



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

400 Seventh St., S.W.  
Washington, D.C. 20590

November 4, 2004

Refer to: HOTO-1

Mr. Martin C. Livingston  
Traffic Engineer  
County of Burlington  
P.O. Box 6000  
Mount Holly, NJ 08060-6000

Dear Mr. Livingston:

Thank you for your October 26 letter to Mr. Scott Wainwright of our staff, requesting an official interpretation of the Manual on Uniform Traffic Control Devices (MUTCD) regarding the operation of traffic control signals based on pedestrian activations. In your letter and a subsequent phone conversation with Mr. Scott Wainwright, you have indicated that:

- You have several intersections along a light rail transit (LRT) corridor that have been signalized specifically to prevent traffic from queuing across the LRT tracks. These signals are normally operated in the yellow-red flashing mode and, as an LRT vehicle approaches, these signals transition to stop-and-go mode and utilize a preemption sequence to clear traffic off the tracks. After the LRT vehicle passes, the signals then transition back to the normal yellow-red flashing mode.
- Two of these intersections are established school crossings. You have determined that it is necessary to operate those signalized intersections with pushbuttons that enable pedestrians to activate a transition from flashing mode to stop-and-go mode, to stop the major road traffic and provide a pedestrian phase for crossing. Following the pedestrian phase, the signal transitions back to the normal flashing mode.
- These transitions from flashing mode to stop-and-go mode and then back to flashing mode are all made in accordance with Sections 4D.12 and 4D.13 of the MUTCD.

You have asked specifically whether operating the two signals at the school crossings in the manner described above is in conflict with Section 4E.03 (Applications of Pedestrian Signal Heads). Section 4E.03 describes the conditions under which pedestrian signal heads (upraised hand and walking person indications) shall or should be used in conjunction with vehicular traffic control signals. Section 4E.03 does not govern the operation of the pedestrian signal heads once a decision to install such heads at a given intersection has been made. Therefore, there is no conflict with Section 4E.03.



The MUTCD does contain several provisions applicable to your issue:

Section 4B.02 (Basis of Installation or Removal), Guidance: "Engineering judgment should be applied in the review of operating traffic control signals to determine whether the type of installation and the timing program meet the current requirements of all forms of traffic."

- Section 4D.01 (General), Guidance: "Engineering judgment should be used to determine the proper phasing and timing for a traffic control signal."
- Section 4D.03 (Provisions for Pedestrians), Standard: "The design and operation of traffic control signals shall take into consideration the needs of pedestrian as well as vehicular traffic."
- Section 4D.03 (Provisions for Pedestrians), Guidance: "Where pedestrian movements regularly occur, pedestrians should be provided with sufficient time to cross the roadway by adjusting the traffic control signal operation and timing to provide sufficient crossing time every cycle or by providing pedestrian detectors."

To summarize these provisions, selection of the proper operation and phasing of a traffic control signal is a matter of engineering judgment, but the needs of pedestrians shall be taken into consideration in all cases. You have obviously taken pedestrian needs into consideration and apparently you have exercised your engineering judgment in determining the proper phasing and operation of the two intersections to meet the current requirements of all forms of traffic.

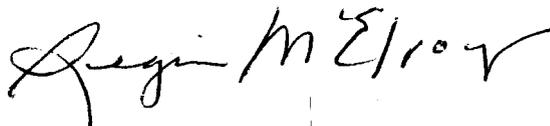
In consideration of the above, it is our interpretation that a signal operation as you have described, featuring pedestrian activation to initiate a transition from flashing mode to stop-and-go mode and implemented as a result of the application of engineering judgment, is consistent with MUTCD principles and is not in violation of any MUTCD provision.

Nevertheless, the chosen operation is unusual and may not be anticipated by either pedestrians or other road users. It is therefore recommended that special word-message signs be developed and installed with the pushbuttons to inform pedestrians of the special nature of the signal operation, and that public information also be provided to drivers through appropriate media. Also, care should be exercised in setting up the preemption and pedestrian phase operations to properly and safely address how these potential conditions will be handled:

- Activation of LRT preemption during the pedestrian phase; and
- Pedestrian pushbutton calls registered during LRT preemption.

Thank you for writing on this subject. If you have any questions, please call Mr. Wainwright at 202-366-0857. Please note that we have assigned your request the following official interpretation number and title: "4-285(I)—Pedestrian Activation of Signal Operation." Please refer to this number in any future correspondence on this matter.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Regina S. McElroy". The signature is fluid and cursive, with the first name "Regina" being the most prominent.

Regina S. McElroy  
Director, Office of Transportation  
Operations

cc: Mr. Roger Wentz, ATSSA



Scott Wainwright  
Office of Transportation Operations  
Federal Highway Administration, Room 3408  
400 Seventh Street SW  
Washington, DC 20590

October 26, 2004

Re: Programmed Flash- Traffic Signal  
Operation

Dear Mr. Wainwright:

The County of Burlington and New Jersey Transit are requesting your assistance in clarifying Sections 4D-12 and 4E-03 of the Manual on Uniform Traffic Control Devices. Specifically, we are in need of a clarification using a programmed change from yellow-red flashing mode to steady (stop-and-go) mode. We are proposing to use this type of operation during the activation of railroad preemption or the activation of the pedestrian push buttons at two school crossings.

New Jersey Transit has recently begun operating a Light Rail System between Camden and Trenton along the Delaware River in New Jersey. A majority of the system runs through Burlington County. During the planning of the Light Rail System the Diagnostic Team determined that traffic signals should be installed at every grade crossing to prevent traffic from queuing across the tracks.

In the Boroughs of Palmyra and Riverton there are nine crossings. Several of the crossings are only a couple of hundred feet apart. Once all of the signals had been constructed and placed into operation progression could not be attained through this cluster. It was finally agreed to by the respective entities that the traffic signals installed at the direction of the Diagnostic Team would be operated in a programmed flashing mode that would be capable of providing the required preemption sequences upon activation by the light rail vehicle. It was further agreed that this operation would be evaluated for a six-month period to determine whether this could be a permanent operation.

Two of the signals operating in the programmed flash mode are established school crossings manned by crossing guards. Burlington County would like to have these two signals operate in the stop-and-go mode with either pedestrian actuation or railroad activation. It is our intent to use the pedestrian push buttons instead of a time of day operation to reinforce the fact that the traffic signal will provide a pedestrian operation every time the push buttons are actuated. It is also our intent to design a specific pushbutton message to inform pedestrians how the signal operates.

Is there a violation of the intent of Section 4E.03 Application of Pedestrian Signal Heads, if the transitions from yellow-red flash to stop-and-go mode and back to yellow-red flash are in accordance with Section 4D.12 Flashing Operation of Traffic Control Signals and Section 4D.13 Preemption and Priority Control of Traffic Control Signals?

Thank you for your assistance regarding this matter.

Sincerely,

Martin C. Livingston  
Traffic Engineer  
856-642-3725 (O)  
856-642-3730 (F)  
mlivingston@co.burlington.nj.us

Cc: Joseph G. Caruso, P.E., County Engineer  
Joyce Gallagher, Assistant General Manager, NJT River Line