The MUTCD and Current Efforts to Update It

Presented to
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Background

- Gene Hawkins
  - Retired Texas A&M civil engr faculty
  - Retired TTI researcher (TCDs)
  - Chair, National Committee on Uniform Traffic Control Devices (NCUTCD)
  - Future: expert witness work with Kittelson LLC
  - TxDOT and consulting experience
  - Unofficial MUTCD historian

Overview

- MUTCD status
  - History and current version
  - Process for changing MUTCD
- NPA summary
  - Brief description of proposed changes
- NCUTCD & relation to MUTCD
  - Process for developing MUTCD recommendations

MUTCD

- Manual on Uniform Traffic Control Devices
  - National TCD standard on public & private roads
  - 3 levels mandate (shall, should, may)
  - Federal regulation (legal document)
  - Requires rulemaking to revise
- MUTCD application
  - TCD meaning, design, selection, installation, operation, maintenance, removal
- MUTCD ownership
  - Federal document
  - States adopt, some states have state MUTCD or a state supplement (Alabama)

Early Traffic Control

- Great variation in TCDs prior to 1st MUTCD
- Little to no consistency in appearance & meaning
- Police or auto club often did traffic signs

MUTCD Evolution

- MUTCD created to provide uniformity
- There have been 10 MUTCD editions
- More: search “Gene Hawkins MUTCD history”
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### MUTCD Website
- mutcd.fhwa.dot.gov (go to resource)
- Official MUTCD
- Official Rulings
- Interim Approvals
- Interpretations
- Other info

### Changing the MUTCD
- MUTCD is a federal regulation
  - Can change only through rulemaking
- Process for revising the MUTCD
  - Federal Register notice
  - Notice of Proposed Amendments (NPA)
  - Public Comment
  - Final Rule

### 2009 MUTCD Rulemaking
- 2008 NPA (published 1/2/08)
  - 513 important items
  - 6 mo docket comment period
  - 1,941 submissions posted to docket
  - Over 15K individual comments
- 2009 final rule (pub 12/16/09)
  - 2 Revisions (both 5/14/12)
    - #1: engineering judgment
    - #2: compliance dates

### 2020 NPA Details
- Federal Register notice (preamble): 12/14/20
  - 82 pages
  - Explains key changes
  - Basis for some changes
  - 90 day comment period
- Corrected: 12/17/20
  - Fixed language in Part 9
- Revised: 2/1/21
  - Comment period extended 60 days

### 11th Edition Schedule
- Rulemaking dates for 11th edition
  - Almost 12 years
  - May 2023: IIJA legislative deadline
- FHWA Webinars on NPA
  - Good source of additional information
    - MUTCD website: mutcd.fhwa.dot.gov
  - Under MUTCD News Feed
    - MUTCD supplemental materials are included with the Notice of Proposed Amendments (NPA) for the 11th edition of the MUTCD. The NPA contains detailed information on the new rules and how they differ from the current MUTCD. The MUTCD website, mutcd.fhwa.dot.gov, is a good source of additional information.
**NPA Overview**

- 647 important items in *Federal Register* notice
- 781 pg marked-up text (700 pg clean)
- 523 figures
  - 151 revised and 145 new (no markups)
- 68 tables
  - 26 revised and 11 new (no markups)
- Organization changes
  - Intro folded into Part 1
  - Part 5 now AV instead of low-volume roads
  - New chapters within most parts
  - Subchapters for some chapters

**Disclaimer**

- This is a brief overview of NPA
- Has highlights, does not cover all of the important proposed MUTCD changes
  - FHWA webinars have more detail
- My content and comments do not represent a position on changes
- FHWA is responsible for MUTCD content and revisions

**Part 1 Key Items**

- Includes Introduction, has 4 chapters
- MUTCD purpose: uniformity in meaning and appearance; consistency in use, installation, and operation
- Target road users: vehicle operators & pedestrians
- Use of MUTCD: decisions only by qualified individuals, defines engineer as professional engineer
- Compliance dates (only 3)
- Definitions: TCDs, numerous revisions, additions, deletions
- State content: state TCD policies, drawings, directives, specs are supplement to MUTCD
  - Requires substantial compliance

**Part 2A-2C Key Items**

- Subchapters for 2B and 2C
- Limits on: word signs, alt symbols, larger sizes
- Use of LEDs in signs (incl flash 50-60/min)
- Updates to min sign retroreflectivity*
- TC selection for unsignalized intersections*
- Speed limit: info on setting speed limits*
- Wrong way movement signing changes*
- Definition for # intersections (1 vs 2)*
- TCD treatments for horizontal alignment*
- Speed feedback signs*
- Roundabout signing*
  - *More info in presentation

**Min Sign Retro**

- Add values for blue and brown signs
- Remove management methods
  - Refers to external document

**Unsignalized Intersections**

- Addresses use of:
  - No control
  - Yield control
  - Minor road stop control
  - All way stop control
  - 5 different warrants
- Based on NCHRP study
### Speed Limits

- Reduces emphasis on 85th percentile
  - Still a factor in setting speed limit
  - Road context added as factor
- Freeways, expressways and rural highways: posted speed should be within 5 mph of 85th percentile
- References FHWA “Engineering Speed Limits” web page

### Wrong Way Signing

Based on NCHRP study

### Single or Two Intersections

Based on NCHRP study

### Horizontal Alignment TCDs

Table 2C-4a - Selection of Devices for Changes in Horizontal Alignment

### Speed Feedback Signs

Figure 2C-4. Vehicle Speed Feedback Signs

### Roundabout Signing

- Replaces black and white chevron sign with large arrow sign

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Part 2D-2N Key Items

- 11 chapters, includes subchapters
- Many new chapters
- Reorganized
- Arrow per Lane sign for conventional roads
  - Expanded use for freeways
- New information/service signs
- Expanded CMS chapter (2L)

Part 3 Key Items

- 10 chapters, divided to improve finding content
- Marking retroreflectivity not in NPA; separate rulemaking
- 6 inch line width required where speed limits > 40 mph
- 6 inch edge lines recommended on all 2-lane roadways
- Crosswalks required at non-intersection crossings
- More details on use of crosswalks plus new patterns
  - Curb ramp within extension of crosswalk
  - Aesthetic treatments for crosswalks (crosswalk art)
- Colored pavement: yellow, white, green, red, purple
- Requiring yield lines on all multi lane entry roundabouts
- TWLTL not extended to intersection

Crosswalks

Crosswalk Markings

- Basic
- Longitudinal Bar
- Perpendicular
- Double-Paired
- High Visibility

Aesthetic Treatments

Examples of:
- Yellow
- White
- Green
- Red
- Purple

Part 4 Key Items

- 21 chapters
- Ped signals rcmd with crosswalks
  - Updated ped detect guidelines
- Ped hybrid okay to install at intersection
- Yellow/red intervals reference ITE practice
- Expanded preemption treatment
- Add bicycle signals
- Add rectangular rapid flashing beacons

RRFB

Part 5 Key Items

- 3 chapters
- Automated vehicle (AV) content replaces low volume roads
- Mostly considerations for future
- Key content:
  - Provide wider lines
  - LED refresh rate
  - Remove ghost lines in TTC

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Part 6 Key Items

- 16 chapters, reorganized for flow
- Accessible ped accommodation during TTC
- Late merge TTC plan
- 8 new typical applications
  - Revisions to most of others

Late Merge

Part 7 Key Items

- 4 chapters, reorganized & consolidated
- Limited number of changes

Part 8 Key Changes

- 5 chapters, slightly reorganized
- Diagnostic Team process and actions defined for changes/upgrades to grade crossings
- Delineation to discourage turning onto tracks
- Guidance on elimination of TWLTLs over grade crossings
- Significant detail on traffic signal preemption including annual testing of preemption and preemption operation
- Guidance on pre-signals and queue-cutter signals at grade crossings
- ADA compliant sidewalk and pathway grade crossings

Part 9 Key Items

- 6 chapters, reorganized
- New bike signs
- New markings: buffered & separated bike lanes, counter-flow lanes, intersection bike boxes, two-stage bike turn boxes

Bike Markings
Public Input
- Docket closed to comments
- Comments viewable at www.regulations.gov
  - Docket FHWA-2020-0001
- Current step: wait for federal government to publish Final Rule

NPA Docket Comments
- Over 17,000 docket submissions
  - Many are essentially form letters promoted by a few organizations
- Over 100,000 total comments
- Over 35,000 unique comments
  - After combining duplicates

Final Rule Timing
- Date of Final Rule not yet announced
- Took almost 2 years from NPA to FR for 2009 MUTCD
  - 11th edition has many more docket comments to address
- Infrastructure bill included May 2023 deadline for MUTCD revisions
- My best guess: 2nd or 3rd quarter, 2023

MUTCD and NCUTCD
- MUTCD: owned by FHWA
  - FHWA is responsible for MUTCD content
- NCUTCD: National Committee on Uniform Traffic Control Devices
  - Private organization, develops MUTCD recommendations and submits to FHWA
  - 200+ submitted regarding 2009 MUTCD
- NCUTCD does not have authority for deciding MUTCD content

NCUTCD
- Private group with 21 sponsoring organizations
  - Represents broad cross-section of practitioners and stakeholders
  - Only group with sole focus on TCDs
- Activities:
  - Recommend MUTCD changes to FHWA
  - Comment on proposed MUTCD changes
- Strong consensus-building process

NCUTCD Process
- TC: Technical Committee
  - Idea for MUTCD change
  - TC Task Force
  - TF/TC Discussion
  - Proposed Language
  - TC Vote
- Sponsor & TC Activity
  - Sponsor Review & Comment
  - TC Reviews Comments
  - TC Reviews Proposal
  - TC Vote
- Council Activity
  - TC Presents to Council
  - Council Discussion
  - Council Vote
  - If 2/3 approve, send to FHWA
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**NCUTCD Structure**

- **Group I: Agencies (25)**
  - AASHTO, ITE, APWA, NICE, NACTO

- **Group II: National Organizations (9)**
  - APTA, AREMA, AAR, APBP, ASCE, IACP, IBTTA, IMSA, ITSA

- **Group III: Public (4)**
  - AAA, HFR, LAB, NSC

- **Group IV: Industry (3)**
  - AHUA, ARTBA, ATSSA

**Executive Secretary**

- **Joint Task Forces**
- **Technical Committees**
- **Administrative Committees**

**Technical Committees**

- Regulatory & Warning Signs
- Guide & Motorist Information Signs
- Signals
- Roadway & Traffic Control
- Bicycle

**NCUTCD Website**

- ncutcd.org
- Lots of useful info

**NCUTCD Docket Comments**

- Spring 2021 docket comment effort
- 200+ hr technical committee meetings
- 40+ hours Council sessions
- Dozens of votes by electronic ballot
- Over 10,000 person-hours effort

- 85 NCUTCD docket submissions
  - 1 for each chapter in NPA (950 sections)
  - Available on NCUTCD website

**Questions**