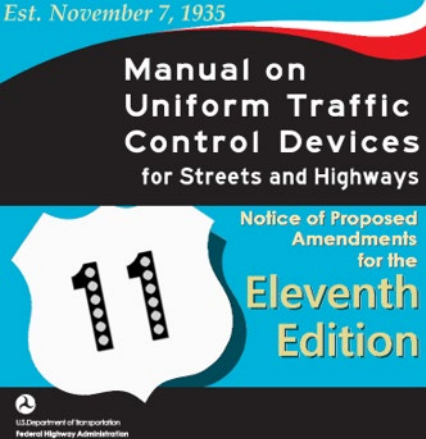




welcome to

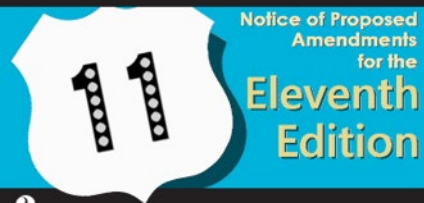
*The Manual on Uniform Traffic Control Devices
for Streets and Highways (MUTCD)*
Proposed Urban Traffic Control Provisions
April 1, 2021 2:00 – 4:00 pm ET

- Audio will begin playing over the computer close to the webinar start time.
- All audio is listen-only.
- Use the phone for audio only if the computer audio is not working for you.
- Type your questions into the Q&A pod. Questions will only be seen by the host and presenters. FHWA may not be able to answer all questions.
- Use the Q&A pod to describe any technical issues you are experiencing. A moderator will respond and try to assist.
- A link to the webinar recording will be emailed after the webinar.

The FHWA is committed to providing equal access to this webinar for all participants. Closed captioning is provided in this webroom and participants needing sign language interpreting service may follow the link in the Useful Links pod on the left labeled “Sign Language Interpreter Service” to access an MS Teams connection to an interpreter.



**Manual on
Uniform Traffic
Control Devices
for Streets and Highways**



U.S. Department of Transportation
Federal Highway Administration

Presents the

Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)

Urban Traffic Control Provisions Proposed for the Eleventh Edition

As published in the Notice of Proposed
Amendments in the *Federal Register*
on December 14, 2020

Presented April 1, 2021



U.S. Department of Transportation
Federal Highway Administration

FHWA's Traffic Control Devices Team

Kevin J. Sylvester, P.E., PTOE

Team Leader, Traffic Control Devices

Marty Calawa, P.E.

Technical Lead, Guide and Motorist Information Signs

J. Eric Ferron, P.E.

Technical Lead, Temporary Traffic Control

Dave Kirschner, P.E.

Technical Lead, Pavement Markings and Bicycle Facilities

Duane Thomas, P.E.

Technical Lead, Highway Traffic Signals and Railroads/LRT

Matt Zeller, P.E.

Technical Lead, Regulatory and Warning Signs, School Zones

contact us

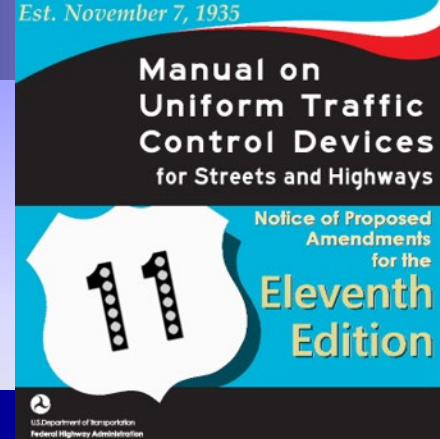
<https://mutcd.fhwa.dot.gov>



Guidelines and Format

- All lines are muted
- Please use your computer audio if possible
- Approx. 60 minutes of presentation
- Brief Q&A to follow
 - ☐ **Enter your questions into the chat pod at any time during the presentation**
- Recording will be made available at the MUTCD Web site





Webinar Recordings

March 18.....Introduction and Highlights

March 25.....Pedestrians, Bicycles, Transit

Available at the MUTCD Web site

for more information

<https://mutcd.fhwa.dot.gov>



What can you expect from this Presentation?

- Provide background on the MUTCD
- Highlight a few of the major proposed changes related to Urban centers and Urbanized and Developed environments
- Familiarize you with how to submit comments...



It is important to be mindful that the NPA represents a proposal, not a finalized new edition of the MUTCD. This is why your comments are needed!



What does a new MUTCD mean to you?

- Enhanced **safety**
- Improved **multimodal mobility**
- Bring the MUTCD up to date
- Form the foundation for more frequent revisions



Your comments are critical to making the next edition of the MUTCD the best that it can be. Therefore, we want you to be comfortable with the comment process.



Why is the MUTCD is important?

- **Uniformity is key to the road user**
 - Treat **similar situations** in a **similar way**
 - **Context** matters in all situations
 - **Simplifies the task of road users** by providing instant recognition for immediate response
- **Uniformity does not have to mean inflexibility**
 - Not a “one-size-fits-all” approach
 - Considers the road user first of all



Background The MUTCD



MUTCD Origins

■ Early History

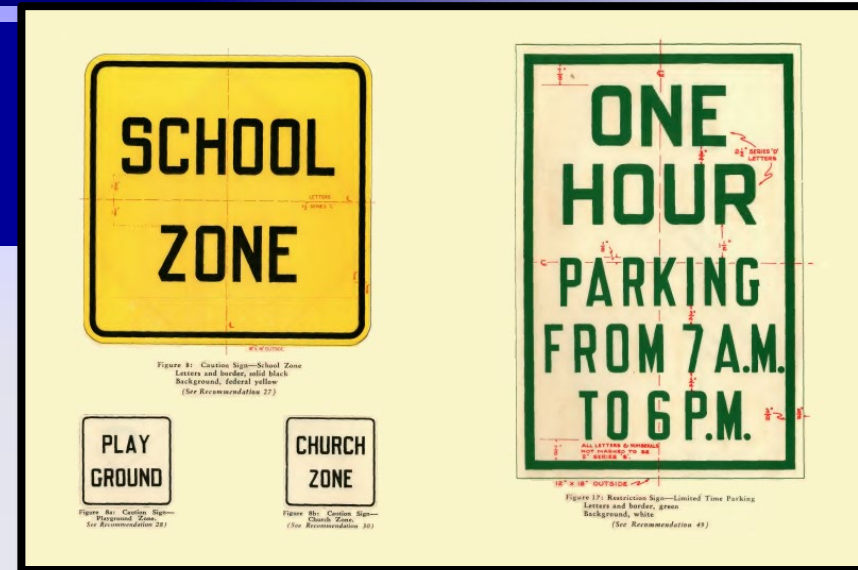
The Prequel

□ 1927, AASHO

Manual and Specifications for the Manufacture, Display, and Erection of U.S. Standard Road Markers and Signs (Rural Roads)

□ 1930, Nat'l Conference on Street and Highway Safety (NCSHS)

Manual on Street Traffic Signs, Signals, and Markings (Urban Streets)



What is the MUTCD?

MUTCD \ 'em-yü-, tē-sē-dē\ ¹ *n* (ca. 1935): the national standard for traffic control devices on all roads open to public travel in the United States.

¹ Not \ 'myüt-sid\, \ 'mæt-sid\, or \ 'mæt-kid\.



What is the MUTCD?

- **A human-centered, data-driven** safety and operational protocol
- **Effective** traffic control
- **Uniform system** of signs, signals, and markings
- **Ultimately, the MUTCD is about the road user**
 - ☐ Pedestrians
 - ☐ Bicyclists
 - ☐ Motorists

All with differing levels of abilities and limitations.



What is the MUTCD . . . not ?

- **Not a street or highway design standard**
- Other resources (policies, manuals, guides) offer standards on the physical infrastructure
 - Road design
 - Sidewalks, ramps, accessibility
 - Curbs and roadside barriers
 - Physical traffic calming features
- Integration of physical design and TCDs advocated during planning process



What is the MUTCD . . . not ?

- **Not a comprehensive safety manual**
 - *Roadside Design Guide*
 - *Highway Safety Manual*
 - “Green Book” (Geometric Design)
 - Pedestrian Safety Guide/Countermeasures
 - Other guides
- **Not a policy or directive on how to use your roads and streets**
 - Agency administrative functions, policies

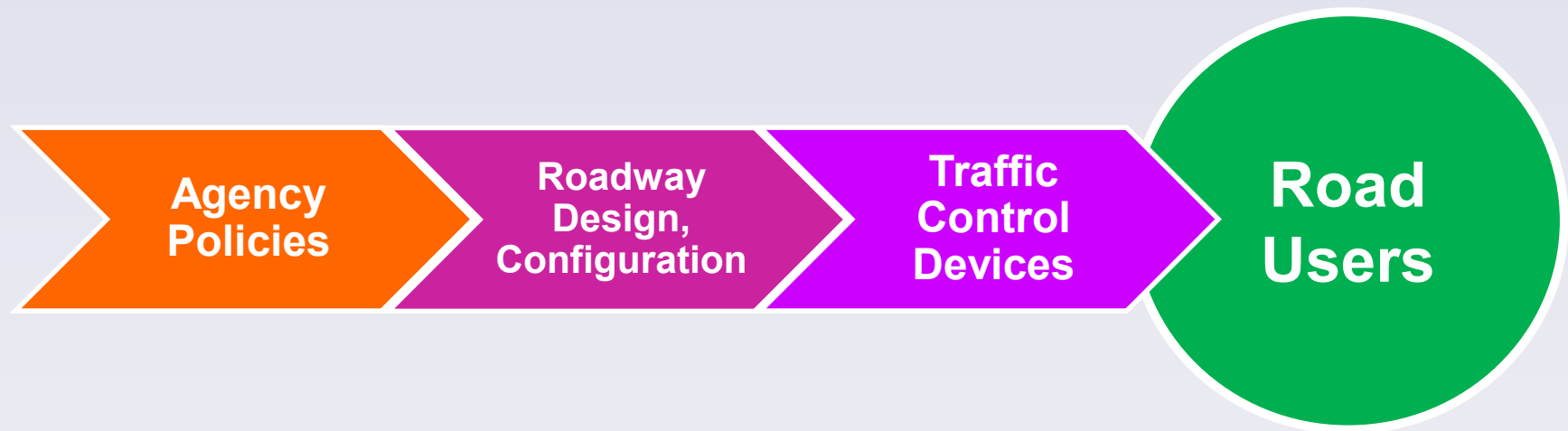


What is the MUTCD . . . not ?

- **Not a traffic engineering textbook or applications handbook**
 - *Traffic Engineering Handbook*
 - *Highway Safety Manual*
 - *Traffic Control Devices Handbook*
 - Agency Design Manuals
- **Not a “cookbook”**
 - Requires application of engineering principles



What is the MUTCD . . . not ?



Agency policies set the uses of the roads and streets. Those uses inform their design. The traffic control devices then communicate the design intent to the road user.



Overview

Proposed MUTCD 11th Edition



Overview

- **647 changes** described in *Federal Register* notice (Preamble)
- 781* pages mark-up proposed text
- 523 Figures
 - 257 Existing
 - 151 Revised
 - 145 New
- 68 Tables
 - 31 Existing
 - 26 Revised
 - 11 New

* Excluding Appendix, 3 pages.



The Proposal

- The proposed MUTCD is available under the “**Supporting Documents**” that are posted to the docket. These include:
 - Proposed MUTCD **Text** (mark-up and clean versions)
 - Proposed MUTCD **Figures**
 - Proposed MUTCD **Tables**
 - **Regulatory Impact Assessment** (Benefit-Cost Analysis)



All documents are separate files and are not integrated as they would be for the new edition of the MUTCD.



Proposed Changes Urban Traffic Control



General Topics

- Purpose of the MUTCD: *what is the MUTCD for?*
 - Establish national criteria to meet the needs and expectancy of road users
- “Traffic Control Device” defined: *what is a TCD?*
 - And what isn’t a TCD
- Target Road Users: *who are TCDs developed for?*
 - Vehicle operators
 - Pedestrians
- Use of the MUTCD: *who is the MUTCD written for?*



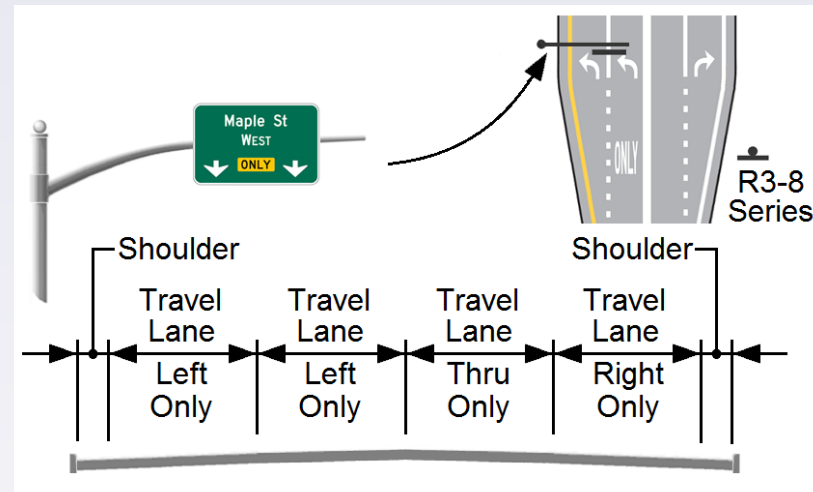
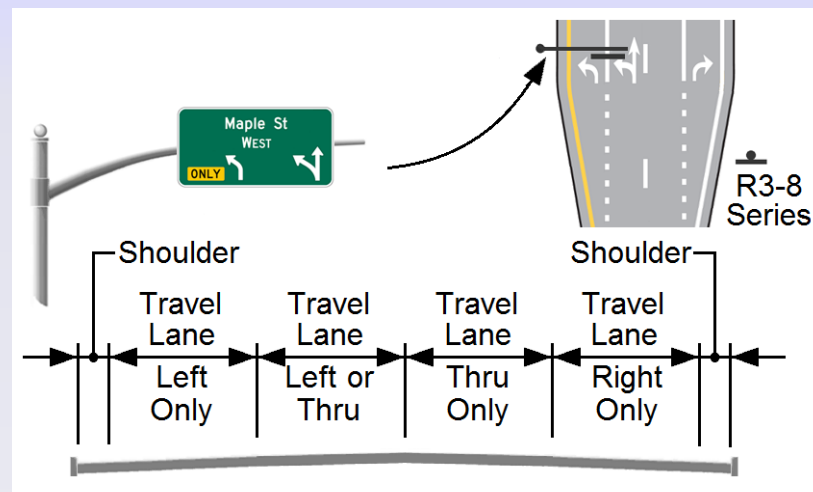
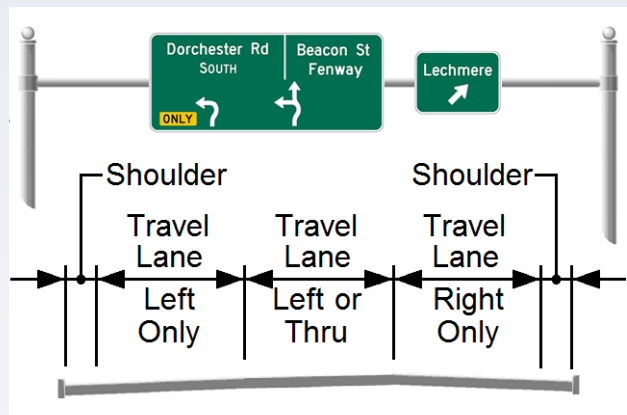
General Topics

- Function and Purpose of Signs
 - Signs for Rules of the Road
- “Sign Clutter” defined: *when is it “TMI”?*
 - Reduces effectiveness
 - Undue or excess informational load



Overhead Signs on Conventional Roads

- Proposed letter sizes commensurate with context
 - Smaller signs: mast-arms, lighter-weight structures
 - Better suited to urbanized conditions where needed



Unsignalized Intersection Control

- Proposed revisions comprehensively address the need for unsignalized intersection control
- Based on results of recent research
- New warrants for All-way Stop control
- Reframes and expands existing All-way Stop control guidance and clarifies factors for practitioners to consider



Unsignalized Intersection Control

- All-way Stop control warrants:
 - ☐ Crash Experience
 - ☐ Sight Distance
 - ☐ Transition to Signal Control or Yield Control at a Roundabout
 - ☐ Peak-Hour Volume (Vehicle, Ped, Bike)
 - ☐ Other Factors

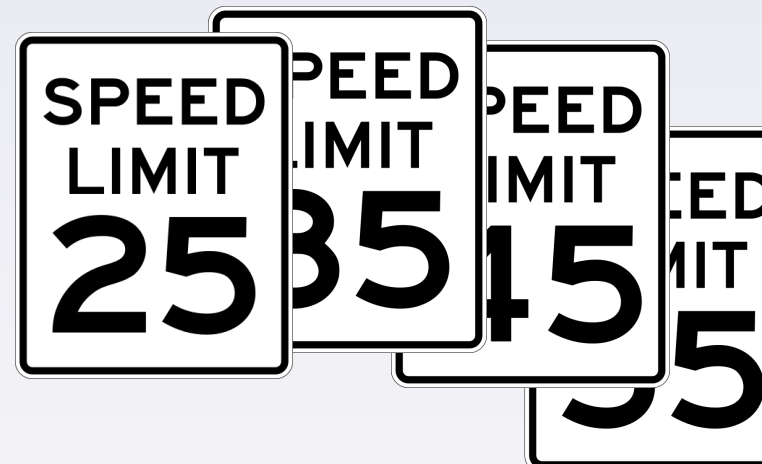


***The decision to establish All-way Stop control is based on an engineering study.
(NOT A CHANGE FROM 2009 MUTCD)***



Speed Limits

- Greater flexibility to recognize differing roadway contexts
- Clarifies the use of the 85th-percentile speed
- Reorganizes and revises material, considers NTSB recommendations



Speed Limits

2009 MUTCD (Current)

Engineering study **required**

Speed distribution in study
required

Factors included in the
engineering study are
optional

These are in addition to
recommended use of the
85th-percentile speed

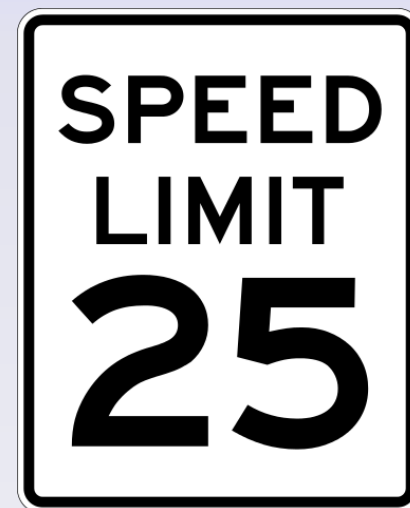
Proposed for 11th Ed.

Engineering study **required**

Speed distribution in study
recommended

Expanded factors included
in the engineering study are
recommended

Better clarifies applicability
of these factors, as well as
of the 85th-percentile speed



Speed Limits

- Expanded factors in the engineering study that are **recommended**:
 - Speed distribution of free-flowing vehicles
 - 85th-percentile, pace, past speed studies
 - Crash experience
 - Road characteristics
 - Lane widths, shoulder condition, grade, alignment, median type, sight distance
 - Road context
 - Roadside development and environment, functional classification, curbside uses and activity, pedestrian activity, bicycle activity



Speed Limits

2009 MUTCD (Current)

When a speed limit within a speed zone is posted, it should be within 5 mph of the 85th-percentile speed of free-flowing traffic.

Proposed for 11th Ed.

Posted speed limit should be within 5 mph of 85th-percentile speed applicable only to:

- ☐ Freeways
- ☐ Expressways
- ☐ Rural highways

Does not apply to other roadway classifications

New Support directs practitioners to resources (e.g. USLIMITS2) that can assist establishing or re-evaluating speed limits within speed zones.



Speed Limits

■ What it all means...

- NPA proposes to **change the speed distribution consideration to Guidance**
- Greater **flexibility** to accommodate **differing roadway contexts**
- Improved **clarity** that the **engineering study** determines which factors prevail in setting a speed limit

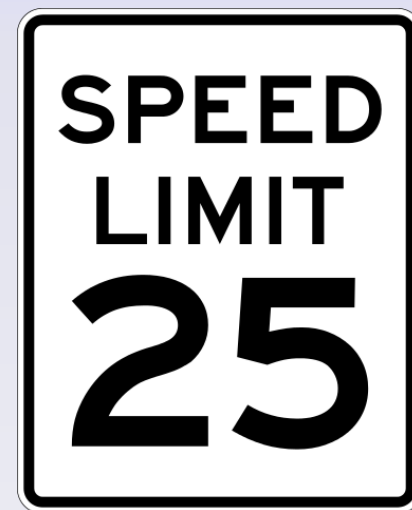


Context is a primary factor in all aspects of design. The proposed changes are intended to make it clear that this is especially true in setting speed limits.



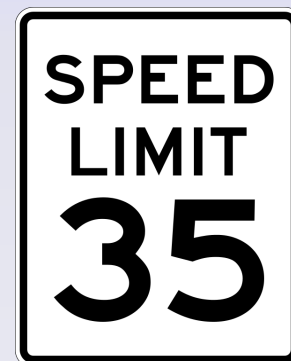
Speed Limits

- **Requesting your input on other NTSB recommendations**
 - Remove the 85th-percentile speed altogether as a consideration in setting speed limits
 - Require use of an expert system to validate a speed limit that has been determined through engineering study



Vehicle Speed Feedback Sign

- **Standardized designs** for sign and plaque
- Background color is yellow as the sign message is a warning, not a regulation
- Provisions for use with Speed Limit sign and Horizontal Alignment signs



Parking, Standing, and Stopping Signs

- New Mobile Parking Payment plaque
- New Electric Vehicle Parking and Charging signs



Low Clearance Signs

- Clarify signing practice
 - Where the clearance is less than 12 inches above the statutory maximum vehicle height
- Lane-specific Low Clearance Overhead Sign when clearance varies



- **5-year compliance date** based on critical nature of infrastructure



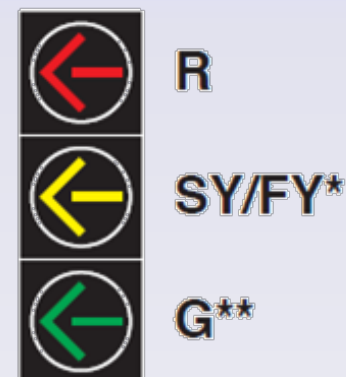
Low Ground Clearance Grade Crossing Sign

- **5-year compliance date** for new recommendation:
 - Warning and Selective Exclusion signs in addition to or in place of Low Ground Clearance sign
 - Signing of diversion route for excluded vehicles
- Provides additional advance notice to other vehicle types that face potential risk of hanging up at a grade crossing.



Flashing Yellow Arrow Signals

- Adopts Interim Approval 17
- Improves safety and provides more left-turn phasing options
- Optional use in three-section and five-section signal faces
- Flashing and steady yellow arrows in same signal section



Signal Warrants

- Studies and Factors for Traffic Signals
 - Engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location.
 - Numerical Warrants.
 - Comparing existing operation and safety vs potential improvement.
- Using **projected** vehicle and pedestrian volumes in the warrants analysis.
 - Allowed in current MUTCD (Section 4C.01) and retained in the NPA.



Signal Warrant 7 – Crash Experience

- Adopts Interim Approval 19
- Expand criteria:
 - ☐ 1-year and 3-year crash evaluation periods
 - ☐ Crash type and severity
 - ☐ Population
 - ☐ Speeds greater than 40 mph
 - ☐ Intersection geometry



Pedestrian Safety Devices

- Proposed Recommendation: Pedestrian signal heads recommended at each marked crosswalk at signalized intersections
- Enhanced guidance for push button locations with new figures
- New Option for “touch-free” pedestrian push buttons



Pedestrian Safety Devices

■ Interim Approval 21 – Rectangular Rapid-Flashing Beacons (RRFBs)

- ☐ Use at intersections
- ☐ Use with free-flow right-turn lanes



■ Pedestrian Hybrid Beacons

- ☐ Allow use at intersections with side streets and driveways
- ☐ New Standard to prohibit bicycle signal faces at PHBs

■ Warning Beacons, RRFBs, and In-Roadway Warning Lights at Crosswalks

- ☐ New recommendation to use **Audible Information Device** similar to Accessible Pedestrian Signals



Potential Impact of PROWAG Rulemaking

- **U. S. Access Board** Proposed Rulemaking on Public Rights-of-Way Accessibility Guidelines (PROWAG)
 - Accessible Pedestrian Signals at signalized intersections
 - Use of Accessible Pedestrian Signals where a Leading Pedestrian Interval is provided
 - Use of traffic control signals and PHBs for crosswalks at roundabouts



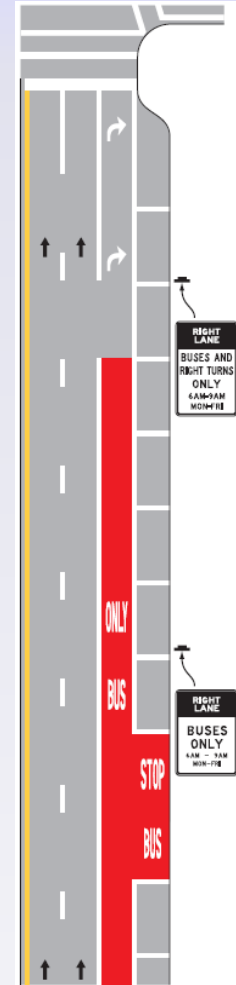
Pedestrian Accessibility in Work Zones

- Revised guidance statements related to **sidewalk closure** during construction and accessible pedestrian access.
- Eliminate “level of usage by pedestrians with disabilities” as a criteria for accessibility-related design decisions.
- Eliminate existing MUTCD text that suggests the accommodation of pedestrians with disabilities is sometimes unnecessary.



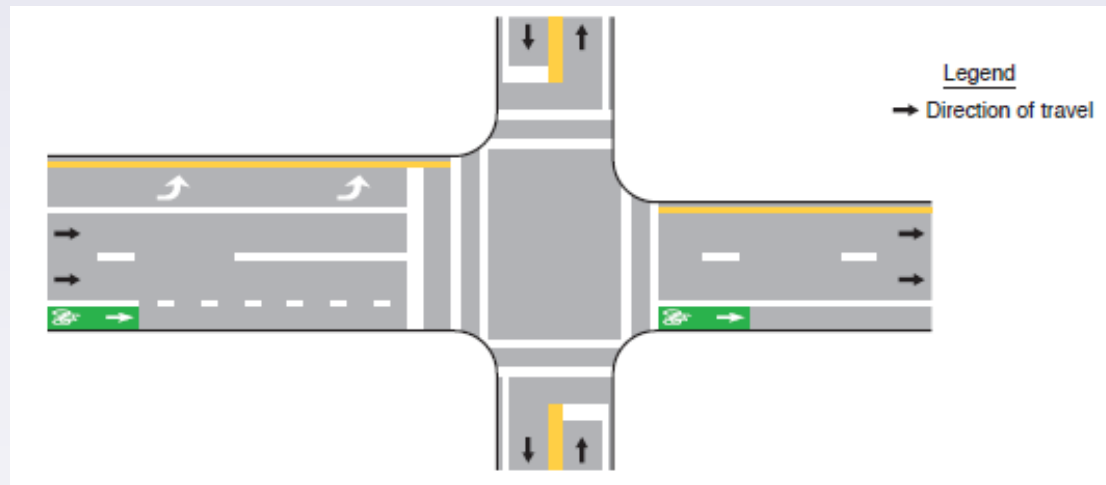
Red-Colored Pavement for Transit Lanes

- New to the MUTCD to add conspicuity to restricted lanes
- Based upon research results in cities around the country under FHWA Experimentation and Interim Approval
- Positive operational effects
 - Reduces illegal/improper use of lanes, both operating and parking
 - Reduces travel time for transit vehicles



Green-Colored Pavement for Bicycle Facilities

- New to the MUTCD to add conspicuity to bicycle-only facilities
- Positive operational effects
 - Increases all road users' awareness of bicycles
 - Reduces conflicts between bicycles and motor vehicles



Bicycle Facilities – Selected New Signs

- Lane Control Signs Including Bicycle Facilities



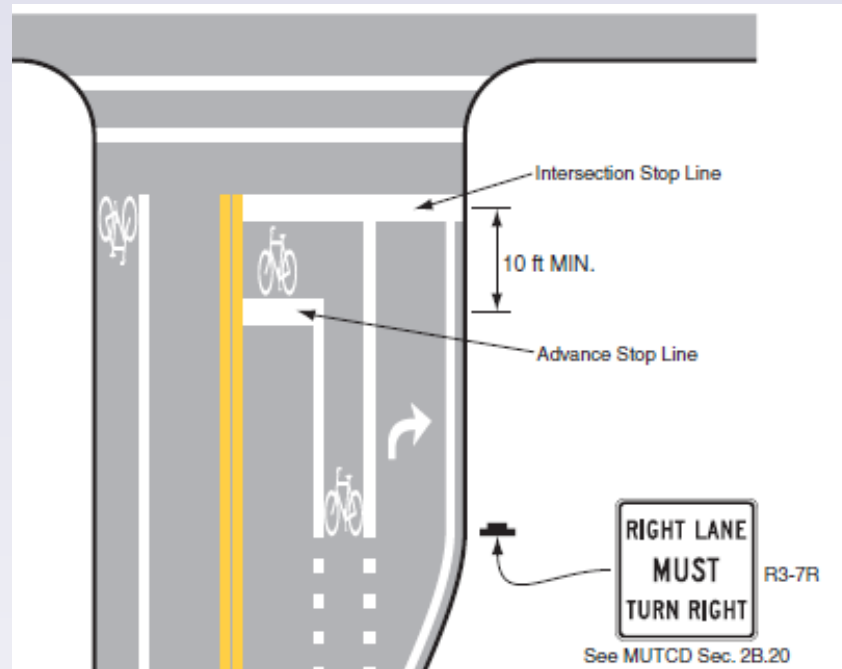
Interim Approvals – Proposed for Inclusion

- Green-Colored Pavement (detail in Part 3)
- Bicycle Signal Faces
- Two-Stage Bicycle Turn Boxes



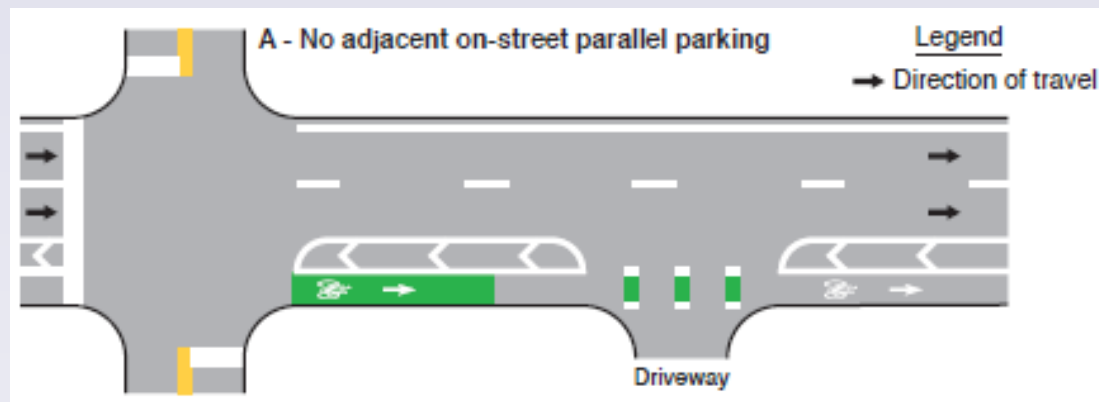
Interim Approvals – Proposed for Inclusion

■ Intersection Bicycle Boxes



Bicycle Facilities

■ Buffered Bicycle Lanes

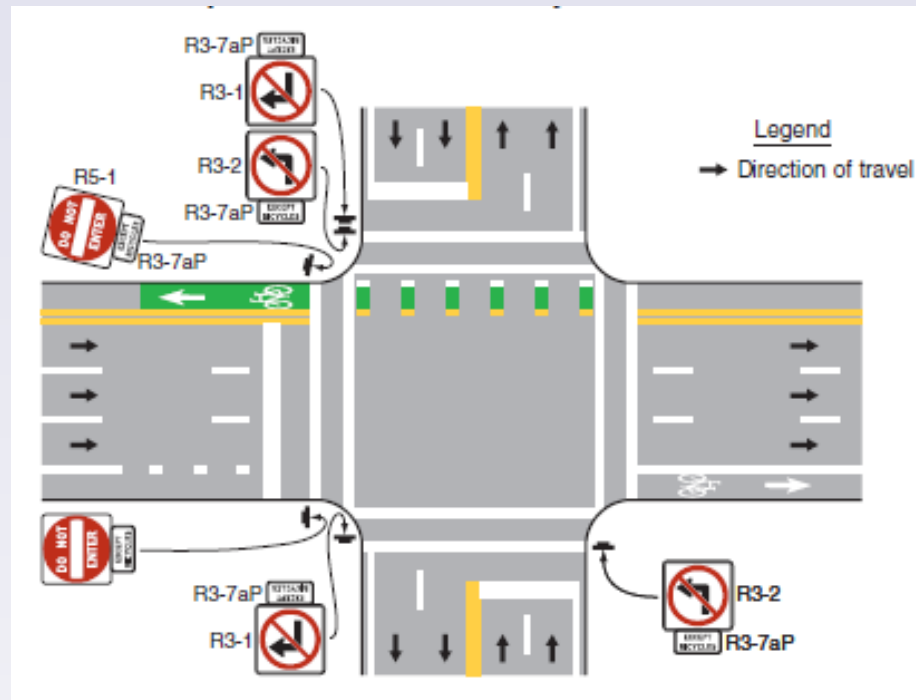


■ Separated Bicycle Lanes



Bicycle Facilities

■ Counter-Flow Bicycle Lanes



New Line Widths

- Based on Research on Human Drivers and Automated Driving Systems
- Change Normal width lines to 6" wide for freeways and roadways with speed limits > 40 mph; 4"-6" wide for all other roadways
- Change Wide lines to 8" in width if 4-5" normal lines are used and 10" in width if 6" normal lines are used



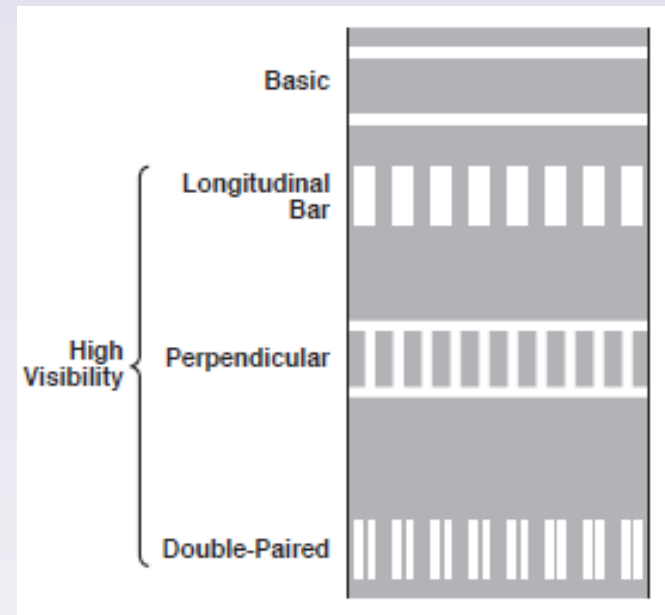
Crosswalks

- The MUTCD does not include warrants or thresholds for the installation of marked crosswalks
- The decision of when to mark a crosswalk is left to the responsible agency and the design engineer
- New content based on research into perception and recognition of crosswalk markings



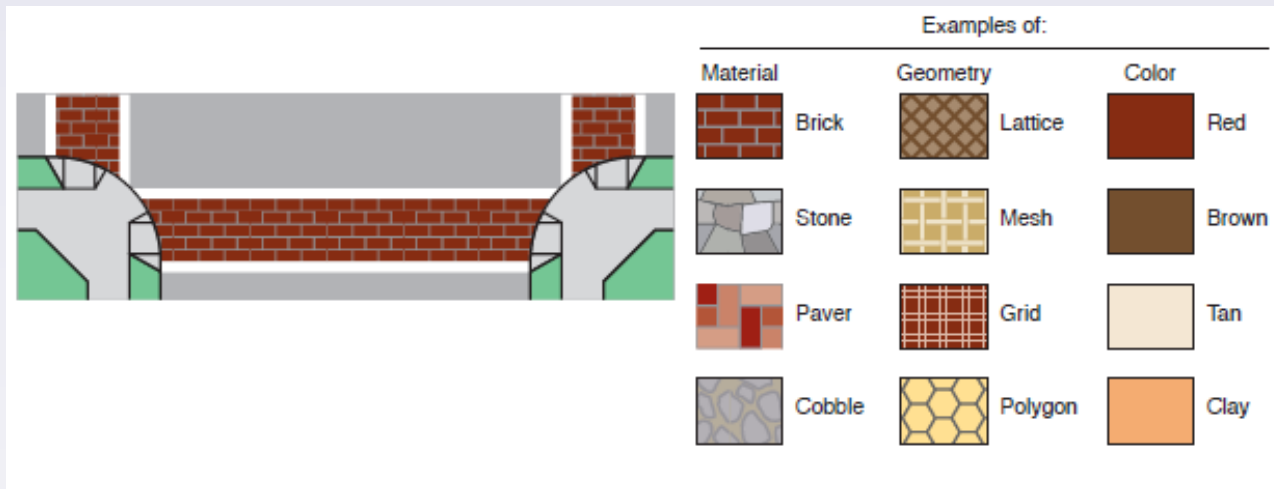
Crosswalks

- Additional safety measures recommended beyond crosswalk markings alone, to provide safer crossings
- New content on the decision process when considering crosswalk marking types



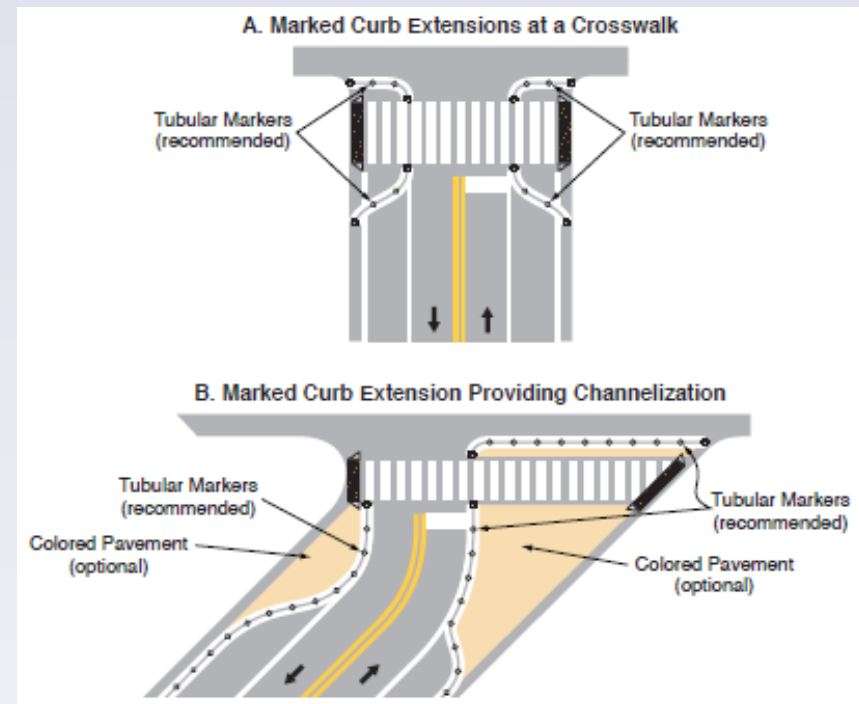
Crosswalks

- NPA includes several aesthetic treatment options
- Multicolor treatments under research
 - Road user distraction
 - Recognition and understanding by pedestrians with low vision



Curb Extensions Designated by Pavement Markings

- New Section provides for the use of double lines to define curb extensions
- Recommendations
 - Colored pavement or diagonal lines for emphasis
 - Physical separation (tubular markers) where pedestrians expected



Submitting Comments



Submitting Comments

- Access the **Public Docket** at

www.regulations.gov

Docket ID No. **FHWA-2020-0001**

- Comment period ends **May 14, 2021**
 - ☐ Any individual, agency, group, organization, or other entity is free to comment
 - ☐ All comments will be taken into consideration in finalizing the new edition of the MUTCD



Navigating the Public Docket

Regulations.gov
Your Voice in Federal Decision Making

An official website of the United States Government. 

SUPPORT

Search bar: FHWA-2020-0001 [X] Search

Navigation: Dockets Documents Comments

REFINE DOCKETS RESULTS ?

Docket Type —
Rulemaking (1)

Agency —
☐ Federal Highway Administration (1)

Unified Agenda ?
These filters only apply to a subset of Dockets included in the Regulatory Agenda

EO 13771 Designation ?
☐ Fully or Partially Exempt (1)

Priority ? —

SEARCH RESULTS

SORT BY Best Match ▾

Displaying 1 - 1 of 1 results

RULEMAKING
National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision
Agency Federal Highway Administration | Docket ID FHWA-2020-0001



Navigating the Public Docket

An official website of the United States Government. 

Regulations.gov
Your Voice in Federal Decision Making

SUPPORT

R RULEMAKING DOCKET

National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision

Created by the **Federal Highway Administration**

[Share](#) [Subscribe](#)

 **Docket Details**

 **Unified Agenda**

 **Browse & Comment on Documents** 9

 **Docket ID**
FHWA-2020-0001

 **Comments Received**
497
[More Details](#)

Docket Details

RIN 
2125-AF85

Abstract

The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) is incorporated in FHWA regulations and recognized as the national standard for traffic control devices used on all public roads. The purpose of this notice of proposed amendments is to revise standards, guidance, options, and supporting information relating to the traffic control devices in all parts of the MUTCD. The proposed changes are intended to update the technical provisions to reflect advances in technologies and operational practices, incorporate recent trends and innovations, and set the stage for automated driving systems as those continue to take shape.

U.S. Department of Transportation
Federal Highway Administration

58

Navigating the Public Docket

An official website of the United States Government. 

Regulations.gov
Your Voice in Federal Decision Making

SUPPORT

R RULEMAKING DOCKET

National Standards for Traffic Control Devices; the Manual on Uniform Traffic Control Devices for Streets and Highways; Revision

Created by the **Federal Highway Administration**

[Share](#) [Subscribe](#)

[Docket Details](#) [Unified Agenda](#) **[Browse & Comment on Documents](#) 9**

REFINE RESULTS 

☐ Only show documents open for comment (2)

Document Type

☐ Supporting & Related Material (6)

☐ Proposed Rule (3)

Posted

SEARCH RESULTS

Search 

PROPOSED RULE

National Standards for Traffic Control Devices: Manual on Uniform Traffic Control Devices for Streets and Highways; Revision

Agency Federal Highway Administration | **Posted** Dec 14, 2020 | **ID** FHWA-2020-0001-0001

[Comment](#)

Comments Due May 14, 2021



Navigating the Public Docket

REFINE RESULTS ?

☐ Only show documents open for comment (2)

Document Type —

☐ Supporting & Related Material (6)

☐ Proposed Rule (3)

Posted —

Last 90 Days (3)

Custom Dates

Comments Due —

Next 90 Days (2)

Custom Dates

SEARCH RESULTS

Search

SORT BY Comments Due (Newer-Older) ▾

PROPOSED RULE

National Standards for Traffic Control Devices: Manual on Uniform Traffic Control Devices for Streets and Highways; Revision

Agency Federal Highway Administration | Posted Dec 14, 2020 | ID FHWA-2020-0001-0001

[Comment](#)

Comments Due May 14, 2021

SUPPORTING & RELATED MATERIAL

MUTCD Proposed Text

Agency Federal Highway Administration | Posted Dec 14, 2020 | ID FHWA-2020-0001-0004

SUPPORTING & RELATED MATERIAL

MUTCD Proposed Tables

Agency Federal Highway Administration | Posted Dec 14, 2020 | ID FHWA-2020-0001-0006

SUPPORTING & RELATED MATERIAL

MUTCD Proposed Figures

Agency Federal Highway Administration | Posted Dec 14, 2020 | ID FHWA-2020-0001-0005

SUPPORTING & RELATED MATERIAL

MUTCD NPA RIA

Agency Federal Highway Administration | Posted Dec 14, 2020 | ID FHWA-2020-0001-0003

SUPPORTING & RELATED MATERIAL

MUTCD Comment Form

Agency Federal Highway Administration | Posted Dec 14, 2020 | ID FHWA-2020-0001-0002

Preamble

Proposed
Text,
Tables,
Figures

Regulatory
Impact

Comment
Form



How do I use these documents to comment?

- The **Preamble** is the official document of the proposed changes to the MUTCD
 - Describes proposed changes by Section
 - Discusses rationale for proposed changes
- **Supporting documents** (Text, Tables, Figures)
 - Proposed mark-up and clean versions of proposed text
 - Proposed Tables
 - Proposed Figures



*These documents **should be reviewed together** for the most complete understanding of the changes.*



What if I don't see my comment?

- Comments are not immediately visible
 - It might take a day or so for your comment to be visible to the public in the docket
 - Your comment is assigned a tracking number and
 - You can refer to this number in any inquiries to the Dockets Management office to track the status of your comments



Regulations.gov has FAQs on the process that will provide answers to many of your questions.



We need to hear from you!

- Whether you like a proposed change, or disagree with it, we would like to know
- Include rationale for your position
 - How will the proposed change affect traffic operations, safety, uniformity?
 - Are there significant cost impacts not considered?
 - Is there data, research, or experimental findings to support a different position?



Providing supporting material for your comment can be just as important as the comment itself.



What kind of comments are you looking for?

- Didn't see what you were looking for?
 - ☐ If a change that you wanted to see was not proposed, we want to hear that too
 - ☐ However, we are limited in what we can do in this rulemaking
- Comments on topics not specifically proposed
 - ☐ Could be used to refine this rulemaking
 - ☐ Can influence a future revision
 - ☐ Suggested new content can shape future research needs to address new issue, future experimentation



What kind of comments are you looking for?

- Multiple submissions of similar comments
 - ☐ Quality of the comments is the primary consideration
 - ☐ Greater weight not given solely due to volume
 - ☐ However, volume can indicate areas for further exploration of unmet needs
- How are comments evaluated?
 - ☐ Impact on operation, safety, uniformity
 - ☐ Research and other data-driven information

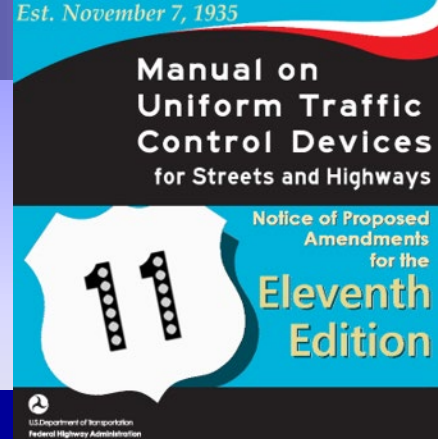


What can I expect next?

- What happens after I submit comments to the docket?
 - ☐ Entries to docket are assigned a unique number
 - ☐ Entries are catalogued and compiled for analysis
 - ☐ All comments are reviewed and considered
 - ☐ Final determinations are made whether to retain, revise, or remove the proposed change

- ***When will I see a new edition of the MUTCD?***



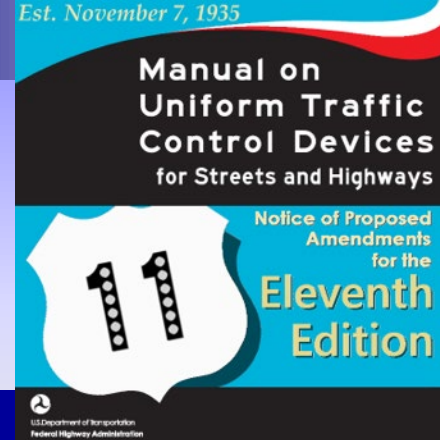


Submit Comments
www.regulations.gov
Docket ID No.: FHWA-2020-0001



Postal Mail or Hand Delivery are also acceptable.
See the Federal Register notice for additional details.





Webinar Recordings

March 18.....Introduction and Highlights

March 25.....Pedestrians, Bicycles, Transit

Available at the MUTCD Web site

Visit the MUTCD Web site for details
and recordings of this Webinar series

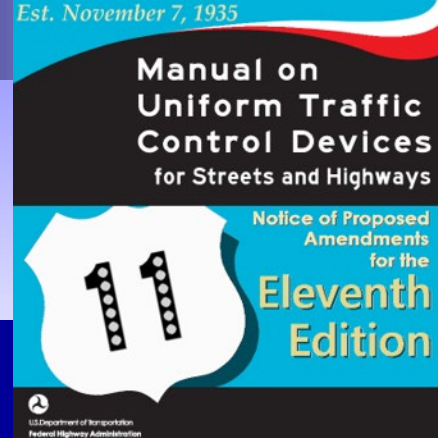


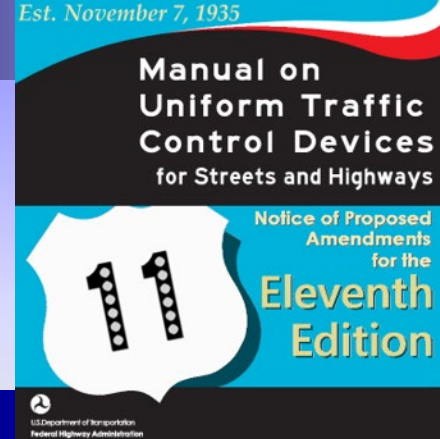
Thank you!!

How to reach us

<https://mutcd.fhwa.dot.gov>

- e-Subscribe Service
 - Official Rulings
 - *Standard Highway Signs*
 - FAQ
 - MUTCD News Feed





Webinar Recordings

March 18.....Introduction and Highlights

March 25.....Pedestrians, Bicycles, Transit

Available at the MUTCD Web site

for more information

<https://mutcd.fhwa.dot.gov>

