



Manual on Uniform Traffic Control Devices for Streets and Highways

11th Edition

December 2023



U.S. Department of Transportation
Federal Highway Administration

The New MUTCD – What to know

Ransford S. McCourt, PE, PTOE
ITE Honorary Member

Hawaii ITE Section
February 28, 2024



HAWAII SECTION
INSTITUTE OF TRANSPORTATION ENGINEERS





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DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

23 CFR Parts 470, 635 and 655

[FHWA Docket No. FHWA–2020–0001]

RIN 2125–AF85

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

AGENCY: Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: The Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) (also referred to as “the Manual”) is incorporated by reference within our regulations, approved by FHWA, and recognized as the national standard for traffic control devices used on all public roads,

Agenda

- Federal Register Summary of Changes
- What groups have highlighted
- Randy’s Docket Comments
- NCUTCD Annual Meeting Highlights



FHWA Preamble Summary

Compliance Dates

- 9/26 Marking retroreflectivity
- 5 yr Low Clearance/Hi-profile
- 10 yr Signals near grade xing

Experimentation

Speed Limit Setting

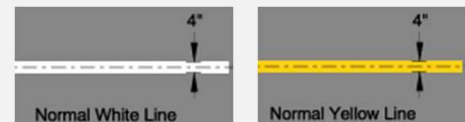


Electric Vehicles and Alternative Fuels

AMBER Alerts on CMS

Safety Messages on CMS

Normal Line Width 4"/6"



Retroreflective Pavement Markings

Final Rule
September 6, 2022

Crosswalk Markings

MUTCD 11th Edition

CHAPTER 3C. CROSSWALK MARKINGS

Page 589



Aesthetic Surface Treatments



Traffic Signal Accessibility

PROWAG
August 8, 2023

Signal Crash Warrant



Pedestrian Signals

2009 Engineering Judgement
→ 2023 **Should** ≠ Shall

Accessible Pedestrian Signals

Study → Lean into PROWAG

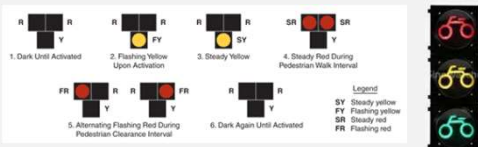
PHB Warrants

Options for lower walking speeds

Pedestrian Change Interval w/ Preemption

?? Standard to Option ??

Bicycle Signals at PHB



Automated Vehicles

Part 5

Diagnostic Team



Bicycles as Vehicles



Two-stage Bicycle Box



Bend out at Intersections

Counterflow Bicycle Lane

The **NO** moved from Standard to Guidance when next to a vehicle lane

Termination of Interim Approvals

SHALL – a statement of required, mandatory or specifically prohibited practice regarding traffic control devices

SHOULD – a recommended practice in typical situations, with deviations allowed if appropriate via engineering judgement/study

SHOULD v. SHALL

What does that mean?

Pedestrian Signals

2009 Engineering Judgement
→ 2023 **Should** ≠ Shall

Accessible Pedestrian Signals

Study → Lean into PROWAG

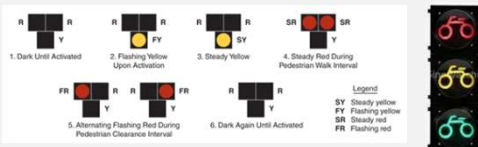
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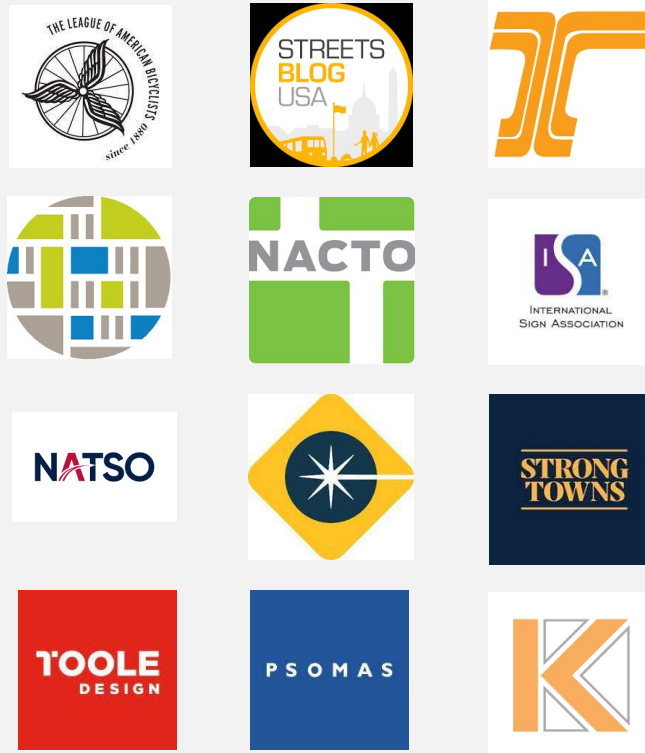
Termination of Interim Approvals

Most Common Highlights

What EVERYONE is Talking About:

- Speed Limit Setting Changes
- Rectangular Rapid Flash Beacons (no longer interim approval)
- Two-stage Bicycle Box
- Bicycle signs and markings
- Colored Pavement
- Pedestrian Heads (should)

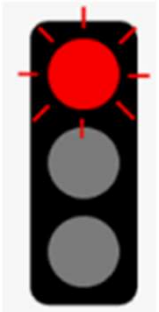
Summaries - Beyond the Press Release



What Some are Talking About:

- Pedestrian Crossing Enhancements
- Leading Pedestrian Intervals
- Accessible Pedestrian Signals
- Pedestrian Hybrid Beacon
- Safe Systems Approach
- Connected & Automated Vehicles
- EV & Alternative Fuels Symbols
- Lots of grade crossing changes

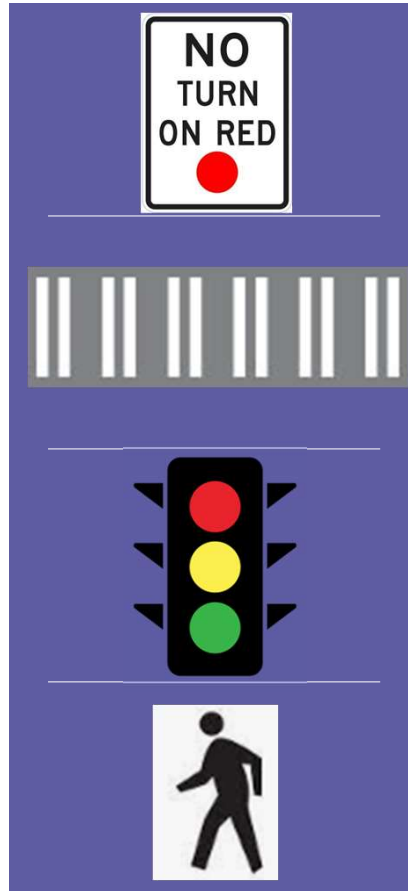
Possible Areas for Technical Corrections and Previously Approved Content



Accessible
pedestrian
signals with
flashing
operation



Flashing
yellow bicycle
signal
indications
SHALL NOT be
used
↓
Permitted



Vehicle Weight Limit Signs

No Turn on Red Sign

Neighborhood Traffic Circle

Bus Symbol

Clarifying when using 6" lines – wide can be 8"

Bar Pair Crosswalks

"Shall be permitted" language

Mid-Block Pedestrian Signals

Additional Signal Justification Language

Pedestrian Definition

Pedestrian Change Interval into Preemption

Randy's List of Examples new 2023 MUTCD Content

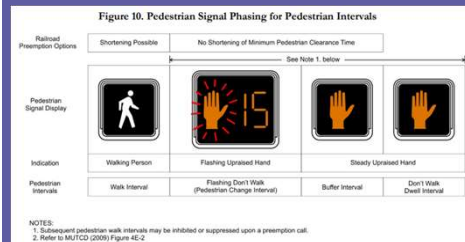
Vehicle Speed Feedback Signs



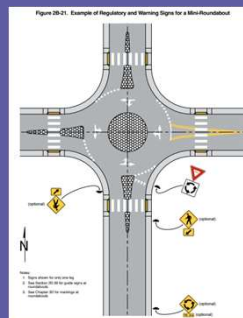
No more phone # or URLs



Pedestrian Clearance Intervals into Preemption



Traffic Calming Roundabout



Airports



Advance Placement of Warning Signs

	0 ³	0 ³
20 mph	100 ft ⁵	115 ft
25 mph	100 ft ⁵	155 ft
30 mph	100 ft ⁵	200 ft
35 mph	100 ft ⁵	250 ft
40 mph	125 ft	305 ft
45 mph	175 ft	360 ft
50 mph	250 ft	425 ft
55 mph	325 ft	495 ft
60 mph	400 ft	570 ft
65 mph	475 ft	645 ft
70 mph	550 ft	730 ft
75 mph	650 ft	820 ft

Table 2C-3



School R1-5 a & R1-5c



Arrows up

Randy's List of Examples new 2023 MUTCD Content

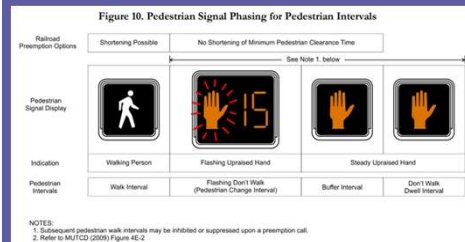
Vehicle Speed Feedback Signs



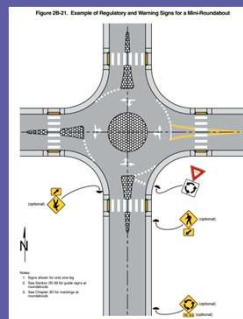
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Advance Placement of Warning Signs

Table 2C-3



School R1-5 a & R1-5c



Deeper Dive



Setting of Speed Limits



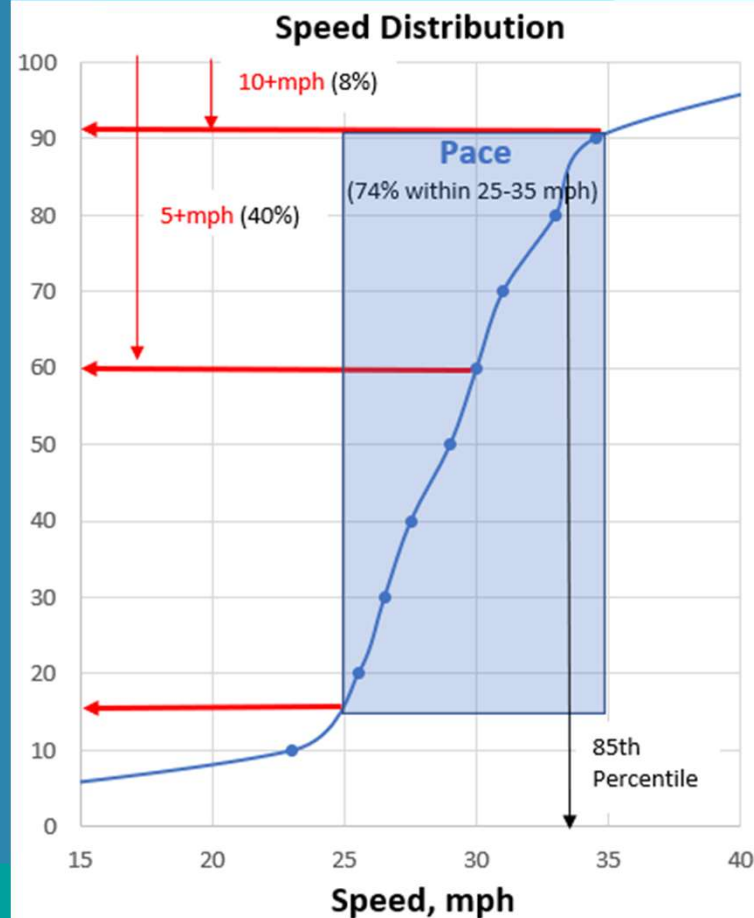
Speed zones (not statutory) shall be based on study

- Roadway Environment
- Roadway Characteristics
- Geographic Context
- Reported Crash Experience
- Speed Distribution
- Past Speed Studies



Among the factors, such as:

- Roadside development, driveways/access, functional class, transit volume/bus stops
- Lane widths, shoulder condition, grade, alignment, median type, sight distance
- Urban district, rural town center, non-urbanized rural, suburban, multimodal trip generation
- 12-months+
- Pace, median, 85th percentile (10+ mph above posted)
- Trends in operating speeds



85th Percentile

- Urban and suburban arterial & rural arterials that are main streets – 85th should **NOT** be used
- Freeways, expressways and rural highways outside urbanized locations – posted speed should be within 5 mph of 85th percentile, IF all factors have been considered and measures to address speed have been considered to the extent practicable
- When 85th percentile is appreciable greater than posted speed – seek measures to improve compliance with speed limit
- Studies should be undertaken when:
 - Roadways have undergone change
 - Programmed reviews



W13-20



W13-20aP

Vehicle Speed Feedback Signs

- When used to display speed of a vehicle in relation to posted speed limit, the plaque shall be mounted below a Speed Limit sign (R2-1)
- When used to supplement a horizontal alignment warning, shall be placed near point of curvature
- Shall not flash or strobe
- Shall not change color
- Shall not display legend when no vehicles are approaching

Colored Pavement



Aesthetic Surface Treatments (decorative)

- Within crosswalk, sidewalk extension, islands
- Not to confuse persons with vision disabilities
- Not to be mistaken as a traffic control device (colors outside the chromaticity boxes, not retroreflective)
- Not to encourage road users to remain in crosswalk (ie. social media/selfie behavior)

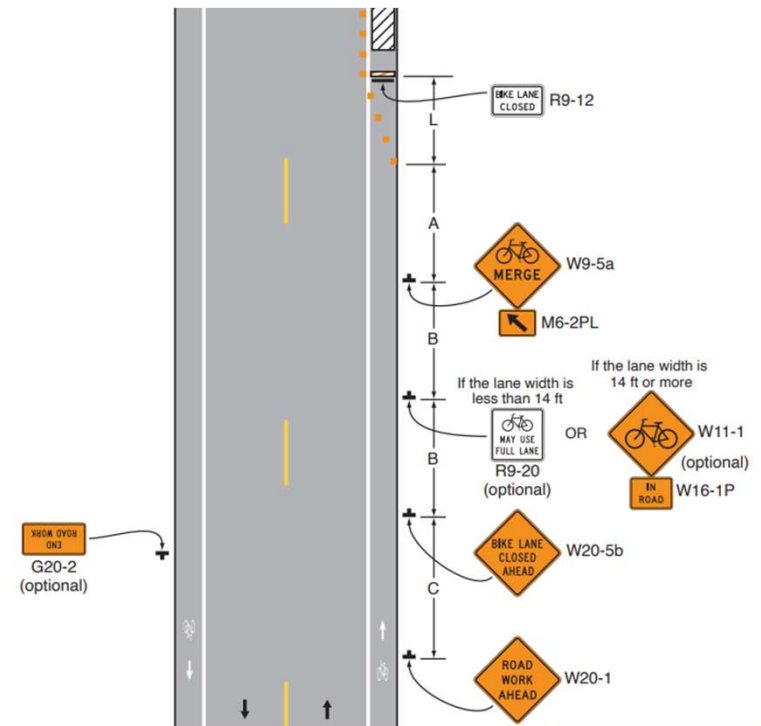
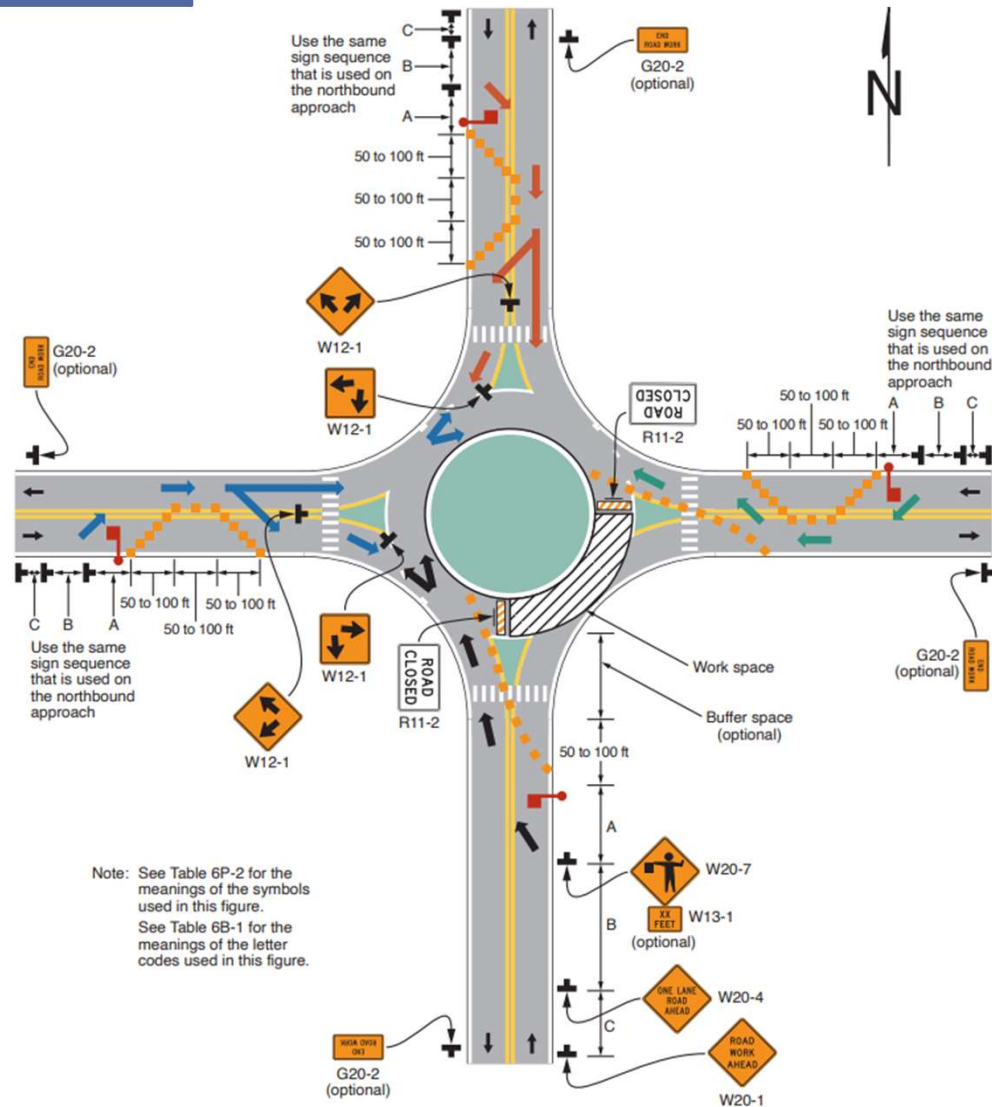


Colors for functions:

- White for channelizing islands, right-hand shoulders, gore areas
- Yellow for medians, left-hand shoulders
- Green for bicycle facilities
- Red for public transit systems
- Purple at toll-plazas for vehicles with registered ETC or open-road tolling bypasses using ETC

New TTC Applications

- ➔ Roundabouts
- ➔ Bike lane closure



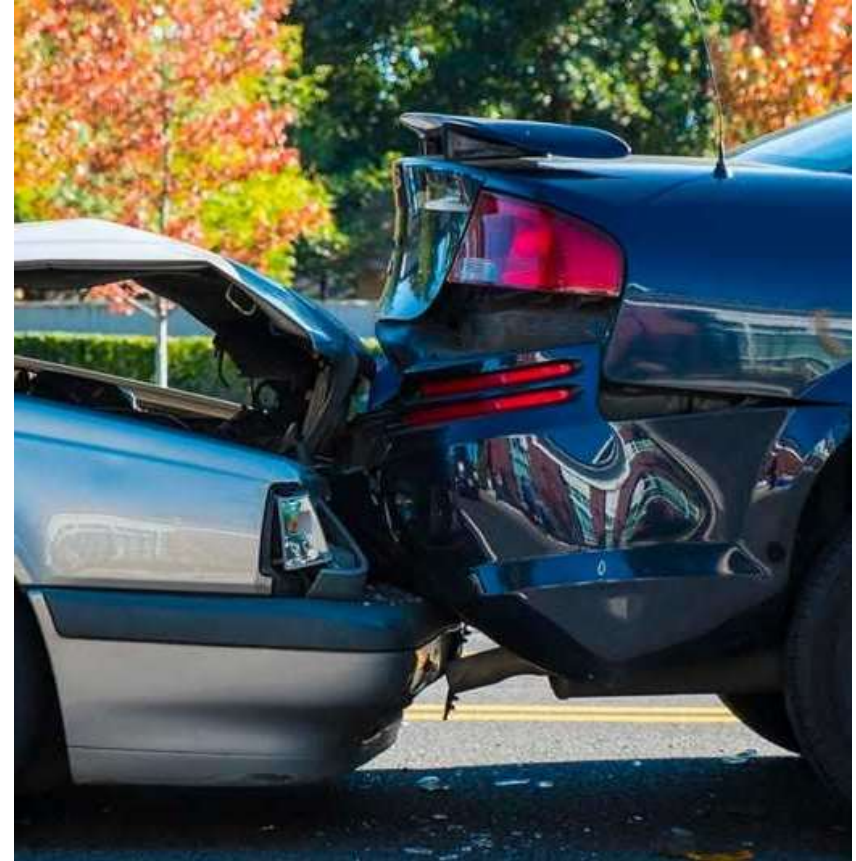
Traffic Control Signal Warrants

Shall to Should

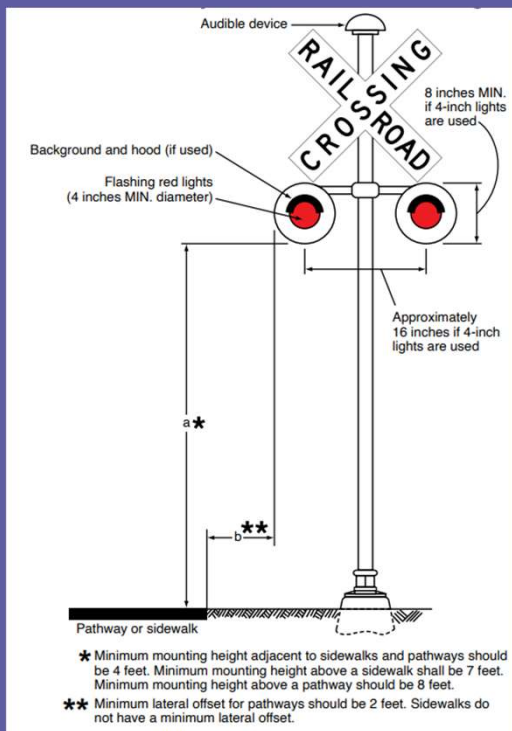
- Eight-hour volume
- Four-hour volume
- Peak hour
- Pedestrian volume
- School crossing
- Coordinated system
- Crash
- Roadway network
- Near a grade crossing

Crash Warrant

- Was 5 crash/year + 80% of volume warrant
- **NOW**
 - Calls out right angle and pedestrian crashes
 - Breaks out total crashes from fatal/serious injury
 - Table for crashes (3 to 5)
 - Adds 3-year criteria and table for crashes (5-6) and fatal/serious injury (4)
 - HSM safety performance functions - future



Pedestrians at Grade Crossings



At a pathway or sidewalk grade crossing where trains >80 mph = GATES

At pathway or sidewalk LRT crossings where LRT speed >40 mph = GATES

At pathway or sidewalk LRT Crossings where LRT speed >25 mph = ACTIVE

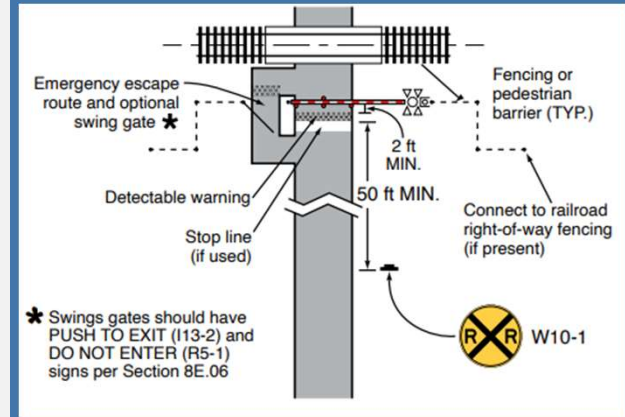
Swinging gates



Prohibition of Pedestrian signal use at a sidewalks or pathway grade crossing

Not storing pedestrians at multiple track grade crossings

Diagnostic Teams



What's next?

- States have two years to adopt (Hawaii October 1, 2024)
- PROWAG
- “Technical corrections”
- Revision 1
- Proceed with proposals for change
- 4-year Congressional update criteria
- 12th Edition visioning
 - Other countries
 - Application enhancement



Need for Channel 9



Consolidating all Wrong-Way TCD at divided highway



New application figures for Do Not Enter signs



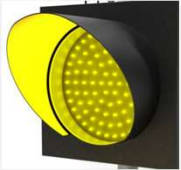
Future sign for bikes and trails



Future bus crossing sign & busway grade crossing section



Future LED flash rate increase



Guide sign mounting heights

CMS Library



SPUI guide sign application



Future sign for Shared Street



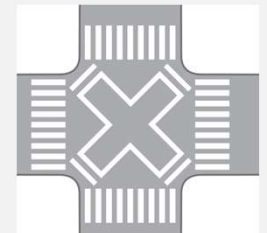
FHWA Dispositions

“considered in the future”

Revisiting Warrants (crash) & Yellow Change Intervals



Diagonal Crossing marking options



ITE NCUTCD Delegation

- Luana Broshears, ITE/Kathy Falk, Chair
- Meets twice a year (January & June) with the AASHTO Committee on Traffic Engineering
- ITE Delegation one of the largest
- Review proposals for change of MUTCD

Always welcoming interested individuals





Questions

Randy McCourt

503.randy.mccourt@gmail.com

