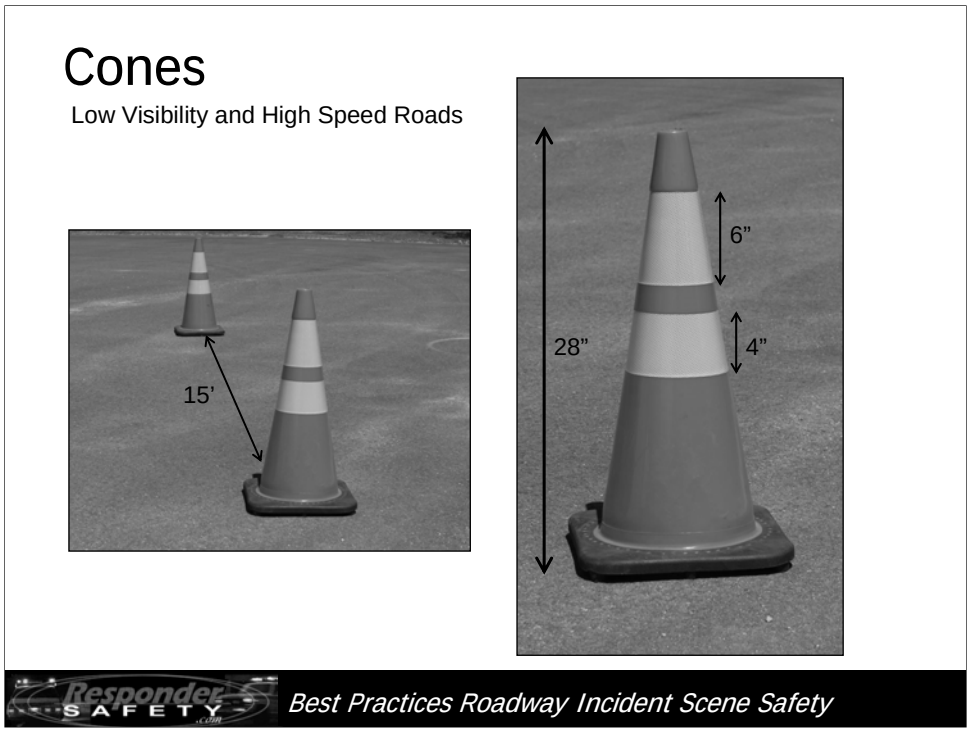
Devices used for TTC

- ✓ Temporary traffic control devices
  - Traffic cones
  - Warning signs

Example of cones and signs as traffic control at a roadway incident.

This sequence of slides provides guidance on the type and use of devices used for temporary traffic control at emergency incidents.

Note that the signs in this slide are positioned very close to the incident location. Best practice would position signs away from the immediate incident to provide maximum advanced warning to oncoming traffic. In this incident signage would be appropriate on both sides of the incident due to the closure of one travel lane on a two lane road.



MUTCD Section 6F.59 Cones (see Figure 6F-7, Sheet 1 of 2) shall be predominantly orange and shall be made of a material that can be struck without causing damage to the impacting vehicle. For daytime and low-speed roadways, cones shall be not less than 450 mm (18 in) in height. When cones are used on freeways and other high-speed highways or at night on all highways, or when more conspicuous guidance is needed, cones shall be a minimum of 700 mm (28 in) in height.

For nighttime use, cones shall be retroreflectorized or equipped with lighting devices for maximum visibility. Retroreflectorization of cones that are 700 to 900 mm (28 to 36 in) in height shall be provided by a 150 mm (6 in) wide white band located 75 to 100 mm (3 to 4 in) from the top of the cone and an additional 100 mm (4 in) wide white band located approximately 50 mm (2 in) below the 150 mm (6 in) band.

Retroreflectorization of cones that are more than 900 mm (36 in) in height shall be provided by horizontal, circumferential, alternating orange and white retroreflective stripes that are 100 to 150 mm

(4 to 6 in) wide. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any nonretroreflective spaces between the orange and white stripes shall not exceed 75 mm (3 in) in width.

Best Practice: For applications at emergency incidents it is recommended that cones be a minimum of 28 inches in height with retroreflective stripes as specified by the MUTCD. These devices will be suitable for the wide variety of conditions that may be present when they are used.

Cone Spacing vs. Speed

Speed Limit (mph)	Cone Spacing On Taper (feet)	Cone Spacing Past Taper (feet)
<25	25	50
30	30	60
35	35	70
40	40	80
45	45	90
50	50	100
55	55	110
60	60	120
65	65	130
70	70	140

Note: To approximate distances in the field either measure your pace length or us the “Skip line” method, most skip lines are on a 10-30 pattern. This means that the line is ten feet long and the space between each line is thirty feet, therefore the distance from the start of one line to the start of the next is forty feet.

Warning Signs for TTC

- ✓ Warning signs used in the TTC
  - Fluorescent pink background
  - Black letters and border
- ✓ Signs should be positioned to provide maximum advanced warning to oncoming traffic

Section 6I-1 Warning and guide signs used for TTC traffic incident management situations may have a black legend and border on a fluorescent pink background (see Figure 6I-1).

Section 6F.16 Position of Advance Warning Signs Guidance: Where highway conditions permit, warning signs should be placed in advance of the TTC zone at varying distances depending on roadway type, condition, and posted speed. Table 6C-1 contains information regarding the spacing of advance warning signs. Where a series of two or more advance warning signs is used, the closest sign to the TTC zone should be placed approximately 30 m (100 ft) for low-speed urban streets to 300 m (1,000 ft) or more for freeways and expressways.

Support: Various conditions, such as limited sight distance or obstructions that might require a driver to reduce speed or stop, might require additional advance warning signs.

Option: As an alternative to a specific distance on advance warning signs, the word AHEAD may be used.

Support: At TTC zones on lightly-traveled roads, all of the advance warning signs prescribed for major construction might not be needed.

Option: Utility work, maintenance, or minor construction can occur within the TTC zone limits of a major construction project, and additional warning signs may be needed.

Guidance: Utility, maintenance, and minor construction signing and TTC should be coordinated with appropriate authorities so that road users are not confused or misled by the additional TTC devices.

Advanced Warning Sign Placement

- For low-speed streets advance warning signage should be a minimum of 100 feet from the first apparatus
- Distances should be increased to approximately 4 to 8 times the speed limit on higher speed urban streets

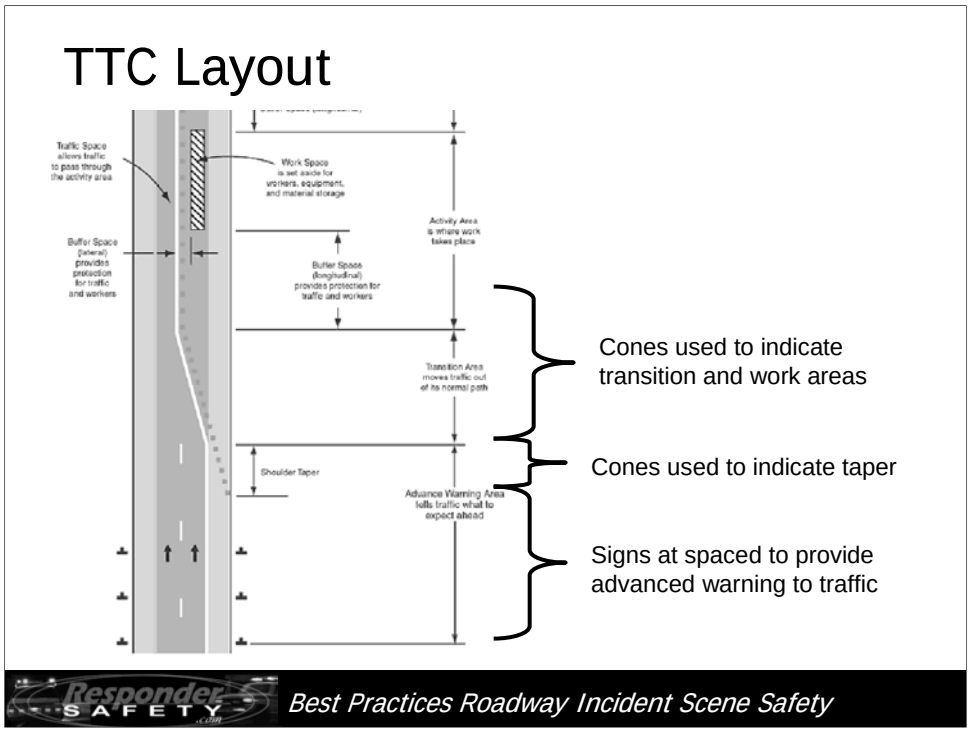
Section 6C.04 Advance Warning Area

Support: The advance warning area is the section of highway where road users are informed about the upcoming work zone or incident area.

Option: The advance warning area may vary from a single sign or high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle to a series of signs in advance of the TTC zone activity area.

Guidance: Typical distances for placement of advance warning signs on freeways and expressways should be longer because drivers are conditioned to uninterrupted flow.Therefore, the advance warning sign placement should extend on these facilities as far as 800 m (0.5 mi) or more.

On urban streets, the effective placement of the first warning sign in meters (feet) should range from 0.75 to 1.5 times the speed limit in km/h (4 to 8 times the speed limit in mph), with the high end of the range being used when speeds are relatively high. When a single advance warning sign is used (in cases such as low-speed residential streets), the advance warning area can be as short as 30 m (100 ft). When two or more advance warning signs are used on higher-speed streets, such as major arterials, the advance warning area should extend a greater distance (see Table 6C-1).



This slide depicts the component parts of a temporary traffic control zone. Specific distances for sign spacing are found in MUTCD Table 6C-1. Cone spacing is found on the table provided on Slide 3 and in the MUTCD Section 6F.