# National MUTCD & New York State Supplement: "An Overview and a Look to 2009"

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Cornell Local Roads Highway Superintendents Conference June 3, 2008

#### **MANUAL CHANGES**

#### 17 NYCRR Chapter V ("NYS MUTCD")

REGULATIONS

official

CODES RULES

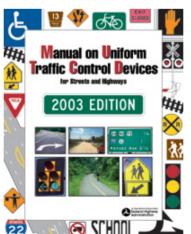
**Previous Guidance** 



#### **National MUTCD**

Guidance as of **September 13, 2007** 

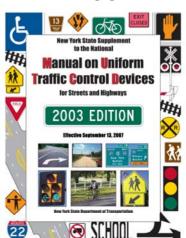






17 TRANSPORTATION (B)

**NYS Supplement** 



#### NATIONAL MUTCD & SUPPLEMENT CITATIONS

#### **Long Forms**

National Manual on Uniform Traffic Control Devices for Streets and Highways 2003 Edition

New York State Supplement to the National Manual on Uniform Traffic Control Devices for Streets and Highways – 2003 Edition

#### **Short Forms**

**National MUTCD** 

New York State Supplement or NYS Supplement

#### FINDING NATIONAL MUTCD & SUPPLEMENT

#### **ONLINE**

National MUTCD - <a href="http://mutcd.fhwa.dot.gov/">http://mutcd.fhwa.dot.gov/</a>

**NYS Supplement -**

https://www.nysdot.gov/portal/page/portal/divisions/operating/oom/transport ation-systems/traffic-operations-section/mutcd

#### **HARD COPY**

National MUTCD - Purchase from ATSSA, ITE, or AASHTO

NYS Supplement – Purchase from West Group (1-800-344-5008 or <a href="http://west.thomson.com/">http://west.thomson.com/</a> - refer to document as "Transportation Title 17B")

## Web Site Improvements

 Gradually updating the MUTCD web page to offer not only the latest version of the NMUTCD and the State Supplement, but to also provide useful tools

https://www.nysdot.gov/portal/page/portal/index

## Current Snapshot of the MUTCD Web Page

The following documents are available for downloading:

- National MUTCD (2003 Edition)
- MUTCD Presentation (posted 2/8/08)

#### New York State Supplement

- New York State Supplement including Revision #1 Full Version (posted 4/4/08)
- New York State Supplement including Revision #1 Parts 1 10 (posted 4/4/08)
- New York State Supplement including Revision #1 Appendices 1 & 2 (posted 4/4)

#### New York State Supplement (Previous Editions)

New York State Supplement - Original Version

#### New York State Supplement (Revisions)

- New York State Supplement Revision #1
- List of Changes in Regulation

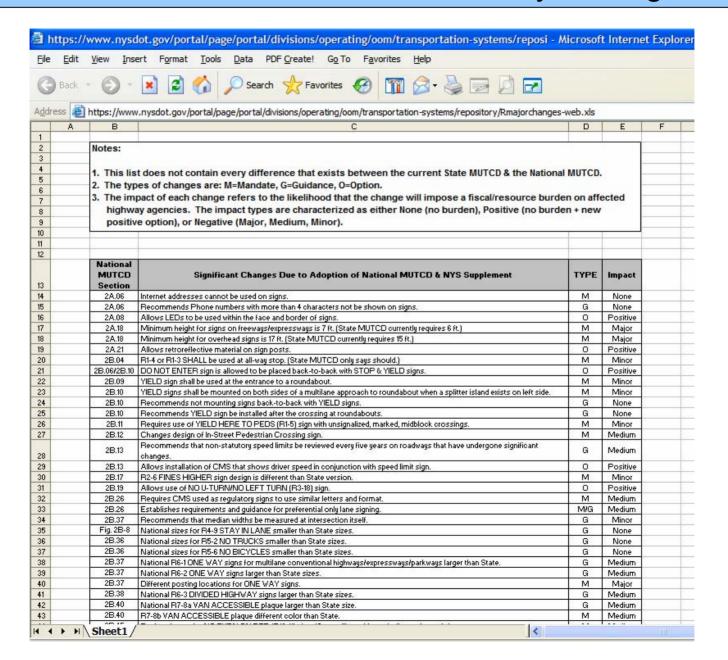
#### **Helpful Tools**

- List of Significant Changes Due to Adoption of National MUTCD + Supplement
- Sign Designation Conversion Tables
- New York State Traffic Control Statutory Mandates
- New York State Statutes Relating to Traffic Control
- Frequently Asked Questions





#### **NYSDOT MUTCD WEBSITE** – *List of Major Changes*



#### NYSDOT MUTCD WEBSITE – Sign Designation Conversion Tables

2	NYS - Sign Code	NAT - Sign Code	Sign Name	MUTCD/Supplement Section	
	RI-1	RH RH	STOP	2B.04	
	R1-2	Bi-2	YIELD	2B.08	-
	R1-3	B14	ALL WAY	2B.04	
	R2-1	B24	SPEED LIMIT	2B.04 2B.13	-
	R2-2	NYR2-2	STATE SPEED	2B.13	-
	R2-3	NYR2-3		2B.13	
_	PAPECE III		AREA SPEED	480000	
	R2-4	NYR2-4	CITY SPEED	28.13	-
	R2-5	NYR2-5	VILLAGE SPEED	2B.13	-
	R2-6	NYR2-6	TOWNSPEED	2B.13	
	R2-7	NYR2-7	SCHOOL SPEED LIMIT XX WHEN FLASHING	7B.11	
3	R2-8	NYR2-8	OCHOOL OF ELD CHAIN AN WHENT EACH INTO	7B.11	
	R2-9	R2-4	MIN SPEED LIMIT	2B.16	
	R2-10	W3-5	SPEED ZONE AHEAD	2C.30	
	R2-11	NYR2-11	END SPEED ZONE	2B.101	
•	R2-12	W3-5	REDUCED SPEED AHEAD	2C.30	
3	R3-1	F3-2		2B.19	
1	R3-2	R3-1	TURN PROHIBITION	2B.19	
0	R3-3	R3-4	TOT HAT THOU HEITHOU	2B.19	
1	R3-4	R3-3		2B.19	
2	R3-7	P110-11	NO TURN ON RED	2B.45	
3	R3-10	Ri6-1L	ONE WAY (L)	2B.37	
4	R3-11	R6-1R	ONE WAY(R)	2B.37	
5	R3-12	Fi6-2L	ONE VAY (L)	2B.37	
6	R3-13	R6-2R	ONE VAY(R)	2B.37	
7	R3-14	NYR3-14	ALL TRAFFIC	2B.102	
3	R3-15	R5-1	DO NOT ENTER	2B.34	
9	R3-16	RI5-1a	VRONG VAY	2B.35	
0	R3-17	R6-3	DIVIDED HIGHWAY CROSSING	2B,38	
	R3-18	PI6-3a		2B.38	
2	R3-19	NYR3-19	LEFT TURN ONLY	2B.102	
3	R3-20	NYR3-20	RIGHT TURN ONLY	2B.102	
4	R3-21	NYR3-21	U-TURN ONLY	2B.21	
5	R3-22	F3-5L	MANDATORY MOVEMENT LANE CONTROL	2B.21	
6	R3-23	R3-5a		2B.21	
7	R3-24	R3-5R	RIGHT TURN ONLY	2B.21	
8	R3-25	Pi3-6L	OPTIONAL MOVEMENT LANE CONTROL	2B.22	
9	R3-26	F3-6FI		2B.22	
0	R3-27	NYR3-27	LEFT/RIGHT	2B.22	
1	R3-28	NYR3-28	LEFT/RIGHT STRAIGHT	2B.22	
2	R3-31	R3-7L	LEFT LANE MUST TURN LEFT	2B.21	
3	R3-32	R3-7R	RIGHT LANE MUST TURN RIGHT  de / Supplement Signs / Disallowed No	2B.21	

#### NYSDOT MUTCD WEBSITE – Sign Designation Conversion Tables

	Disallowed Natio	nal MUTCI	D Signs				
D5-1	REST AREA 1 MILE	R7-5	ONE HOUR PARKING				
D5-1a	REST AREA 2 MILES	R7-6	NO PARKING LOADING ZONE				
D5-1b	REST AREA NEXT RIGHT	B7-7	NO PARKING BUS STOP				
D5-2	REST AREA EXIT ARROW	B7-107	NO PARKING BUS STOP				
D5-2a	REST AREA EXIT ARROW	R7-107a	NO PARKING BUS STOP				
D5-2b	REST AREA Gore Arrow	R7-201	TOW AWAY ZONE text version				
D5-3	PARKING AREA1MILE	R7-203	EMERGENCY SNOV ROUTE				
D5-3c	PARKING AREA Advance	R8-1	NO PARKING ON PAVEMENT				
D5-4	PARKING AREA EXIT ARROV	R8-2	NO PARKING EXCEPT SHOULDER				
D5-5	ROADSIDE TABLE ARROV (text)	R8-3	NO PARKING	Signs	Given Lor	ger Compliance Times for Re	moval
D5-5a	ROADSIDE TABLE ARROV	R8-3c	ON PAVEMENT	State	National	Sign Description	Date
D5-5b	ROADSIDE PARK ARROV	R8-3d	ON BRIDGE	R3-7	R10-11a	NO TURN ON RED text version	09/13/1
D5-5c	PICNIC AREA ARROV	R8-6	NO STOPPING EXCEPT SHOULDER	R4-5	R4-7a	KEEP RIGHT text version	09/13/1
D5-5d	ROADSIDE PARK Advance	R9-3	NO PED CROSSING text version	P3-8	R7-201	TOW AWAY ZONE text version	09/13/1
D5-5e	ROADSIDE TABLE Advance	R9-4	NO HITCHHIKING text version	W2-15	W3-1a	STOP AHEAD text version	09/13/1
D5-6	NEXT REST AREA XX MILES	R10-2	CROSS ON PED SIGNAL text	W2-16	W3-2a	YIELD AHEAD text version	09/13/1
D6-1	SCENIC AREA ARROV	R10-6a	STOP HERE ON RED curved arrow				
D6-2	SCENIC OVERLOOK 2 MILES	R10-7	DO NOT BLOCK INTERSECTION				
D6-3	SCENIC AREA ARROV	R10-11a	NO TURN ON RED text version				
D9-4	Litter Container	R10-11b	NO TURN ON RED different shape				
D9-13a	HOSPITAL plaque	R10-17a	RIGHT ON RED ARROW AFTER STOP				
D9-13b	AMBULANCE STATION plaque	R10-20a	Days/Times plague				
D9-13c	EMERGENCY MEDICAL CARE plaque	RM-230	24-Hour pharmacy symbol				
D9-14	POLICE panel	S4-1	Times plaque				
D9-18a	General Service Sign text version	S <b>4</b> -2	WHEN CHILDREN ARE PRESENT				
D9-18e	Advance General Service text version	S4-4	WHEN FLASHING				
D9-20	24-Hour pharmacy symbol	S4-5a	SCHOOL ZONE AHEAD text version				
D9-20a	24-HOUR Panel	S4-6	Days plaque				
D12-3	CB Monitoring	S5-1	School speed limit				
E1-3	Exit number plaque	W3-1a	STOP AHEAD text version				
E1-5	Exit number plaque	W3-2a	YIELD AHEAD text version				
E1-5a	Exit number plaque	W3-3a	SIGNAL AHEAD text version				
E5-2	Exit number plaque	W3-5a	Speed Reduction text version				
I-2	STATELINE	W6-1a	DIVIDED HIGHWAY text version				
R1-3	4-WAY plaque	W6-1b	DIVIDED ROAD text version				
R1-5a	YIELD HERE TO PED text version	W6-2a	DIVIDED HIGHWAY ENDS text version				
R1-6a	STOP FOR PED in-roadway	W6-2b	DIVIDED ROAD ENDS text version				
R2-2	Truck speed limit	W7-1a	HILL text version				
R2-3	Night speed limit	W7-1b	HILL with grade incorporated				
R4-7a	KEEP RIGHT text version	W8-6	TRUCK CROSSING text version				
R4-7b	KEEP RIGHT text with angle arrow	W9-2	LANE ENDS MERGE text version				
R5-2a	NO TRUCKS text version	W12-2p	Low clearance				

## Target Compliance Dates

- Controversial Issue: not enough resources nor time to do the job right
- Federal target dates are mandates that can not be ignored
- Working with FHWA to seek an alternative solution using the new retroreflectivity standards as the basis for sign upgrade
- New retro-reflectivity standards

#### **WARNING SIGNS - Location**

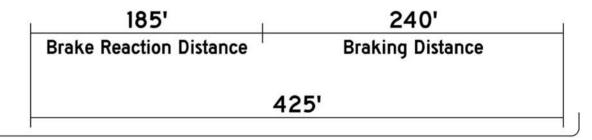
The distances in Table NY2C-4 assume that drivers do not begin to react to a warning sign until they actually reach the sign.

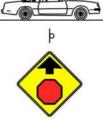
#### **Advantages:**

Uniformity of placement among similar signs.

Greater safety margin. (Any sign legibility in advance is extra distance to react.)

Easier for designers and field personnel to decide where to put signs.







#### WARNING SIGNS – Determining Advisory Speeds

#### **State MUTCD**

Use a ball bank reading of 10 degrees.

#### **National MUTCD**

Use the 85<sup>th</sup>-percentile speed, a ball bank indicator reading of 16 degrees, or the speed determined by an engineering study.

#### **Proposed NYS Supplement Revision #1**

Use AASHTO's *A Policy on Geometric Design of Streets and Highways*, 2004, with side friction factors from Supplement, or use ball bank readings from Supplement.

SPEED (mph)	SIDE FRICTION FACTOR (degrees)
≤ 24	0.24
25 - 34	0.21
35 - 49	0.18
≥ 50	0.15

SPEED (mph)	BALL BANK READING (degrees)
≤ 24	16
25 - 34	14
35 - 49	12
≥ 50	10

#### GUIDE SIGNS – Street Name Signs

#### **State MUTCD**

Guidance to use 6"-D letters for conventional highways.

Guidance to use 4"-D letters for two-lane conventional highways with low approach speeds or where larger signs cannot fit.

No guidance provided on larger sizes for multilane conventional highways.

#### **National MUTCD**

On conventional highways, the lettering on ground-mounted Street Name signs should be at least 6".

On conventional highways with speed limits of 25 mph or less, 4" letters may be used.

On multilane streets with speed limits greater than 40 mph, the lettering on ground-mounted Street Name signs should be at least 8".

#### **Proposed NYS Supplement Revision #1**

4" letters may be used on local roads with speed limits of 30 mph or less.

#### **CHANGES – NOW & THE FUTURE**

Revision # 1 to the NYS Supplement officially adopted on March 19, 2008.

Revision No. 2 to the 2003 National MUTCD adopted in December 2007. This revision included new retroreflectivity requirements.

MAJOR proposed changes to the National MUTCD released in January 2008. Comments will be accepted until July 31, 2008 (might be extended). Official adoption of changes expected in 2009 or 2010.

Change to National MUTCD will require MAJOR revisions to the NYS Supplement. Revision #2 to the NYS Supplement will coincide with adoption of revised National MUTCD (2009/2010).

### **2009 NMUTCD**

- > FHWA issued a NPA on January 2, 2008:
  - \* Contains 513 proposed areas of change to the NMUTCD
  - \* Public comment period ends July 31st
  - \* NYSDOT currently preparing a "response to the docket"
  - \* FHWA has provided a webinar re: the proposed changes

MUTCD application on private property that is "open to public travel"





# Size of sign lettering should be based on 1 inch of letter height per 30 feet of legibility

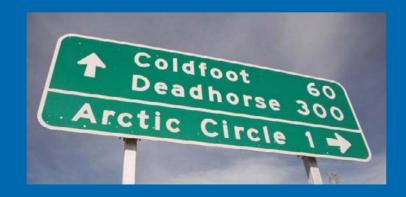
> Based on 20/40 vision

Currently 1 inch per 40 feet



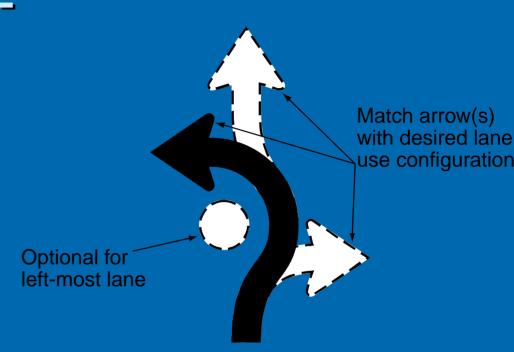


## Option to use all uppercase letters for place names and street names is being deleted





New optional fishhook arrows for use on lane-use control signs at roundabouts







Use of 2-WAY, 3-WAY, and 4-WAY plaques is being deleted

ALL-WAY plaque remains as a "shall" if all approaches have STOP sign

## Variant of "Yield Here to Pedestrians" signs for State laws requiring full stop





### In-street pedestrian crossing signs:

> Conditions and criteria for use

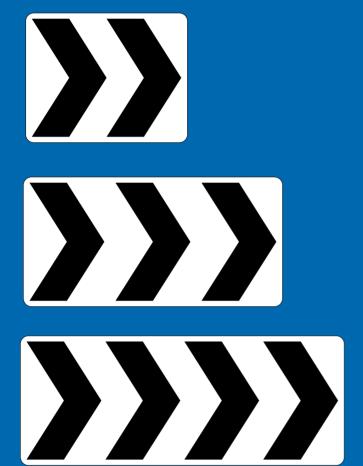
Placement locations

Background may be fluorescent yellow or fluorescent yellowgreen





Supports for in-street pedestrian crossing signs must be designed to bend over and bounce back when struck



Roundabout Directional
Arrow signs
(on central island)

# New regulatory signs for use at roundabouts



Roundabout Circulation sign (with YIELD sign at mini-roundabouts)

# New symbolic design for Do Not Pass sign



DO NOT PASS COMMERCIAL VEHICLES EXCLUDED

NO COMMERCIAL VEHICLES

NO
PEDESTRIANS
BICYCLES
MOTOR-DRIVEN
CYCLES

PEDLSTRIANS
PICYCLES
MOTOR-DRIVIN
CYCLES
PROHIBITED

"Excluded" and "prohibited" changed to "NO"

Symbol is being added to pedestrian pushbutton signs







# New special purpose pedestrian pushbutton signs



FOR MORE
CROSSING
TIME
HOLD BUTTON
DOWN FOR
2 SECONDS



Required for use with pedestrian hybrid signals

LEFT TURN
YIELD ON
FLASHING
RED ARROW
AFTER STOP

For optional use with new flashing red arrow signal faces

New optional sign to remind RTOR drivers to yield to u-turners

RIGHT TURN
ON RED
MUST
YIELD TO
U-TURN



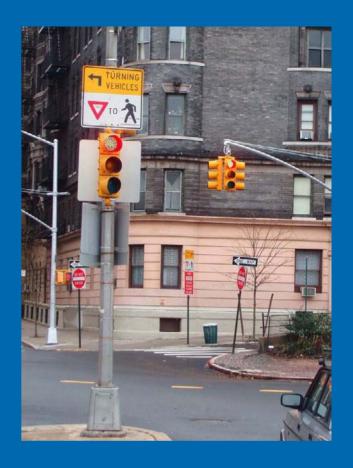
NO TURN
ON RED
EXCEPT
FROM
RIGHT LANE

For approaches with more than one right-turn lane









# New symbolic design for the R10-15 sign

### Fluorescent Yellow-Green color

Recommended for pedestrian, bike, and playground signs







Required for school signs



# New sign and plaque for combined pedestrian/bicycle crossing





Plaque for new regulatory sign or advance warning sign of new regulation

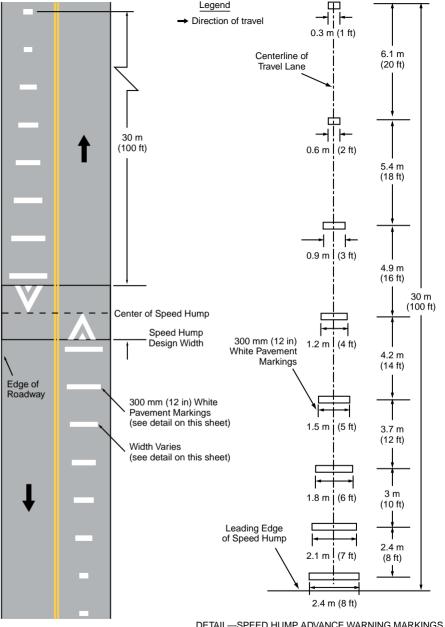


Single yellow centerline marking on 2-way road specifically prohibited





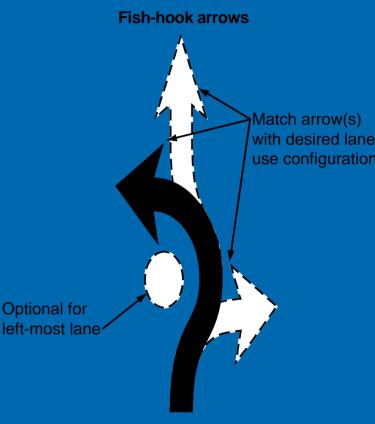
If speed hump markings are used, they shall be those shown in the MUTCD



DETAIL—SPEED HUMP ADVANCE WARNING MARKINGS

# Optional fish-hook lane-use arrows for approaches to roundabouts





### Colored pavements



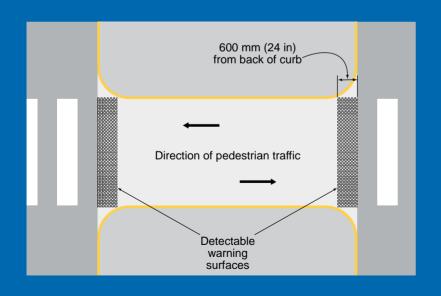
Retroreflective or intended to communicate a regulatory, warning, or guidance message = TCD, must comply with color code & other provisions for markings

Non-retroreflective, for aesthetics only, not to communicate a message = not a TCD



#### Pedestrian islands and medians

Detectable warning surfaces to mark the boundary between pedestrian and vehicular areas (ADAAG)





#### U-turn arrow indications





## Use of No Pedestrian Crossing signs at signalized locations





Recommended where it is necessary or desirable to prohibit a pedestrian movement that is not physically prevented by other means

### Specific prohibitions of:

- > Flashing green
- > Vehicular countdown displays
- Other similar "pre-yellow" signal displays
- Strobes or other flashing displays within or adjacent to red signal indications

## Revised legal meaning of flashing upraised hand

- Legal right to cross entire divided highway without stopping at the median if the signal is timed to provide sufficient time for pedestrians to cross the entire highway
- If signal timing provides only enough time for pedestrians to cross to the median, medianmounted signs, ped signals, and pushbuttons (if actuated) are required.

# New meaning of flashing upraised hand when pedestrian countdown signals are present



Ped may enter the intersection on the flashing upraised hand when a countdown pedestrian signal indication is present if they are able to travel to the far side of the traveled way by the time conflicting traffic receives a green signal

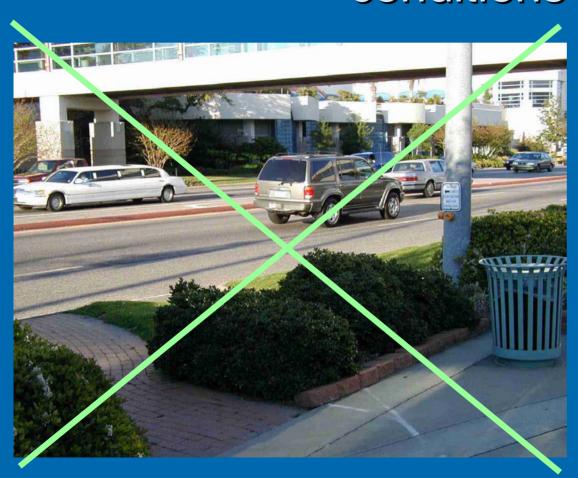
Countdown displays required for all new pedestrian signals

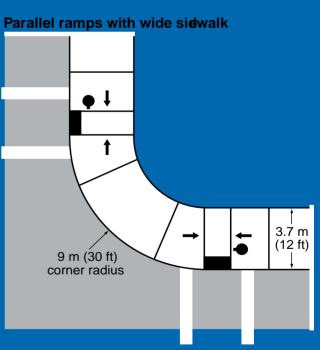


Positioning of pedestrian pushbuttons and legends on pushbutton signs shall clearly indicate which crosswalk signal is activated by which pushbutton.



## New figures for locations of pedestrian pushbuttons for a variety of conditions





### Slower walking speed for calculating pedestrian clearance time

4.0 feet per second Ped. Clearance Time based on 3.5 feet per second

Sum of Walk time + Ped. Clearance Time based on 3.0 feet per second

## Accessible Pedestrian Signals (APS) – revised provisions



Design features, extended button presses, audible beaconing, special requirements if 2 buttons must be located on 1 pole.



### New pedestrian hybrid signal



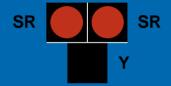
1. Dark Until Activated



2. Flashing Yellow Upon Activation



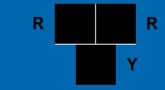
3. Steady Yellow



4. Steady Red During Pedestrian Walk Interval



5. Alternating Flashing Red During Pedestrian Clearance Interval



6. Dark Again Until Activated

#### Legend

SY Steady yellow

FY Flashing yellow SR Steady red

FR Flashing red

### In-roadway lights





New sign required if lights are actuated by push buttons

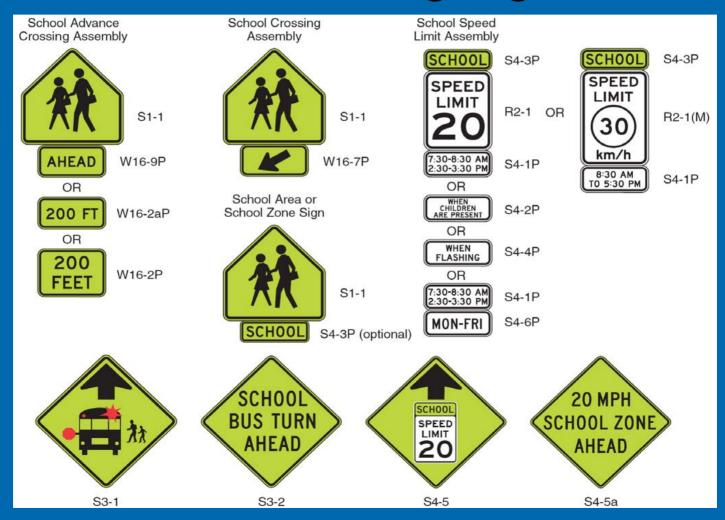
# Neighborhood residential streets cannot be classified as low-volume roads for which Part 5 would apply



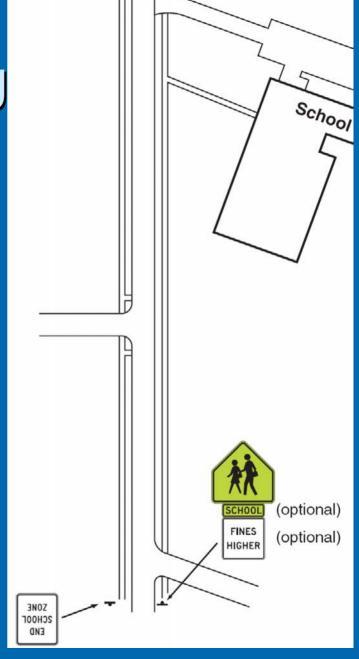


Part 5 applies outside built-up areas of cities, towns, communities

## FYG color required for all school warning signs



## New figure illustrating School sign with Fines Higher plaque



## Warning of school zone less than 125 feet away on cross street





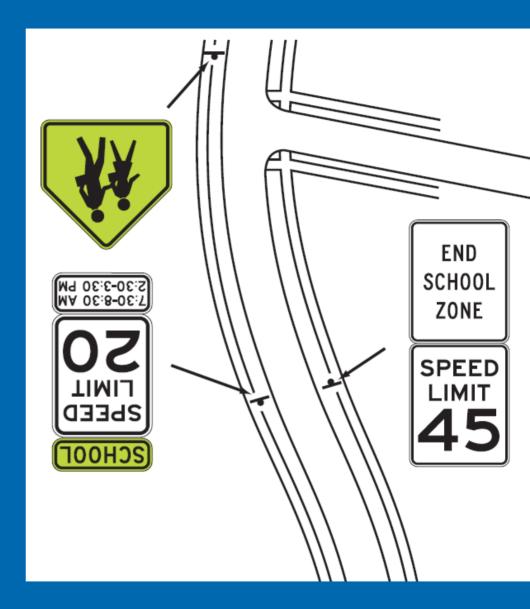


Schoolchildren symbol may be used on in-street signs at school crossings

## New symbol sign to replace the word message S3-1 sign



The end of a school speed zone shall be marked with an END SCHOOL **ZONE** sign



# Operating procedures for adult school crossing guards changed from recommendations to requirements

- > Shall not direct traffic in law enforcement sense
- Shall pick opportune times to create a gap in traffic flow
- Shall stand in roadway
- > Shall use a STOP paddle

### Two new bicycle pushbutton signs that include a bicycle symbol





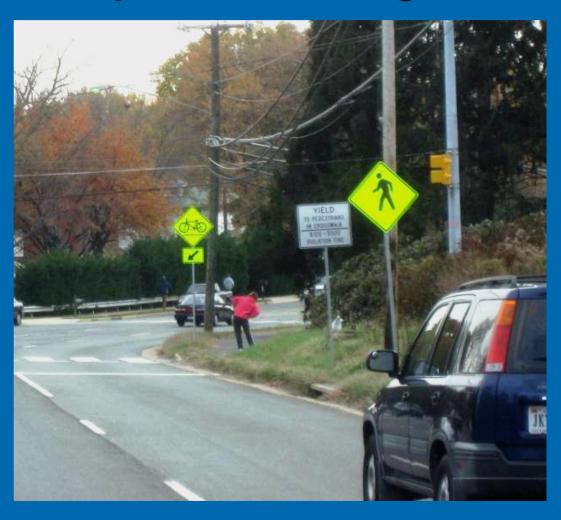
### Revised legend of W5-4a sign





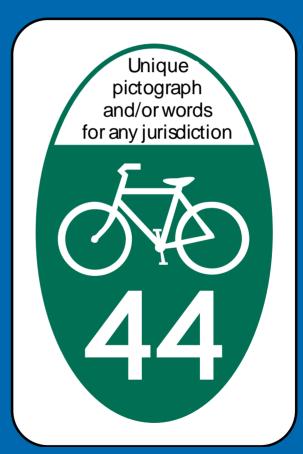
## New sign and plaque for combined pedestrian/bicycle crossing





## New Bike Route sign that provides a place for a pictograph





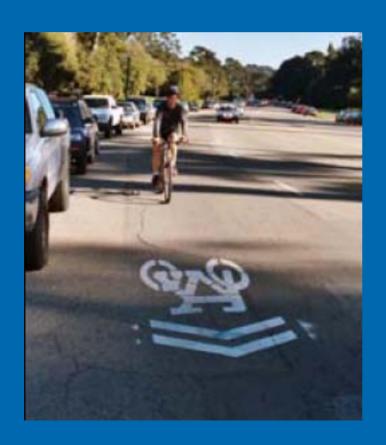
## New selective exclusion signs for modes other than bikes and pedestrians





R9-14

## New shared lane pavement marking symbol





#### Questions??

David Woodin, PE, PTOE

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