenient, and accessible path be provided that replicates as much as practical the characteristics of the existing bicycle facility?
   - **YES** - NO (partially) document your decision

B. Will bicycle facilities near the work zones be separated from the work area by appropriate barriers?
   - **YES** - NO (partially) document your decision

C. Will blocked routes, alternate crossings, sign and signal information be communicated to bicyclists?
   - **YES** - NO (partially) document your decision

D. Will a bike lane or shared use path be closed properly with advance notification to the public?
   - **YES** - NO (partially) document your decision

E. Is the detour route used to guide bicyclists throughout the length of the detour properly signed such that bicyclists can follow the alternate route?
   - **YES** - NO (partially) document your decision

F. Does the temporary bicycle facility provide the same level of continuity as the existing bicycle facility?
   - **YES** - NO (partially) document your decision
Virginia Work Zone
Pedestrian and Bicycle Guidance

Guidance and ADA product documents can be accessed on the Internet at:

http://www.virginiadot.org/business/trafficeng-WZS.asp

NEW – Virginia Department of Transportation Work Zone Pedestrian and Bicycle Guidance

The Virginia Department of Transportation Work Zone Pedestrian and Bicycle Guidance document provides practitioners with information for temporary traffic control to assistance pedestrians, bicyclists and persons with disabilities a recommended route for the safe and effective movement through a work area. Examples of various applications, including applications meeting current ADA requirements, are illustrated.

A companion document, ADA Product Manufacturers, has been developed to assist practitioners. This document lists products that the manufacturer has advertised as ADA compliant. It is not a VDOT Approved Products list for these devices.
Questions

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