 Northern Region Traffic Engineering Practice	No. 403.1
<p align="center">Pedestrian Accommodations at Traffic Signals</p>	August 7, 2014

This practice shall supersede the January 7, 2005, memorandum with the subject “Pedestrian Guidelines”.

The provisions of this practice shall apply to traffic signals that are newly constructed, rebuilt, or significantly modified.

The provisions of this practice should be considered for application at other signals as needed, where feasible.

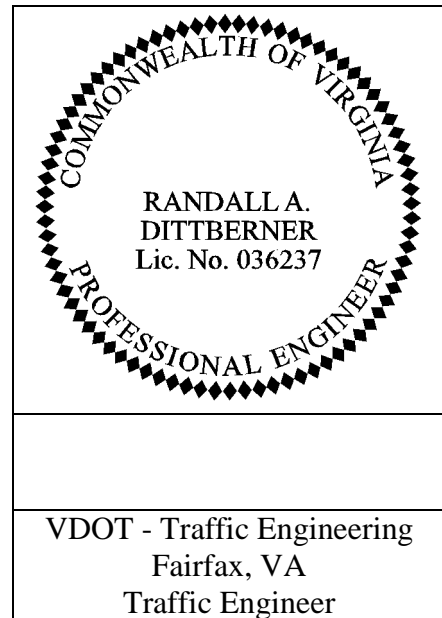
PEDESTRIAN SIGNAL HEADS

Pedestrian signal heads shall be provided to serve pedestrians crossing all legs of all signalized intersections, except where one or more of the exceptions below applies:

Exception 1: *Pedestrian signal heads should not be provided across a leg of an intersection where the WALK indication would be served at the same time as a green indication for a conflicting turn movement that can be made from more than one lane. **This exception shall be invoked only when a traffic study confirms that the multiple-lane turn movement is needed for current traffic operational reasons.** If the study finds that it is not needed, the turn movement should be designated as a single lane in order to provide pedestrian accommodations.*

Exception 2: Pedestrian signal heads may be omitted across a leg of an intersection where a traffic study determines that a pedestrian phase would significantly impede the traffic operational characteristics of the intersection or corridor. **This exception shall only be invoked with approval of the Regional Traffic Engineer.**

Exception 3: Pedestrian signal heads may be omitted across a leg of an intersection where there are no pedestrian facilities (such as sidewalks or curb ramps) or evidence of pedestrian activity on either end of the crossing. *If the crossing has pedestrian facilities on only one end, facilities on the other end should be considered for installation as part of the signal construction, reconstruction, or modification project.*



Exception 4: Pedestrian signal heads may be omitted across a leg of an intersection where pedestrians are prohibited from or unable to access one end of the crossing. For instance, it may be reasonable to invoke this exception where guardrail fully surrounds one corner of an intersection, and where the guardrail is unable to be modified or removed because of site constraints.

Exception 5: Unless otherwise required by the MUTCD or the Virginia Supplement, pedestrian signal heads may be omitted for a leg of an intersection where all of the following are true:

- Pedestrians crossing in both directions can clearly see the vehicular signal indications.
- The vehicular signal indications provide clear guidance to pedestrians crossing in both directions about the time during the signal cycle when it is safe to cross. (For instance, intersections with protected/permissive left-turns often cannot provide this clear guidance.)
- The length of the crosswalk, in feet, is shorter than $(Y + AR) \times 3.5$, where:
 Y = Duration of the yellow change interval, in seconds, applicable to the vehicular phase that runs concurrently with the crosswalk
 AR = Duration of the all-red clearance interval following Y , in seconds

Exception 6: Pedestrian signal heads may be omitted for crosswalks across one-lane channelized movements.

CROSSWALK MARKINGS

Marked crosswalks shall be provided at crossings controlled by pedestrian signal heads.

Marked crosswalks shall not be provided at crossings without pedestrian signal heads, except where the lack of pedestrian signal heads is due solely to Exception 5 or 6 above.

Information about crosswalk marking types can be found in Northern Region Traffic Engineering Practice No. 302.

PEDESTRIAN PUSHBUTTONS

Pedestrian pushbuttons shall be provided for all signalized pedestrian crossings equipped with pedestrian signal heads, unless both of the following are true:

- **The crosswalk operates concurrently with a vehicular phase that is guaranteed to be served every signal cycle at all times of day.**
- **The sum of the minimum WALK and flashing DONT WALK intervals for the crosswalk is less than or equal to the minimum green interval for the concurrent vehicular phase.**

Where both of these are true, pedestrian pushbuttons shall not be provided.

Usually these two conditions are met for pedestrian crossings of side streets, where the main street green is served whenever there are no calls from conflicting movements.

Where pedestrian pushbuttons are not provided for a signalized pedestrian crossing, the WALK indication shall appear every time the concurrent vehicular phase is served.

PEDESTRIAN PHASING

***WALK Extension.** Where the traffic signal controller is capable, the WALK indication should be lengthened beyond its minimum duration when the concurrent vehicular phase is guaranteed to be longer than the sum of the minimum WALK and flashing DONT WALK intervals. The WALK indication should be lengthened by an amount such that the flashing DONT WALK interval terminates at the same time as the concurrent vehicular green interval.*

The concurrent vehicular green indication may be long enough for WALK extension only during certain times of day. If so, the WALK indication may be served for different durations at different times of day.

Walk extension is normally appropriate for crossings of side streets, which are served concurrently with mainline green, when additional time in the signal phase may be available.

Rest In WALK Phasing. *At a crosswalk with pedestrian pushbuttons, a WALK indication should appear even if the pedestrian pushbutton has not been pressed, when the concurrent vehicular phase is guaranteed to be at least as long as the sum of the minimum WALK and flashing DONT WALK intervals that apply to that crosswalk.*

Rest in WALK may not be feasible in some situations, such as at intersections with railroad preemption.

The concurrent vehicular green indication may be long enough to provide Rest in WALK only during certain times of day. If so, there may be portions of the day when pedestrians will need to activate the pushbutton to serve the pedestrian phase.

Rest in WALK is normally appropriate for crossings of the side street, which are served concurrently with the mainline, where additional time in the signal phase may be available.

Rest in WALK may be used either with or without WALK extension.

Leading Pedestrian Interval. *Where a pedestrian phase is served at the same time as a conflicting permissive left-turn movement, a leading pedestrian interval (LPI) should be used when it does not significantly degrade the operational performance of the intersection. Leading pedestrian intervals may be used in other situations as well.*

During an LPI, all vehicular movements that conflict with the crossing shall be shown a red signal indication.

LPIs are often 4 to 7 seconds in duration, but may be longer if appropriate for site conditions.

LPIs are normally used for crossings of the mainline but may be used wherever appropriate for site conditions.

Both an LPI and Rest in WALK phasing should not be used for the same crossing. An LPI may be used either with or without WALK extension.