

## Work Zone Signing

Advance warning should be installed for drivers entering the TTC zone from cross streets. ROAD WORK AHEAD signs on intersecting roadways shall be installed if the motorist will not encounter another advance warning sign prior to reaching the activity area except for moving and mobile operations.

As a general rule, signs should be located on the right-hand side of a two-way roadway and on both the right and left sides of a multi-lane divided roadway. See the "TTC Distance Charts" for the advance warning sign spacing distance called "A". When special emphasis is needed, signs may be placed on both the left and right sides of a two-way roadway. Signs, although ordinarily mounted on posts for long term operations, may be mounted on or above barricades or on temporary supports. The temporary sign supports shall be compliant with NCHRP 350 testing standards (see the NCHRP 350 Minimum Standards). Signs mounted on temporary supports should not be placed in the open traveled lane where they pose a hazard to traffic. Generally these signs are placed on the shoulder or in the parking lane of the street or highway. The signs should not be blocked from view by parked vehicles, trees or other sight obstructions on or near the roadway.

Signs shall not be mounted on existing traffic sign, posts or other utility structures without permission from the proper authority. The bottom of signs mounted on barricades or temporary supports shall be no less than one foot above the traveled way. All regulatory signs on portable supports shall be mounted with a minimum mounting height of 4 feet measured from the ground to the center of the sign face.

Some activity areas move slowly down a roadway and away from the operation's advance signing. The distance from the last advance warning sign to the activity area should not allow the motorist to forget the existence of the temporary traffic control zone. For high-speed streets and rural highways, the maximum distance from the last sign to a point where the driver detects the activity area shall not exceed one mile. In urban areas, the number of intersections shall be considered and this distance reduced accordingly.

All advance warning signs shall be at least 48" x 48" in size when used on high speed roadways. Warning signs used on low speed roadways shall be at least 36" x 36" in size. **Smaller signs may be used as approved by the governing road authority** where larger signs become an additional hazard to motorists and pedestrians.

On multi-lane divided roadways, where the median shoulder is narrow (less than 6 feet, the 48" x 48" advance warning signs, as shown on the TTC layouts, may not fit on the left side of the roadway. Where this situation occurs, one of the following options may be used:

- A.) Reduce the left side signs sizes, or
- B.) Eliminate the left side signing, use an additional RIGHT LANE CLOSED (or LEFT as appropriate) sign on the right side, and require the use of an arrow panel on the shoulder at the beginning of the lane closure taper.

## **Optional Signs**

Several signs are shown on the TTC layouts as optional or have factors that may make them optional. Some advance warning signs may be omitted for low speed roads and/or if the duration will be less than an hour. Read the associated notes on each layout for options. The ONE LANE ROAD AHEAD sign is an example of a sign that is only required for higher speeds. The BE PREPARED TO STOP sign is shown as optional on most TTC layouts. This sign is usually added to the compliment of signs when restricted sight distances warrant additional warning to the motorist or the advance warning area becomes extremely long due to sight distances or a move of the operation.

**All advance warning signs shall be removed, covered, or turned to face away from traffic when they are no longer required or appropriate.**

## **NCHRP Report 350 Testing Compliance**

FHWA policy requires that all roadside appurtenances, including temporary traffic control devices, meet the crashworthy performance criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features".

On high speed state highways, all temporary traffic control devices, including Type A and Type B channelizing devices, Type III barricades, and sign support structures, shall be crashworthy. Although it is recommended that low speed highways and local jurisdiction roadways also use crashworthy devices, those roadways have a compliance date of January 17, 2010.