

TO:		ENGINEERING INSTRUCTION	
SUPERSEDED BY <u>EB 06-004</u> EFFECTIVE <u>9/7/06</u>		NEW YORK STATE DEPARTMENT OF TRANSPORTATION	
		SUBJECT: FLASHING ARROWBOARDS - USE & PROCEDURES	
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Flashing arrow boards are very effective in advising drivers of lane closures and the need to change lanes. Because they exert such a powerful influence on driver behavior, they have become commonplace in work zones. Guidelines for the use of arrow boards are provided by the NYS MUTCD, by Section 619 of the Standard Specifications (1990) and by a Main Office insert which is incorporated in Addenda No. 1 to the Standard Specifications of 1990.

However, flashing arrow boards are sometimes used for applications other than their intended function. The purpose of this EI is to provide guidelines and technical information that will ensure the proper use of this equipment. These guidelines shall be followed on all Department projects, effective July 19, 1993. This EI should also be filed in the CSM, Section 619.

Two of the most basic principles of traffic engineering are that a traffic control device (1) should be used only when it meets a specific need, and (2) should always be used in a consistent manner. Unnecessary and nonstandard applications are undesirable, because they tend to reduce motorists' respect for the device. Nonstandard applications require a considered response rather than an automatic response and, over time, they will detract from the overall effectiveness of traffic control devices such as arrow boards.

To ensure that flashing arrow boards are used consistently, the following policy is established regarding the use of arrow boards on all Department construction contracts.

Applications

1. Flashing arrow boards shall be used for lane closures on all multilane highways where the legal speed limit or the operating speed is 45 mph or higher. Arrow boards may be used for lane closures on other multilane highways if the project designer or the EIC determines that high traffic volumes or other considerations would warrant their use. For the purpose of this document, a lane closure is defined as a merging of traffic resulting from a reduction in available lanes.
2. Only one arrow board should be used for each lane closed, except for center lane closures and for moving work zones as described in point #7. Use of multiple arrow boards to emphasize a stationary lane closure is prohibited. To accomplish a center lane closure, the left or right lane should be closed first (using either a flashing left arrow or a flashing right arrow) and the remaining lanes should then be split around the work area (using a flashing double headed arrow).
3. Arrow boards shall be used for lane splits on multilane highways where the legal speed limit or the operating speed is 45 mph or higher. For the purpose of this document, a lane split is defined as a splitting of travel lanes around a work area without a reduction in the number of lanes.
4. Arrow boards shall not be used for lane shifts. Other devices are readily available for this purpose (i.e. warning signs, chevrons, arrow panels, flags, warning lights, etc.) This policy is more restrictive than the current NYS and current federal MUTCDs, but is consistent with the new federal MUTCD to be adopted in 1993. For the purpose of this document, a lane shift is defined as a lateral shift in travel path without a reduction in the number of lanes.
5. Arrow boards in the flashing arrow mode are not to be used as a warning device for shoulder work or for roadside work near the shoulder. Vehicle warning lights, signs, and channelizing devices are more effective for these situations and are the preferred treatment. An arrow board in the non-directional caution mode shown in the MUTCD is permitted as an option.
6. Arrow boards in the flashing arrow mode are not to be used on two-lane, two-way roadways, either in a driving lane or on the shoulder, under any circumstances. Such use may result in a head-on collision. An arrow board in the non-directional caution mode shown in the MUTCD is permitted as an option.

7. Arrow boards should always be used in combination with appropriate signs, barricades or other traffic control devices.

Arrow Board Location

8. Arrow boards should be positioned as close as practicable to the beginning of the lane closure taper (on the shoulder, if space permits), allowing consideration of sight distance restrictions, shoulder widths and other factors. Care must be taken to align the arrow board properly, considering approach grade and curvature, so as to provide optimum visibility to approaching motorists. Whenever possible, a lane closure taper should not begin just past the crest of a vertical curve or partially into a horizontal curve. Warning signs should be located so as to avoid obscuring the arrow board.
9. For moving operations, arrow boards should be mounted on the first (upstream) vehicle fully occupying a travel lane. If more than one travel lane is taken, an arrow board should also be mounted on the first (upstream) vehicle fully occupying each additional travel lane that is closed. Additional arrow boards can be mounted on intermediate vehicles located between two travel lanes that are closed, or on vehicles further upstream which are located either partially or fully on the shoulder adjacent to a travel lane that is closed.
10. For moving operations, an advance warning vehicle equipped with appropriate static signs, warning lights and other devices, should be positioned fully on the shoulder upstream of the arrow board, if traffic and roadway conditions so indicate.

Operational Modes

11. The arrow board shall display a flashing arrow for lane closures. Other operational modes, such as sequential chevrons, sequential arrows or stem arrows, are explicitly prohibited for these applications, and shall not be used on Department projects. Note that this policy is more restrictive than the current NYS and Federal MUTCDs, but is more consistent in its assignment of one operational mode to one application.
12. Arrow boards used for a traffic split shall display only a flashing double-headed arrow.
13. If used as a general warning device on a shoulder or elsewhere, the arrow board shall display the non-directional caution mode described in the MUTCD. Display of a flashing bar is explicitly prohibited, and shall not be used on Department projects.

Other Requirements

14. Arrow boards used at night shall be properly dimmed as described in the MUTCD and the Standard Specifications to avoid glare for approaching motorists.
15. Except as noted above, all other provisions of the MUTCD relating to arrow boards - size, type, style, location and all other requirements - shall be adhered to at all times. See especially Section 294.5 of the NYS MUTCD for details.
16. The requirements of the Standard Specifications and/or Special Specifications relating to arrow boards shall be adhered to at all times.

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