

VIRGINIA DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING DIVISION
INSTRUCTIONAL & INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: Americans with Disabilities Act Traffic Signals	NUMBER: IIM-TE-388
	SUPERSEDES: None
SPECIFIC SUBJECT: Accessible Pedestrian Signals and Accessible Pedestrian Signal Detectors	DATE: December 29, 2017
	SUNSET DATE: None
APPROVAL: /original signed by/ Raymond J. Khoury, P.E. State Traffic Engineer Richmond, VA 12/29/2017	

PURPOSE AND NEED

This Memorandum establishes minimum requirements for the installation of accessible pedestrian signals (APS) and accessible pedestrian signal detectors (APD) at street crossings with traffic signal indications for pedestrians at VDOT operated and maintained traffic signals.

VDOT Signal Alteration Activities that will require installation of APS and APD include:

- New Traffic Signals
- Traffic Signal Rebuilds
- Pedestrian Control Feature Additions
- Activities that require the replacement or relocation of an existing pushbutton support.

Installation of APS and APD may be accomplished, but will not be required, during Signal Maintenance Activities as defined within this Memorandum.

Where used, APS and APD shall comply with the applicable standards of the Manual on Uniform Traffic Control Devices (MUTCD), the Virginia Supplement to the MUTCD, and the 2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) as per this Memorandum.

Standards and guidance related to the decision-making process to determine whether to provide traffic signal indications for pedestrians are included in Section 4E of the MUTCD and Virginia Supplement to the MUTCD.

BACKGROUND

To be in compliance with the Americans with Disabilities Act (ADA) of 1990, VDOT is implementing a phased transition plan to program statewide accessibility which began in 2014 with issuance of IIM-TE-376 and IIM-TE-377 focused on VDOT's curb ramp assets.

Currently at VDOT operated and maintained traffic signals, APS and APD are installed upon request from members of the community as District funding becomes available. This Memorandum expands the program policy to establish consistent program requirements for APS and APD.

EFFECTIVE DATE

Future construction projects: This Memorandum shall be effective for all construction projects (including on-call signal maintenance/signal construction contracts) issued for advertisement on or after August 1, 2018.

Design-Build and PPTA contracts: This Memorandum shall be effective for all Design-Build and PPTA contracts where the design package is completed for advertisement on or after May 1, 2018. For current Design-Build or PPTA contracts that have not been awarded, this Memorandum should be implemented where practical and feasible.

Existing contracts (On-Call Type Signal Construction Contracts, Signal Maintenance Contracts): This Memorandum shall be effective for all task orders and/or work orders issued on or after April 1, 2018.

Existing contracts (all others): This Memorandum may be applied to projects under construction involving Signal Maintenance and/or Signal Alteration Activities if the change is approved by the Project Engineer.

Land use permits: This Memorandum shall be effective for all permits where the first draft/preliminary submission signal design has not yet been submitted to VDOT, and may also be applied to permit work currently under VDOT review if feasible to do so. This Memorandum may also be applied to previously-approved permits if mutually agreed to by VDOT and the permittee.

DEFINITIONS

Alteration: a change to a facility in the public right-of-way that affects or could affect pedestrian access, circulation, or use. Alterations include, but are not limited to, resurfacing, rehabilitation, reconstruction, historic restoration, or changes or rearrangement of structural parts or elements of a facility. (*Definition taken from PROWAG*)

Accessible Pedestrian Signal (APS): a device that communicates information about pedestrian signal timing in non-visual format such as audible tones, speech messages, and/or vibrating surfaces. (*Definition taken from MUTCD*)

Accessible Pedestrian Signal Detector (APD): a device designated to assist the pedestrian who has visual or physical disabilities in activating the pedestrian phase. *(Definition taken from MUTCD)*

Companion Corner Devices: the APS and APD on the far side of the crosswalk that is not physically impacted by the Signal Alteration Activity or Signal Maintenance Activity, but which are required to meet the applicable minimum improvement action(s) to provide accessible features for the pedestrian crossing.

Pedestrian Accommodations: any facility, design feature, operational change, or maintenance activity that improves the environment in which pedestrians travel. *(Definition taken from VDOT's Department Policy Memoranda Manual, DPM Number 2-12, "Implementation of the CTB Policy for Integrating Bicycle and Pedestrian Accommodations")*

Pedestrian Control Features: tangible traffic signal infrastructure and non-tangible traffic signal operational attributes that enable pedestrians to travel across a pedestrian crossing of a signalized intersection. Pedestrian control features typically include three specific aspects:

- Traffic signal indications for pedestrians (i.e. pedestrian signal heads or vehicular signal heads visible to pedestrians);
- Signal timing and/or phasing for pedestrians; and
- Pedestrian actuation (pushbuttons or passive detectors).

Curb ramps, sidewalks, and other traffic control devices (e.g. crosswalks) are not considered pedestrian control features for the purposes of this policy, but these are considered pedestrian accommodations.

Pedestrian Control Feature Additions: modifications to an existing traffic signal that include new pedestrian control features that did not previously exist on one or more pedestrian crossings.

Pushbutton: a button to activate a device or signal timing for pedestrians, bicyclists, or other road users. *(Definition taken from MUTCD)*

Signal Alteration Activities: signal improvement activities, classified as an Alteration per PROWAG definition, that VDOT has identified as requiring the installation or improvement of APS and APD. These Signal Alteration Activities are:

- New Traffic Signal
- Traffic Signal Rebuild
- Pedestrian Control Feature Additions
- Any activity that requires the replacement or relocation of an existing pushbutton support

Signal Maintenance Activities: traffic signal activities, not classified as an Alteration per PROWAG definition, that do not significantly affect a pedestrian's access to or usability of the traffic signal to cross the roadway.

Traffic Signal Rebuild: a signal improvement with a planned replacement of 1) 2/3rds or greater of the existing signal poles/mast arms or 2) replacement of existing span wire with mast arms (or vice versa). Pedestal poles (VDOT Standard PF-2) and pedestrian actuation poles (VDOT Standard PA-2, PA-3, and PA-4) are excluded when assessing the 2/3rds ratio. For purposes

of this policy, a Traffic Signal Rebuild shall be considered to impact all pedestrian crossings within the associated intersection.

STANDARDS, GUIDANCE, OPTIONS & SUPPORT

Standard:

01 The content in Paragraphs 03-09 of the Virginia Supplement to the MUTCD, Revision 1 that require an engineering study be conducted to evaluate the needs of pedestrians with visual disabilities shall not be applicable to APS and APD installed per this Memorandum.

02 APS and APD shall not be required to be installed or improved during Signal Maintenance Activities.

Support:

03 Signal Maintenance Activities include the following common VDOT signal activities:

- Emergency repairs
- Damage repairs
- Routine maintenance or life-cycle replacement of existing pedestrian pushbutton, pedestrian signal indications and/or other signal equipment including replacement of non-countdown pedestrian signal indications with countdown pedestrian signal indications
- Signal phasing changes
- Revision of signal timing, including pedestrian signal timing
- Replacement of signal controllers and/or upgrades to controller software that does not alter the operation or display of pedestrian signals
- Installation of other sign, signal, communication or ITS equipment
- Pavement marking installation or maintenance, including revisions to crosswalk marking patterns
- In-pavement detector installation or replacement

Option:

04 APD may be pushbuttons or passive devices.

Support:

05 Passive detection devices register the presence of a pedestrian in a position indicative of a desire to cross, without requiring the pedestrian to push a button.

06 APS are typically integrated into the pedestrian detector, so the audible tones and/or messages come from the pushbutton housing. Typically, pushbuttons are used at VDOT traffic signals.

Standard:

07 APS and APD shall be installed or improved during Signal Alteration Activities for all impacted pedestrian crossings where pedestrian control features are provided in the final condition. Appendix A provides figures outlining common Signal Alteration Activity scenarios and associated assessable improvement requirements.

Support:

- 08 Installation of APS and APD may be required for companion corner devices to complete installation for an entire impacted pedestrian crossing.
- 09 If the APS and APD has not been requested by the community for the specific signal or pedestrian crossing, the accessible functions of the equipment may be disabled until such need is determined in the future.

Standard:

- 10 When an activity is proposed that is not be clearly classified as a Signal Maintenance Activity or a Signal Alteration Activity, the team(s) leading the activity implementation, which may include the District Traffic Engineer, District Operations Maintenance Manager, District Permit/Planning Office, signal design engineer, and/or others as appropriate shall review the activity to determine what, if any, related improvement is appropriate in consideration of VDOT's intent to provide pedestrian accommodations for all users as outlined in VDOT's DPM Number 2-12, the requirements of the ADA and PROWAG, as well as the improvement activities' scope, schedule and budget. The final determination, including the improvement action(s) taken/not taken shall be documented with a copy of the documentation forwarded to the Traffic Engineering Division, Asset Applications Program.
- 11 APS and APD shall meet the applicable standards for audible and vibrotactile indications per Sections 4E.09 – 4E.13 of the MUTCD and Virginia Supplement to the MUTCD.
- 12 Accessible pedestrian pushbuttons for new signals, traffic signal rebuilds, pedestrian control feature additions, and activities requiring replacement or relocation of a push button support shall meet the applicable standards for Operable Parts (R403) - clear space, height (including reach), and operations - per PROWAG.
- 13 Installation of a new pushbutton support shall not be required for improvements at companion corner devices.

Guidance:

- 14 Accessible pedestrian pushbuttons installed at companion corner devices should meet the applicable standards for Operable Parts (R403) - clear space, height (including reach), and operations - per PROWAG to the extent practicable.
- 15 Accessible pedestrian pushbuttons installed for new signals, traffic signal rebuilds, pedestrian control feature additions, and activities requiring replacement or relocation of a push button support should be located relative to crosswalks, curbs, shoulders, and/or pavements per the criteria in Section 4E.08, Paragraph 04 of the MUTCD. Where there are physical constraints that make it impractical to place the accessible pedestrian pushbutton per this criteria, the accessible pedestrian pushbutton should be located per Section 4E.08, Paragraphs 05-08.

Support:

- 16 Physical constraints that could make it impractical to locate the accessible pedestrian pushbutton per item 15 may include underground utilities and limited right-of-way.

Standard:

- 17 When a pushbutton cannot be placed per the criteria in Section 4E.08, Paragraph 04 of the MUTCD for new signals and traffic signal rebuilds the design engineer shall document the constraints that make such placement impractical, justification for the proposed pushbutton placement, and any additional mitigation that will be provided. This document shall be maintained in the District Traffic Engineer's files.
- 18 All APS and APD shall meet VDOT standards, specifications, and special provisions. Non-traditional pedestrian signals and detection types, such as smartphone applications, are not and will not be approved for use at this time. Their use is pending further review of security and compatibility concerns as well as validation that such signal and detection types are an appropriate tool that will aid the communities they are intended to serve.
- 19 A documented engineering study, as defined in Section 1A.13 of the Virginia Supplement to the MUTCD, shall be the basis for a decision to deviate from a standard prescribed in this policy. The required documentation for any deviation shall be maintained in the District Traffic Engineer's files.
- 20 This Memorandum shall not itself trigger additional pedestrian accommodations improvements beyond those specifically identified. The scope of the larger improvement upgrade shall consider the requirements of other applicable policies, standards and guidance that may trigger installation or improvements of other pedestrian accommodations.

REFERENCES:

- [Americans with Disabilities Act of 1990](#)
- [IIM-TE-376.1](#): Americans with Disabilities Act Requirements of Maintenance and Operational Projects
- [IIM-TE-377.0](#) Program for Americans with Disabilities Act Compliance of Department Right-of-Way Assets.
- [2009 MUTCD](#) with revisions
- [2011 Virginia Supplement to the MUTCD](#) with revisions
- [2011 Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way](#)
- [VDOT Departmental Policy Memoranda \(DPM\) Manual, DPM Number 2-12, Implementation of the CTB Policy for Integrating Bicycle and Pedestrian Accommodation](#)

Appendix A: VDOT Accessible Pedestrian Signal (APS) & Accessible Pedestrian Signal Detector (APD) Improvement Requirement Scenarios

The following figures describe common Signal Alteration Activities and associated APS and APD improvement requirements.

These scenarios are not intended to be comprehensive, rather provide examples to guide engineering judgement in application of the standards and guidance established within this Memorandum. Refer to the standards and guidance in Paragraphs 11-17 for the specific technical criteria of the accessible improvement related to audible and vibrotactile indications, PROWAG Operations, and pushbutton placement.



