Plano
City of Excellence

MAJOR MUTCD CHANGES BETWEEN THE 10TH AND 11TH EDITIONS

Texas Chapter APWA North Central Branch Presentation

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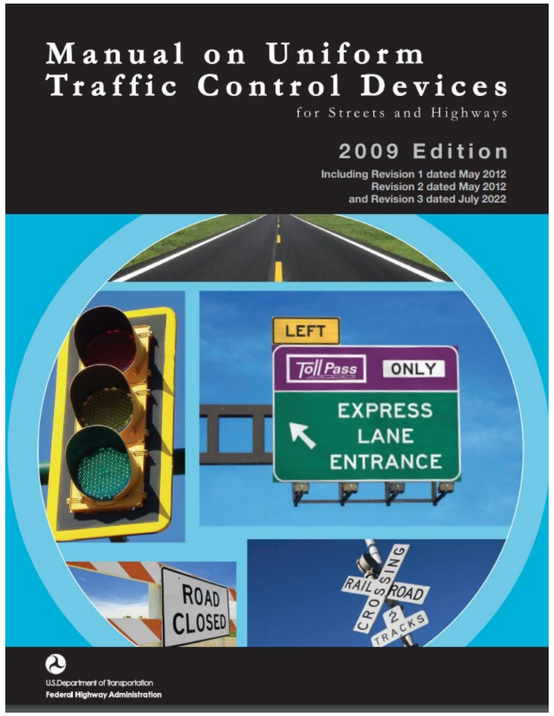
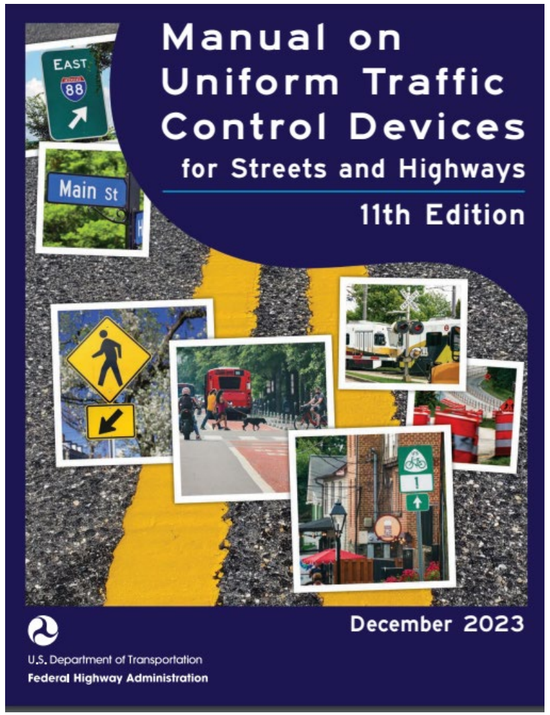
MUTCD HISTORY

- 11 editions since 1935
- This update increased number of pages from 864 to 1159 pages
  Largest number of comments ever received for a new edition
- Many new chapters and sections



2009



2023

PRESENTATION FOCUS

- Focuses on municipal subject areas and uses
- Focuses on new standards and/or significant changes between 10th and 11th Editions
- Avoids freeway and expressway subject areas
- Touches on a few good traffic control practices and a few personal opinions
- Highlights FHWA mandates

MUTCD OUTLINE

- Part 1. General
- Part 2. Signs
- Part 3. Markings
- Part 4. Highway Traffic Signals
- ~~Part 5. Low-Volume Roads (2009)~~
- Part 5. Automated Vehicles (2023)
- Part 6. Temporary Traffic Control
- Part 7. School Areas
- Part 8. RR and LRT Grade Crossings
- Part 9. Bicycle Facilities

→ **Chapter** → **Section**

SECTION SUBHEADING SIGNIFICANCES

- Standard – required, mandatory, prohibitive (SHALL)
- Guidance – recommended practice (SHOULD)
- Option – permissive practice or condition (MAY)
- Support – informational statement only

FHWA TARGET COMPLIANCE DATES

SECTION	SUBJECT AREA	SPECIFIC PROVISION	COMPLIANCE
2B.64	Weight Limit Signs	Advance warning signing	12/2028
2C.25	Low Clearance Signs (W12-2)	Advance warning signing	12/2028
2C.25	Low Clearance Signs (W12-2a, W12-2b)	Signing on variable height structures	12/2028
3A.05	Maintaining Minimum Retroreflectivity	Retroreflectivity standards and testing	9/6/2026
8B.16	High-Profile Grade Crossings	Warning/detour signing with known history	12/2028
8D.09 thru 8D.12	Traffic Signals at or Near Grade Crossings	New assessment process for traffic control	12/2033

MUTCD MISUNDERSTANDINGS

- 4 to 6 inch line widths
  - Good practice but only mandatory for edge lines
  - Manual already allows 4 to 6 inch installations
  - TxDOT Dallas District now installing 6 inch lane lines
- Minimum pavement marking retroreflectivity
  - Been around for a while, not new
  - Extended compliance date

LEGALEASE CHANGES*

- Sections 1B.01 and 1D.01 – all traffic control devices must comply with MUTCD standards
- Section 1B.05 – any non-compliant traffic control devices must be approved for experimentation first
- Section 1D.03 Engineering Study and Engineering Judgement
  - Standard: “This Manual describes the application of traffic control, but shall not be a legal requirement for their installation.”
  - Decision to implement a strictly rests with an engineering study or engineering judgement.

* Brian is not an attorney so review document yourself.

SECTIONS 2B.12 THRU 2B.17 WARRANTING ALL-WAY STOP CONTROL

- Warranting Guidance changed to Options so less restrictive
- Warrants reframed and expanded
  - Crash Experience
  - Sight Distance
  - Transitions to Yield Control or Circular Intersection
  - 8-Hour Volumes with Peds and Bikes
  - Other Factors (left-turns, peds, bikes

R1-1

SECTION 2B.21 SPEED LIMIT SIGN (R2-1) (page 1 of 2)

STANDARD:

- 10th Edition: Speed zones (other than statutory speed limits) shall only…. in accordance with traffic engineering practices. The engineering study shall include an analysis of the current speed distribution of free-flowing vehicles.
- 11th Edition: Speed zones (other than statutory speed limits) shall only…. in accordance with traffic engineering practices. The engineering study shall consider the roadway context.

SECTION 2B.21 SPEED LIMIT SIGN (R2-1) (page 2 of 2)

- 85TH-percentile speed no longer primary Guidance for setting speed limits
- Engineering study factors that should be considered include:
  - Roadway environment such as number of driveways/median openings, land use, transit, functional classification, and peds/bicycle facilities.
  - Roadway characteristics such as lane widths, grade, alignment, median type, and sight distance.
  - Geographic context such as urban/rural areas and multi-modal trip generation.
  - Reported crash experience for at least a 12-month period.
  - Vehicle speed distribution including pace, median, and 85th percentile speeds.
  - Review of past speed studies to identify crash trends at operating speeds.

SECTION 2C.06 DEVICE SELECTION FOR CHANGES IN HORIZONTAL ALIGNMENT

- New procedure
- Standard: The criteria shown…. in Chart B of Table 2C-4 shall be used to specify the type(s) of devices to be used in advance of, and/or along, a horizontal curve,….

B - Selection of Devices for Changes in Horizontal Alignment

Speed Differential[3]	Devices for Change in Horizontal Alignment[3]
5 mph	Pavement markings or advance horizontal alignment warning sign on paved roadways. Advance horizontal alignment warning sign on unpaved roadways.[4]
10 mph	Advance horizontal alignment warning sign
15 mph	Delineators[5] and advance horizontal alignment warning sign
20 mph or more	Chevrons[5] and advance horizontal alignment warning sign

SECTION 2C.13 VEHICLE SPEED FEEDBACK SIGN AND PLAQUE

- New signs (W13-20 and W13-20aP)
- Standard: When used to display the speed of an approaching vehicle in relation to the posted speed limit, the Vehicle Speed Feedback (W13-20aP) plaque shall be mounted below a Speed Limit (R2-1) sign.

Figure 2C-4. Vehicle Speed Feedback Sign and Plaque

W13-20 W13-20aP

SECTION 2H.09 PROJECT INFORMATION SIGN

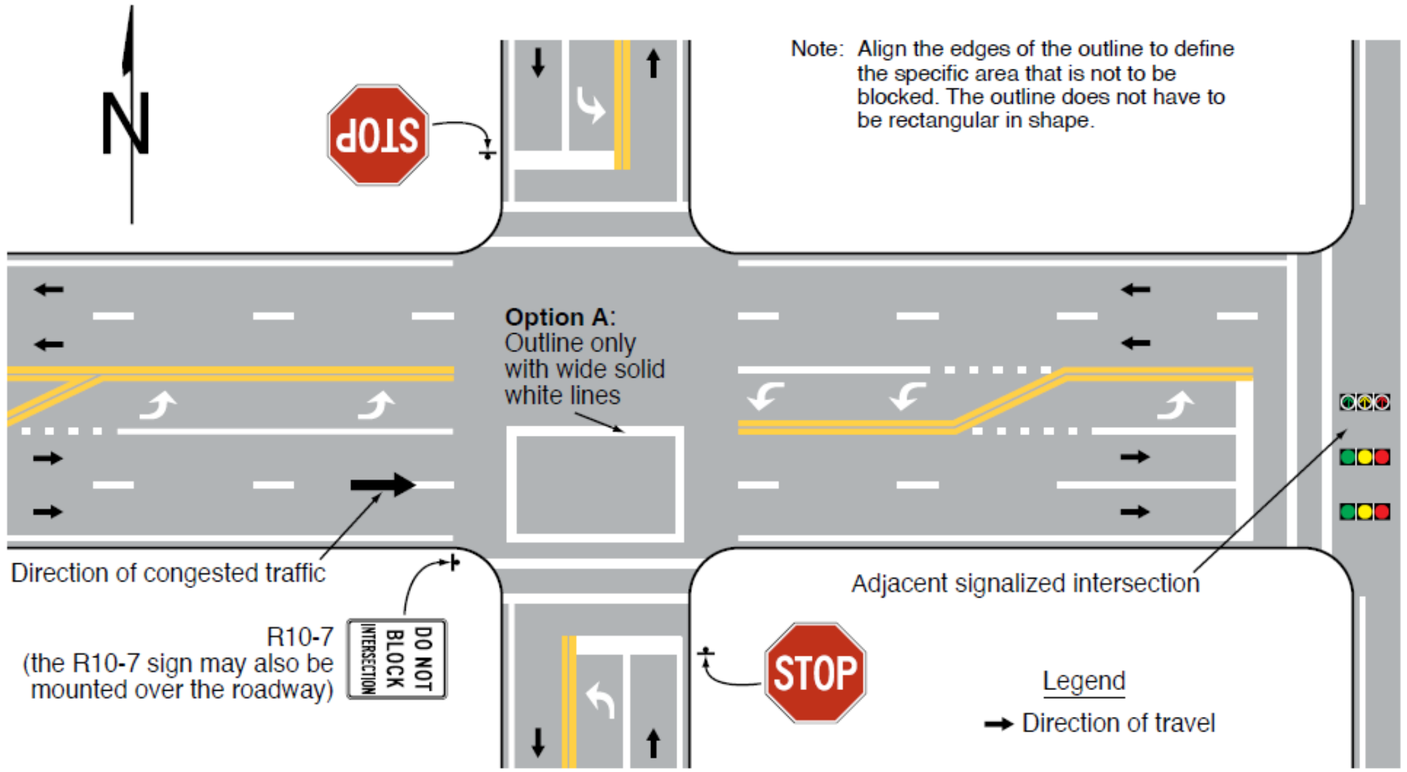
- New sign
- Standard: The Project Information sign legend shall be limited to the following project information:
  - A. The roadway name or route number,
  - B. A brief description or title of the project,
  - C. The completion date expressed in either a month or season (Spring, Summer, Fall, or Winter), and
  - D. The agency name.
- Standard: The Project Information sign shall have a white legend on a green background and shall not display Internet addresses, e-mail addresses, or telephone numbers.

CHANGEABLE MESSAGE SIGNS (CMS) SECTIONS 2L.02, 2L.06, and 2L.07

- **New Standard:** CMS shall display only traffic operational, regulatory, warning, and guidance information…. Advertising or other messages not related to traffic control shall not be displayed on CMS….
- “Click It or Ticket” most likely out

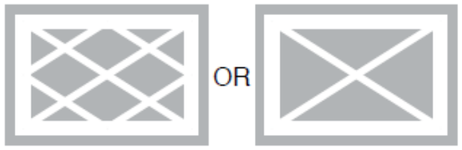
SECTION 3B.26 DO NOT BLOCK INTERSECTION MARKINGS

Figure 3B-24. Do Not Block Intersection Markings



Option B:
Outline with "DO NOT BLOCK," "KEEP CLEAR," or similar text only message

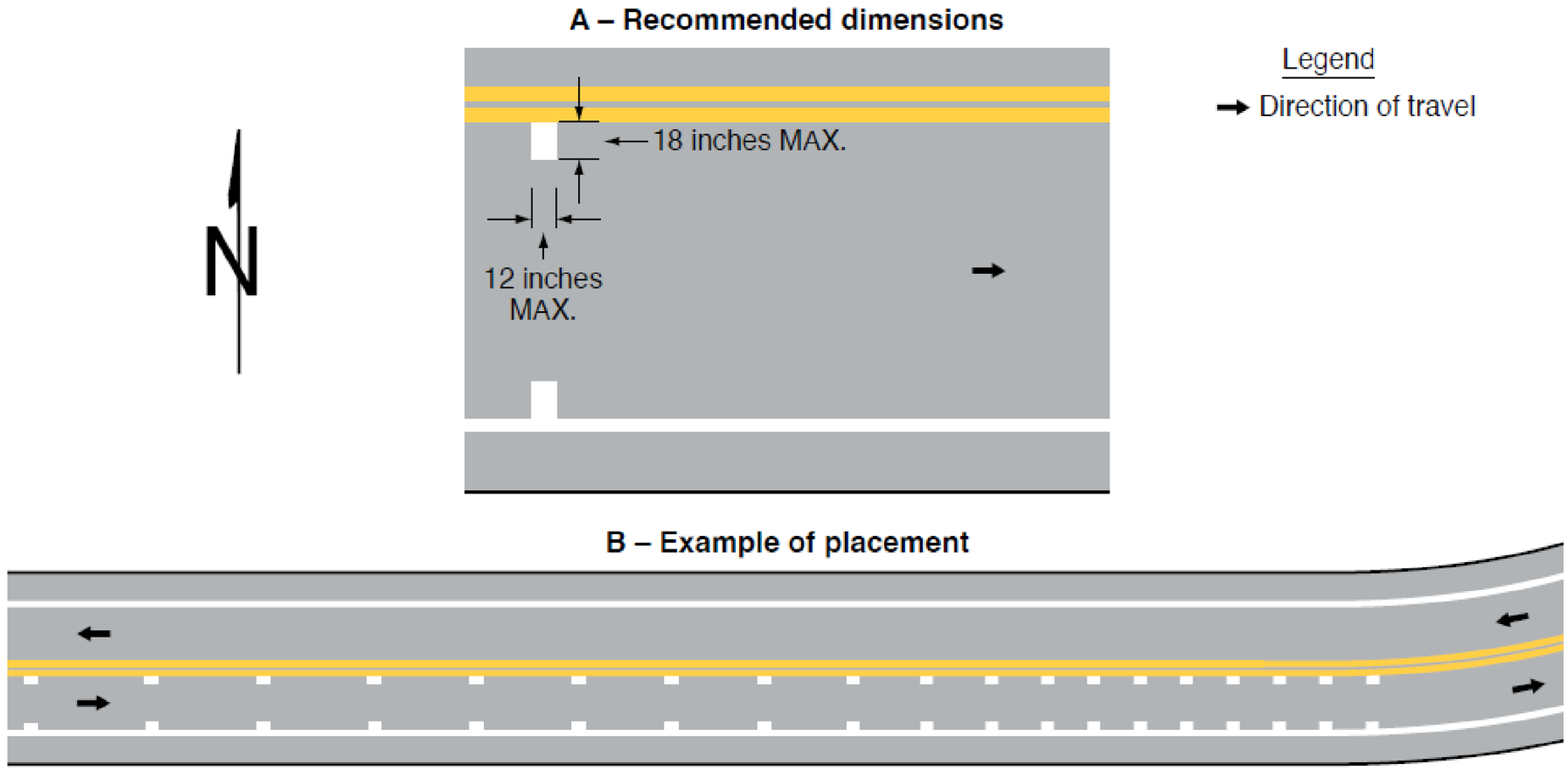
Option C:
Outline with 4- to 6-inch solid white crosshatch lines



Option D:
"DO NOT BLOCK," "KEEP CLEAR," or similar text only message (no outline)

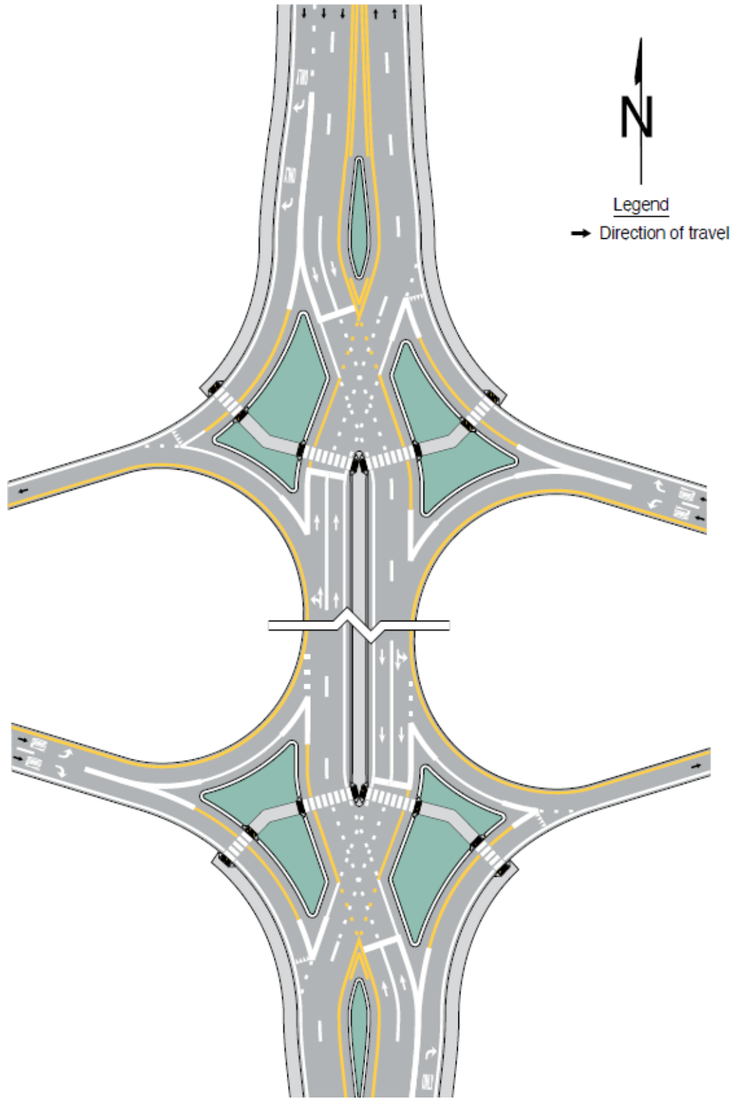
SECTION 3B.28 SPEED REDUCTION MARKINGS

Figure 3B-25. Example of the Application of Speed Reduction Markings



NEW INTERSECTION CONFIGURATIONS

- New Section 3B.31 Diamond Interchange with Transposed Alignment Crossroad
- Updates to Chapter 3C. Crosswalk Markings
- Updates to Chapter 3D. Circular Intersection Markings



CHAPTER 3C. CROSSWALK MARKINGS (page 1 of 2)

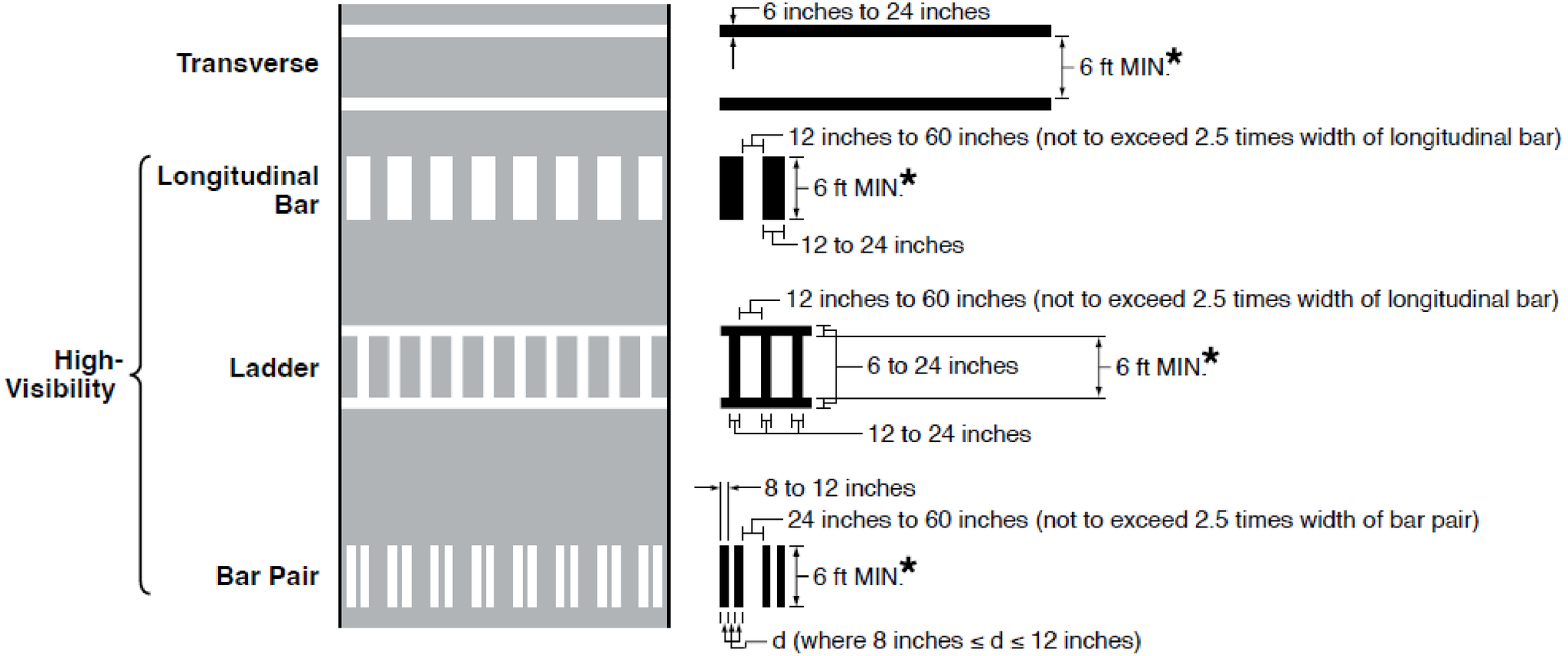
STANDARDS:

- Section 3C.02: Crosswalk markings shall be provided at legally established crosswalks at non-intersection locations.
- Section 3C.03: Where curb ramps are provided, crosswalk markings shall be located so that the curb ramps are within the extension of the crosswalk markings.

Any concerns??

CHAPTER 3C. CROSSWALK MARKINGS (page 2 of 2)

Figure 3C-1. Crosswalk Markings

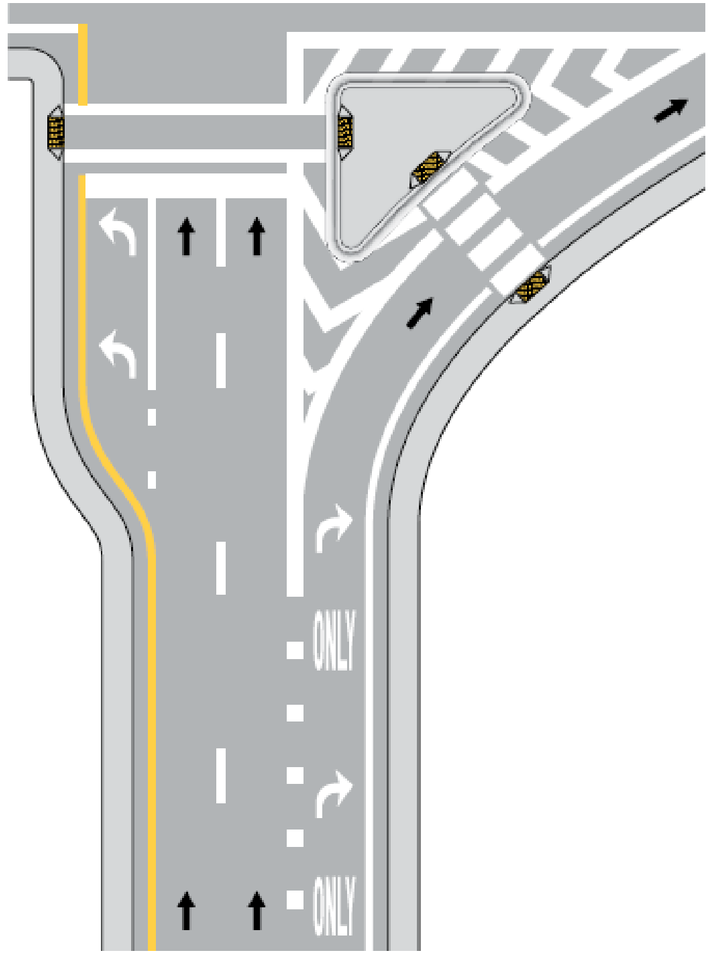


* Minimum crosswalk width shall be 8 feet where the posted speed limit is 40 mph or greater at a non-intersection crosswalk.

SECTION 3J.05 PAVEMENT MARKINGS FOR RAISED ISLANDS

- New section
- Standard: Except as…..raised islands separating traffic flows in the same general direction shall be outlined with white channelizing lines (see Drawing A in Figure 3J-4).

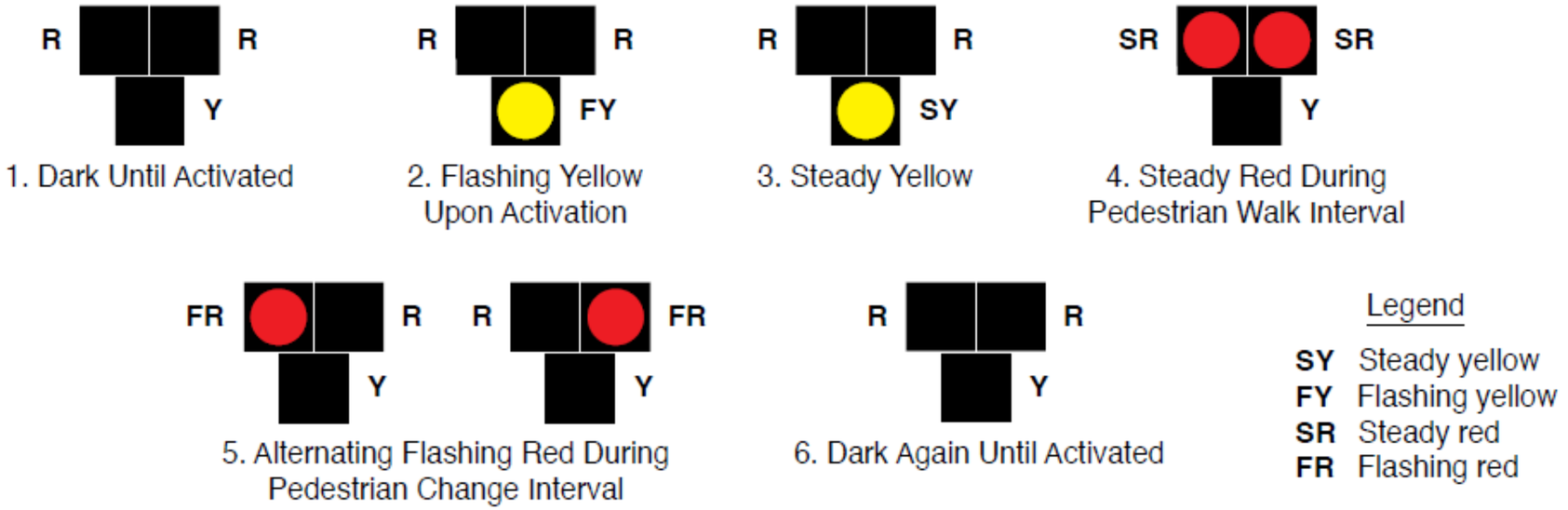
A – White channelizing lines applied to a raised island separating traffic flow in the same general direction



CHAPTER 4J. PEDESTRIAN HYBRID BEACON

- HAWK signals can now be located AT intersections.
- Removed 100’ intersection distance requirement.
- Side street shall be STOP sign controlled.

Figure 4J-3. Sequence for a Pedestrian Hybrid Beacon



CHAPTER 4L. RECTANGULAR RAPID FLASHING BEACONS (RRFB)

- New CHAPTER
- Standard: An RRFB shall only be used to supplement a post-mounted W11-2 (Pedestrian), S1-1 (School), or W11-15 (Trail) crossing warning sign….

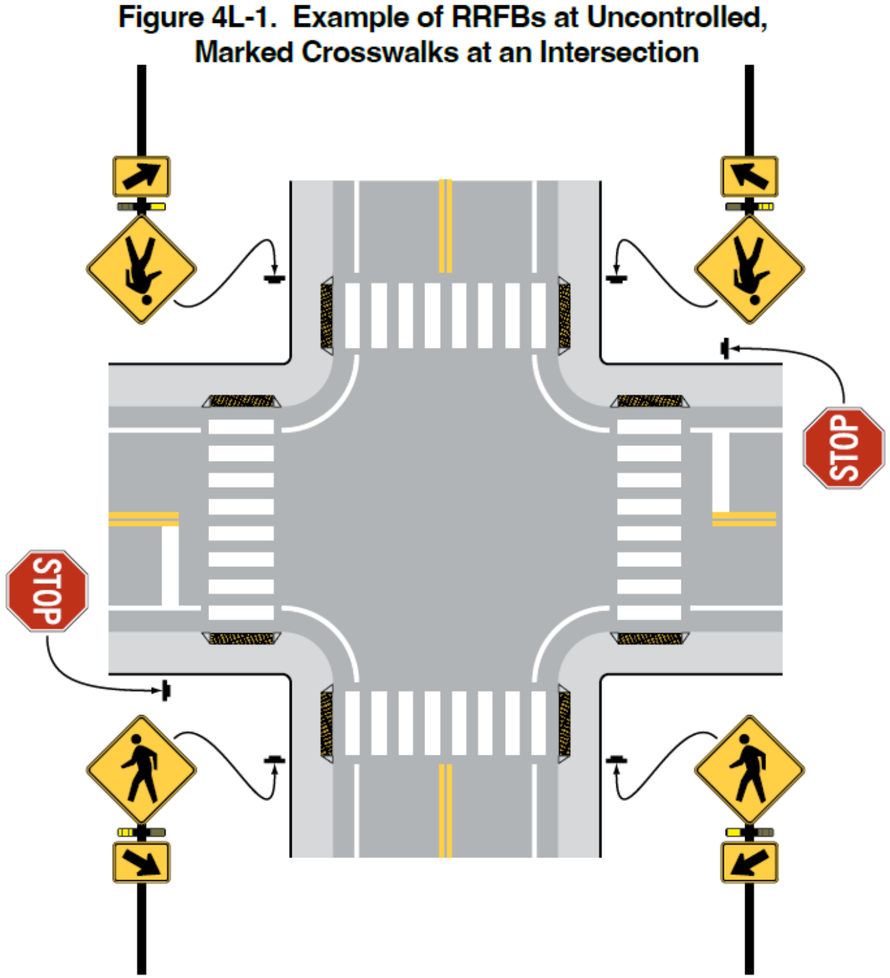


Figure 4L-1. Example of RRFBs at Uncontrolled, Marked Crosswalks at an Intersection

PART 5. TRAFFIC CONTROL DEVICES FOR LOW-VOLUME ROADS

- Low-Volume Road provisions moved and incorporated into all other Parts of the manual
  - Low-Volume Signs moved to Part 2
  - Low-Volume Marking moved to Part 3
  - Low-Volume Signalization moved to Part 4
  - Etc….

PART 5. TRAFFIC CONTROL DEVICE CONSIDERATIONS FOR AUTOMATED VEHICLES

- Replaced Part 4. Traffic Control Devices for Low-Volume Roads
- Mainly Support and Guidance with only one Standard
- Purpose of Part 5 is to provide agencies with general traffic control device considerations and guidance to help agencies be better informed on future infrastructure issues and needs as related to automated vehicles

SECTION 6C.02 PEDESTRIAN CONSIDERATIONS

- The following statement changed from Guidance (should) to a Standard (shall).

“If the TTC zone affects the movement of pedestrians, adequate pedestrian access and walkways shall be provided.”

- Manual provides a short-duration work option for the work to stop and allow pedestrians to move through the work zone.

PART 8. RAILROAD AND LRT GRADE CROSSING – MAJOR REWRITE

- Section 8A.03 Traffic Control Systems and Practices at Grade Crossings
- Section 8A.05 Engineering Studies at Grade Crossings
- Section 8A.07 Minimum Track Clearance Distance and Clear Storage Distance
- Section 8D.09 Preemption of Highway Traffic Signals at or Near Grade Crossings

PART 9. TRAFFIC CONTROL FOR BICYCLE FACILITIES (page 1 of 2)

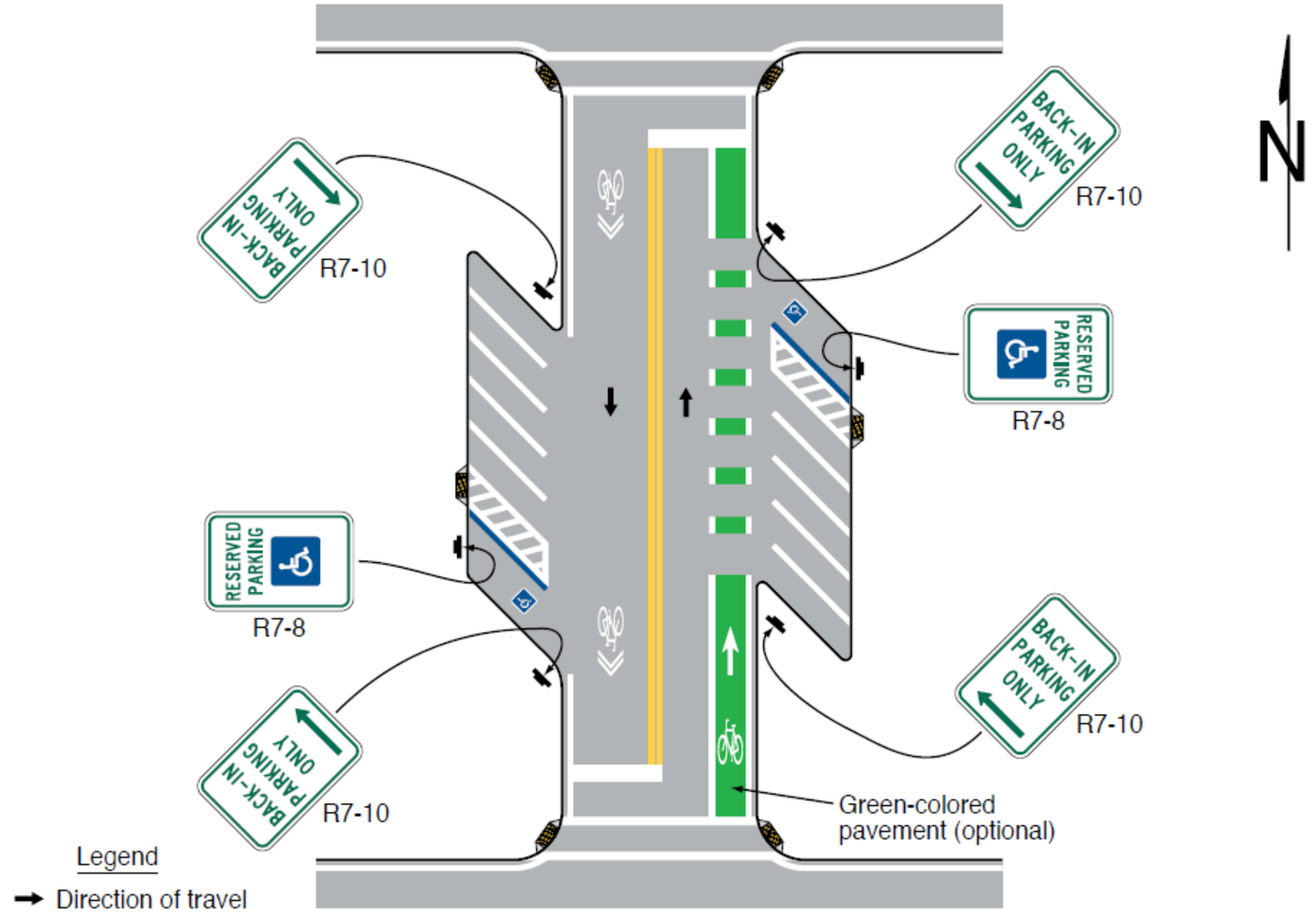
- Many new Chapters and Sections related to signing, markings, and signalization
- Figure 4H-1 (4H.06) shows 4-inch lenses which are now approved for bicycles (4E.02)
- Many changes/additions to Part 9. Bicycle Facilities

Figure 4H-1. Typical Arrangements of Bicycle Signal Faces

PART 9. TRAFFIC CONTROL FOR BICYCLE FACILITIES (page 1 of 2)

- Approximately 38 new Sections in Part 9
- Many new tables and figures
- Section 3H.06 provides for green color pavement

Figure 9B-3. Examples of Bicycle Facilities Adjacent to Back-In Parking



OTHER MUTCD CHANGES/ADDITIONS

- **Section 2A.12** LED's Used for Conspicuity Enhancement on Standard Signs (new)
  - New section detailing LED usage
- **Section 2B.06** Standard: YIELD and STOP signs shall not be used for speed control.

QUESTIONS?

Thank you!

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