

Safe Traffic Movement Is No Accident

The Manual on Uniform Traffic Control Devices

Whether your driving takes you across state lines, county lines, or from one city to the next, one constant in your life is traffic control. By and large you know the speed limit, in what lane to drive, where not to park, and where to expect a stopped school bus - all without conscious thought. And, all due to the consistent and uniform signage upon which we have come to rely.

The MUTCD 2000 Millennium Edition is the new standard



The **Manual on Uniform Traffic Control Devices** is the reason our understanding of traffic signing is second nature to us. Published by the U.S. Department of Transportation's Federal Highway Administration, the **MUTCD** is the national standard¹ for all traffic control devices installed on any street, highway or bicycle

trail open to public travel. As the name suggests, the MUTCD brings uniformity to the way the nation's streets and highways are marked and signed without regard to jurisdictional boundaries. State Departments of Transportation must adopt a uniform system of traffic control consistent with the MUTCD, which in turn becomes the standard to which local governments must conform.

The MUTCD provides guidance for the use of signs, pavement striping, barricades, traffic signals, and construction zone traffic controls, among other devices. The underlying objective of the Manual is to optimize the performance and the safe movement of traffic by defining standards for the design and use of traffic control devices (**TCDs**). The MUTCD Millennium Edition, with an effective date of January 17, 2001, replaces the most recent updated edition published in 1988. It is important for those responsible for traffic safety to review the new standards and guidelines for both significant and subtle changes to even the most familiar parts of the Manual. The new manual applies to all new facilities and allows for the phasing-in of upgrades for existing facilities. The MUTCD can be visited online at <http://mutcd.fhwa.dot.gov>.

Some general areas of change found in the Millennium Edition include: larger lettering on signs, all signs to be retroreflective or illuminated, less reliance on some symbols, more explanatory signs, greater use of advisory signs, and exclusive use of the diamond (◇) symbol for High Occupancy Vehicle (HOV) lanes. The Manual has been reformatted to include uniform signage for traffic calming and a new section on traffic control for low volume roads.

TCDs should:

Fulfill a need

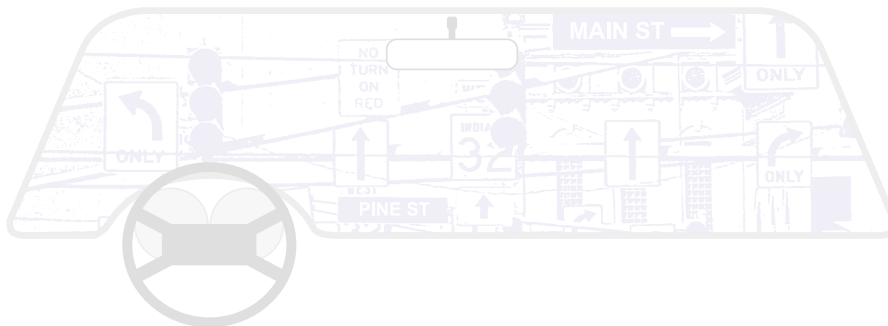
Command attention

Convey a clear, simple meaning

Command respect of road users

Give adequate time for proper response

TCD Requirements: Traffic control devices are visual guidance and navigation tools used to help manage roadway safety by providing for the orderly and predictable movement of traffic. To be of value TCDs should: fulfill a need, command attention, convey a clear and simple meaning, command respect of road users, and give adequate time for proper response.



To accomplish this, the MUTCD outlines five basic considerations in evaluating a traffic control device:

- 1. Design:** Size, color, shape, reflectivity and simplicity of the device and message must combine to produce clear meaning and command respect.
- 2. Placement:** Placement such that the device will command attention and allow a driver traveling at a normal speed adequate time to properly act, and not be overwhelmed with confusing messages.
- 3. Operation or Application:** The device must be applied consistently so road users know what to expect, and what is expected of them, based on their prior exposure to the device in similar situations.
- 4. Maintenance:** Maintenance standards should be high so traffic control devices remain in a like-new condition. For example, systematic replacement of signs will allow reflectivity levels to be maintained.
- 5. Uniformity:** Uniform signage simplifies the tasks expected of road users and traffic enforcement officials.

Responsibility: The MUTCD, under federal law, is the national traffic control standard¹. States are required to adopt a uniform system of traffic control devices by January 17, 2003 that substantially conform to the rules detailed in the MUTCD. States may differ in how they comply with those standards, based on individual state regulations. In many cases, state highway agencies and local governments are responsible for installation and maintenance of traffic control devices. Equally important to the overall system of devices is a responsibility to regularly assess the on-going need for a control device. A change in traffic conditions may dictate the change or removal of select signals, pavement markings or barriers. An engineering study can help identify updates, changes or enhancements required for existing traffic control devices.

Engineering Analysis: The MUTCD recommends that the selection and use of a traffic control device be based on an engineering analysis that addresses certain threshold conditions, or warrants, for a given device. According to the MUTCD, a warrant describes threshold conditions to be addressed in evaluating the potential safety and operational benefits of traffic control devices and is based upon average or normal conditions. Warrants are not a substitute for engineering judgment. The fact that a warrant is met is not conclusive justification for the installation of the device. For example, for a traffic signal, at least one of eight warrants must be met. It should be noted that in the new manual, the previous 11 warrants have now been consolidated into eight.

Application of experienced engineering judgment, in conjunction with the MUTCD, will help local authorities meet their traffic control obligations and achieve a safe and efficient transportation system in their communities.

¹ The MUTCD is adopted by reference in accordance with Title 23, United States Code, Section 109(d) and Title 23, Code of Federal Regulations, Part 655.603, and is approved as the national standard for designing, applying and planning traffic control devices.

Case-In-Point: Perhaps the traffic control device most requested at the local level, and sometimes most debated in its installation, is the **STOP** sign. While uncontrolled intersections in residential neighborhoods are not without traffic rules, these intersections are often considered to be inherently unsafe.



Many aspects of an intersection must be considered during a **STOP** sign needs assessment. If a study supports installing a **STOP** sign, normally the roadway carrying the lesser amount of traffic will be stopped. This decision, which sometimes runs counter to the desires of area residents, is in keeping with the underlying philosophy of the MUTCD: maximizing safe traffic movement.

Requests for **STOP** signs may also be made in hopes that it will slow traffic if installed on the busier street. Published studies indicate **STOP** signs are not effective in controlling speeds beyond a relatively short distance from the sign; in fact, the MUTCD specifies that **STOP** signs not be used for speed control.