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Project Development Manual on Uniform Traffic Control Devices (MUTCD) Applying the MUTCD to Aid Safety and Reliability

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This manual helps agencies ensure that proper traffic control devices are in place for road users



Every transportation agency in the United States uses the Manual on Uniform Traffic Control Devices, or MUTCD, to deploy signs, traffic signals, pavement markings, and other traffic control devices that route traffic and alert motorists of potential hazards.

This standardized method of communication helps road users, no matter where they are in the country, understand the road ahead and how to avoid collisions. Agencies that fail to apply the MUTCD standards risk exposure to litigation.



Let's review the contents of the MUTCD and learn how agencies use the manual to make decisions about traffic control devices.

The MUTCD has nine parts.

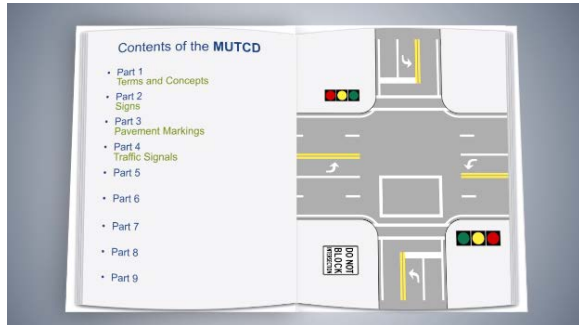


To improve public safety and reduce liability exposure, substantial conformance with MUTCD standards is critical. As traffic volume and roadway conditions change, agencies must continually reassess their roadways and work zones to ensure proper design and placement of traffic control devices.

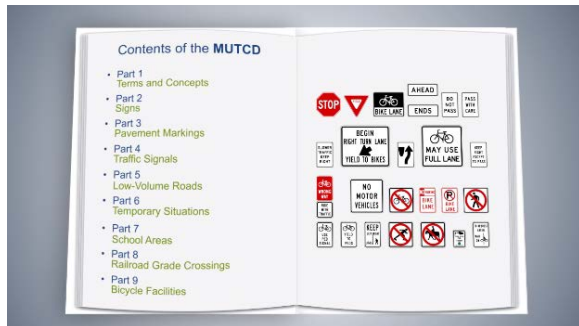


Part 1 defines terms and introduces the concept of standards, guidance, and options. More specifically, the standards define what every agency must do, and the guidance and options designate what they should or may do. Part 1 also provides regulatory background and additional

information that assists the reader in using the manual.

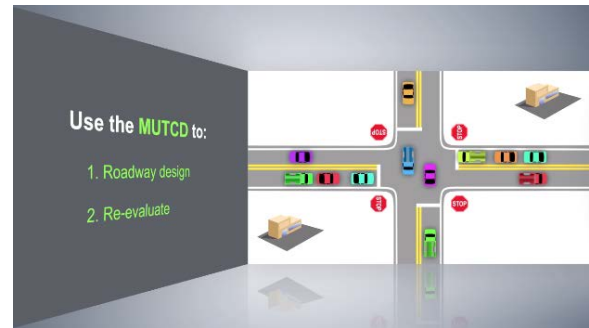


Parts 2, 3 and 4 address the three classes of traffic control devices: signs, pavement markings, and traffic signals. In these sections, readers learn about each device's design, placement, maintenance, and the conditions for use.



Parts 5 through 9 address the use of devices for specialty applications and provide typical examples of use. Specifically, Part 5 addresses low-volume roads, Part 6 describes temporary situations, like work zones or special events, Part 7 examines school areas, Part 8 highlights railroad grade crossings, and Part 9 covers bicycle facilities.

During roadway design, transportation engineers use the MUTCD to identify the most appropriate traffic control system for the specific road type and the anticipated traffic volume.



When actual traffic volumes grow beyond what was originally anticipated or collisions increase, existing traffic control devices need to be evaluated to improve safety. For example, the addition of a traffic signal to control the right-of-way at an intersection or pavement marking to provide turn lanes will decrease the severity of crashes. Therefore, agency staff should monitor changes in traffic volume and collisions and use the MUTCD to decide whether changes in traffic control are needed. Whether designing or reassessing a roadway, always use the standard most appropriate for road conditions.

To illustrate how agencies use the MUTCD, let's follow a maintenance supervisor on a project to repair a storm sewer drain on a residential street.

According to the work order, repairs will take place at a single location, where the traffic is anticipated to be light, less than 50 cars per hour, and the speed limit is 25 mph. The supervisor thinks his crew can finish the repairs within 4 hours.



This project description leads to a typical MUTCD application, specifically, Lane

Closure on a Minor Street. The standard describes an advance sign with an option for a work vehicle that has a truck-mounted attenuator. The MUTCD also describes conditions when flaggers might be required.

Anticipating that drivers will be able to decide when it's safe to pass the work zone, the supervisor has the standard signage put in place.

However, when he arrives at the work zone, the supervisor sees heavy traffic in the eastbound lane and a backup in the westbound lane. To pass the work zone, many drivers accelerate too quickly.



In situations like this, when traffic does not self-regulate, the standard in the MUTCD requires the addition of flaggers, which the supervisor immediately arranges to manage the right-of-way.

Responsibilities:

- Apply **MUTCD** standards
- **Reassess** and **allocate** the appropriate traffic control devices

If your agency has jurisdiction over a road, it's responsible for applying MUTCD standards. And as our example illustrates, when traffic control does not appear to be working for the road user, your agency must reassess and allocate the appropriate traffic control devices. This assessment is made for permanent installations and temporary situations.

For questions about applying the MUTCD, contact your State department of transportation. Additional training is also available through the local technical assistance program.

Additional Resources

- Link to the official copy of the current MUTCD
<http://mutcd.fhwa.dot.gov/>
- Link to the MUTCD's Standard Highway Signs and Markings Book
http://mutcd.fhwa.dot.gov/ser-shs_millennium.htm
- Electronic Federal Code of Regulations covering regulatory authority for the MUTCD
<http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&sid=b7cc2200066b6240b626b1c8b19d2291&rqn=div6&view=text&node=23:1.0.1.7.30.2&idno=23>
- Information on the requirement for all signs to be maintained at a minimum level of retroreflectivity.
http://safety.fhwa.dot.gov/roadway_dept/night_visib/
- Information on requirement for all types of roadside hardware, including permanent and portable sign supports and guardrails.
http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/

The content of this document is not a substitute for information obtained from State departments of transportation, appropriate FHWA Division Offices, and applicable laws. Scenarios have been simplified for emphasis and do not necessarily reflect the actual range of requirements applicable to the scenario or this topic. This document was created under contract number DTFH61-11-D-00025 by the Federal Highway Administration, U.S. Department of Transportation, and is offered to the public to heighten and focus awareness of Federal-aid requirements within the local public agencies community and reinforces the importance of these necessary policies, procedures, and practices.

This Companion Resource is the script content for the video production of the same name.