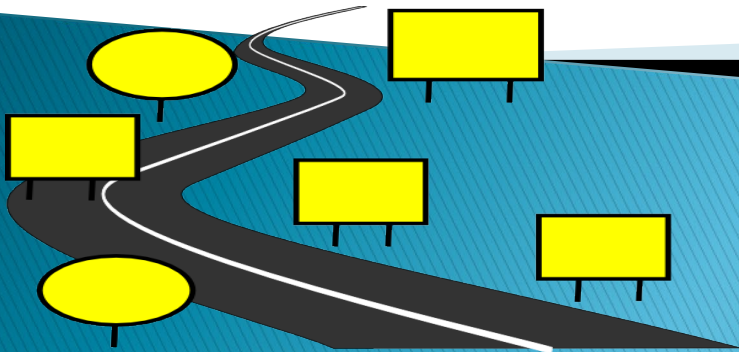




Advice on Your Advisories – Signing Roads the MUTCD Way

Steven C. Strength, PE, PTOE

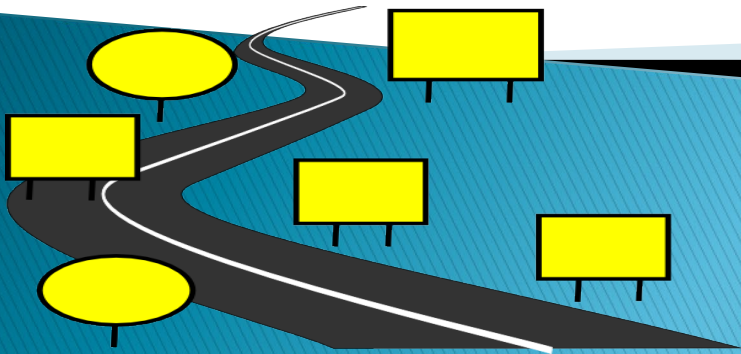


LPESA Spring Conference
April 24, 2019



BASED ON: Roads Scholar Course #9

The Road to Better Signing





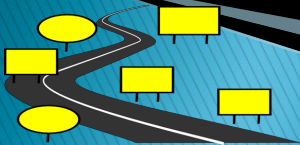
But is it a fortune ? »»





Quit eating cookies and
GET A JOB!

Or just more ADVICE? »»



Manual on Uniform Traffic Control Devices

- ▶ Federal policy
- ▶ All states must adopt
- ▶ Set minimums for traffic control devices:
 - Signs
 - Pavement markings
 - Signals, etc.





Functions of Signs

- ▶ The functions of signs are to provide:
 - _____,
 - _____, and
 - _____ information for road users.
- ▶ Words, symbols, and arrows are used to convey the messages.





Functions of Signs

- ▶ The functions of signs are to provide:
 - regulation,
 - warning, and
 - guidance information for road users.
- ▶ Words, symbols, and arrows are used to convey the messages.





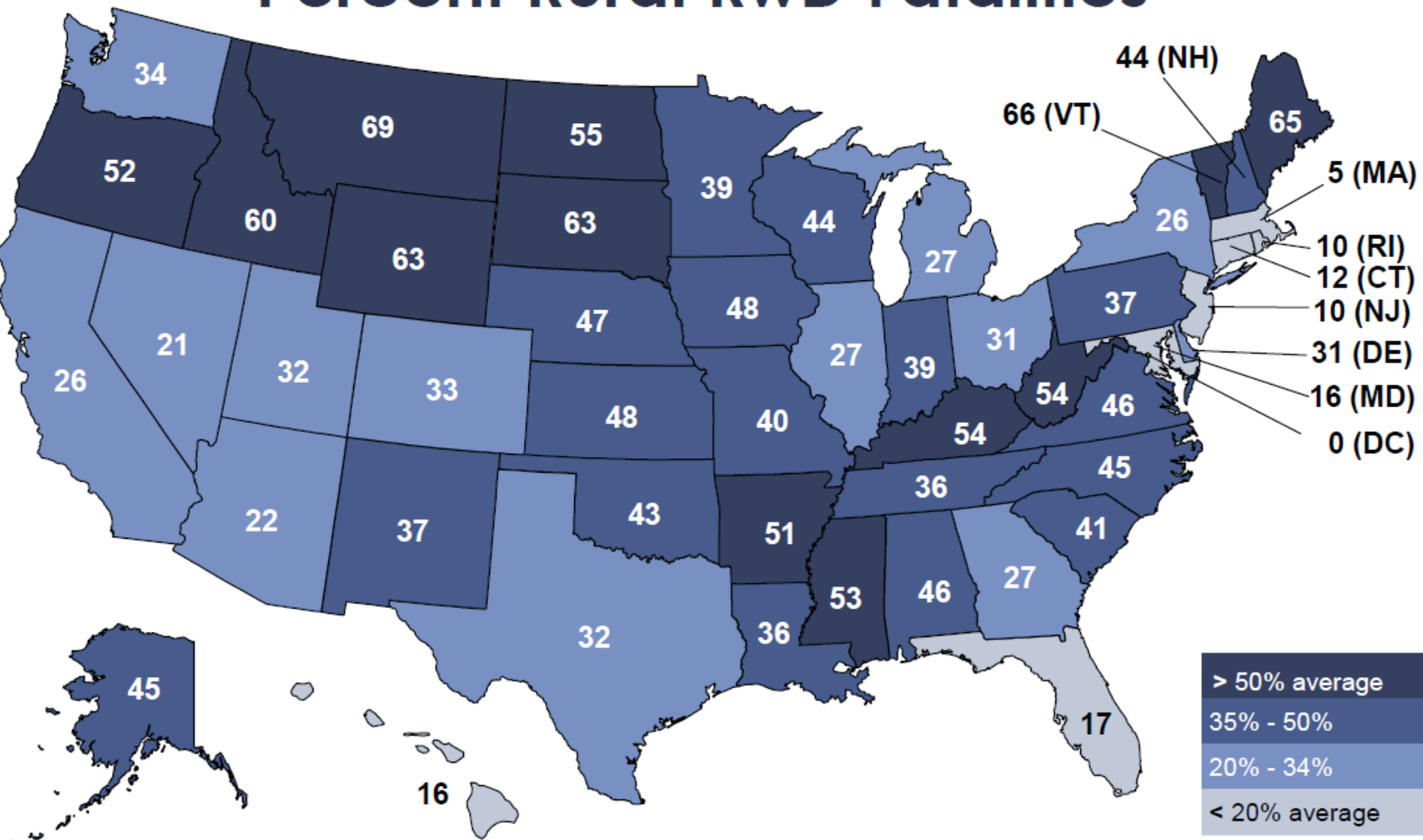
Problem – A National Issue

- ▶ One third of all traffic fatalities nationally are related to Rural Roadway Departure
- ▶ Major risk factors include curves, high speeds, impact with trees and fixed objects, rollovers, and head-on crashes
- ▶ Louisiana is FHWA focus state* for departures

*Greater problem compared to other states



Percent Rural Rwd Fatalities



Contributing Factor

Roadway Departure

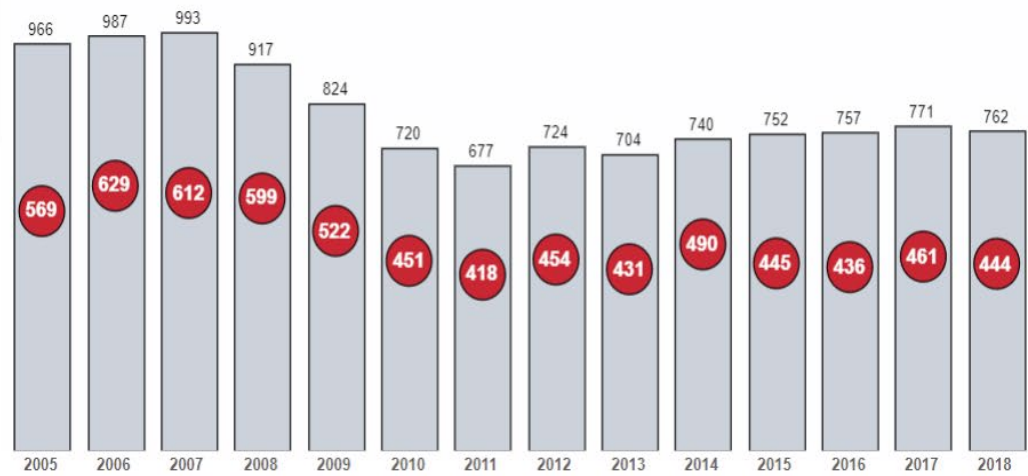
Injury Level

Fatal



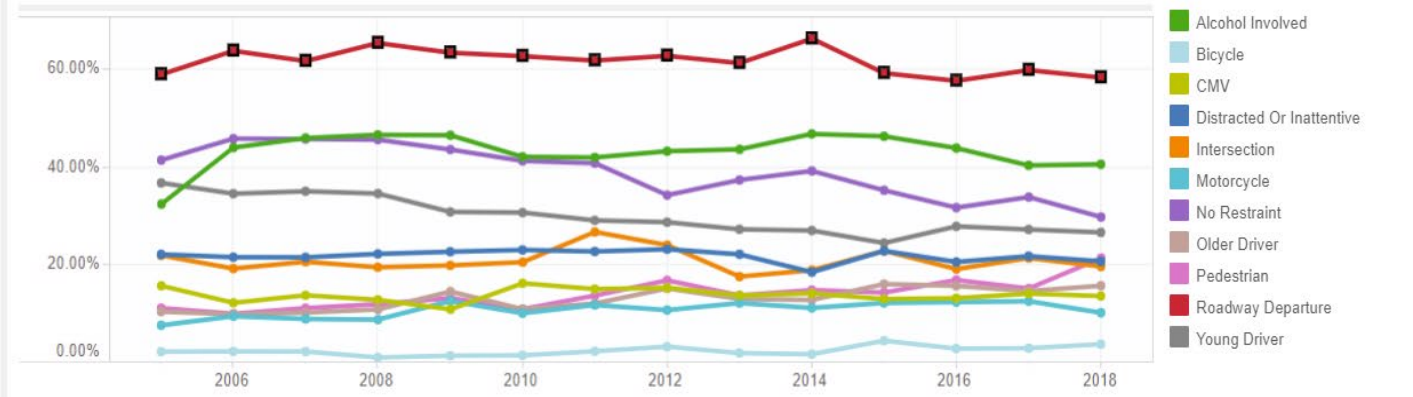
© OpenStreetMap contributors

Highlighted Parishes on map above had one or more Fatal injuries last year associated with the **Roadway Departure** contributing factor. Mouse over each parish for more information.



Bars show the total number of Fatal injuries in the State of Louisiana. Bar counts include all contributing factors.

Dots show the number of Fatal injuries for the **Roadway Departure** contributing factor in the State of Louisiana. Mouse over dots for more information.



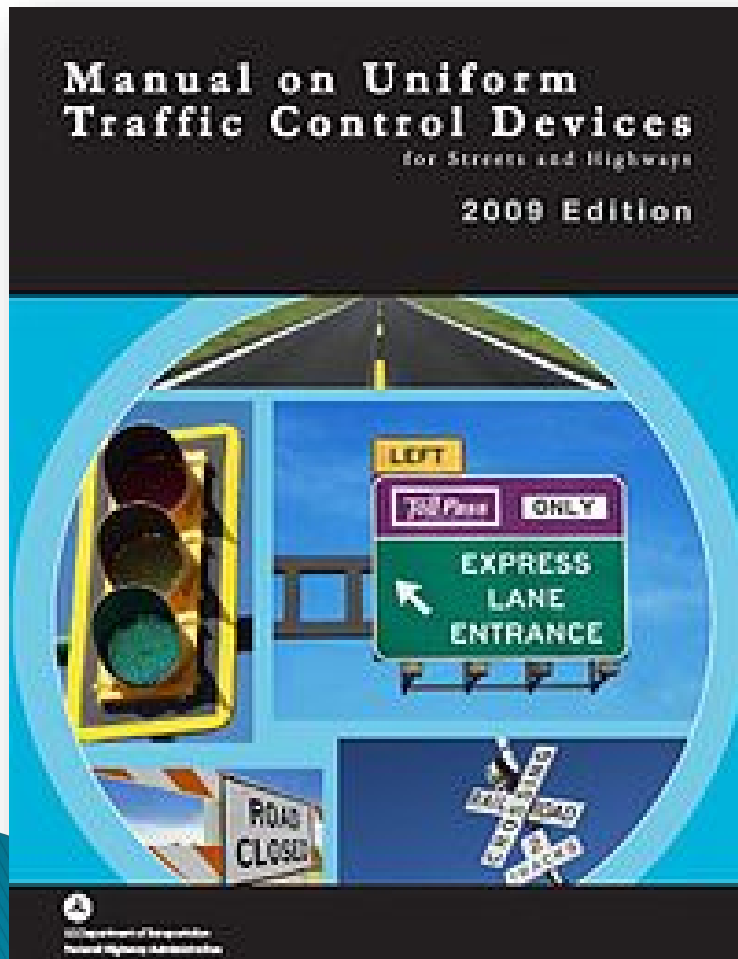
Source: www.hsrg.lsu.edu

Purpose of Signs

- 1. Positive Warning & Guidance**
- 2. Prevent Collisions**
- 3. Reduce (Tort) Liability**



Manual of Uniform Traffic Control Devices (MUTCD)



- Chapter 1
- Chapter 2
- Chapter 5
- Retroreflectivity Guidance


Why a Sign?

Convey Messages

- Laws
- Warning
- Guide



Communicate!



Manual Uniform Traffic Devices (MUTCD): General Principles

Standards = Shall

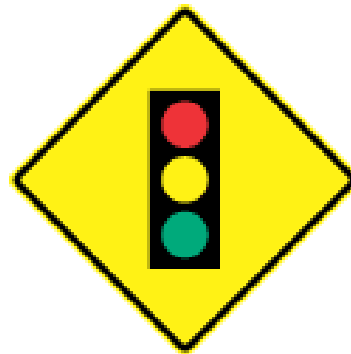
Guidance = Should

Options = May

Support= Additional Info

Standard Signs - Warning

- B. Warning signs give notice of a situation that might not be readily apparent.



Warning Signs



- ▶ Used to alert road users to conditions that might call for a reduction of speed or an action in the interest of safety and efficient traffic operations.
- ▶ The use of warning signs shall be based on an engineering study or on engineering judgment.
- ▶ The use of warning signs should be kept to a minimum as the unnecessary use of warning signs tends to breed disrespect for all signs.

Warning

- ▶ Diamond shaped unless specifically designated otherwise in the MUTCD
- ▶ Black letters on yellow background
- ▶ Exceptions:
 - Temporary Traffic Control (Work Zones)
 - Vulnerable Road Users

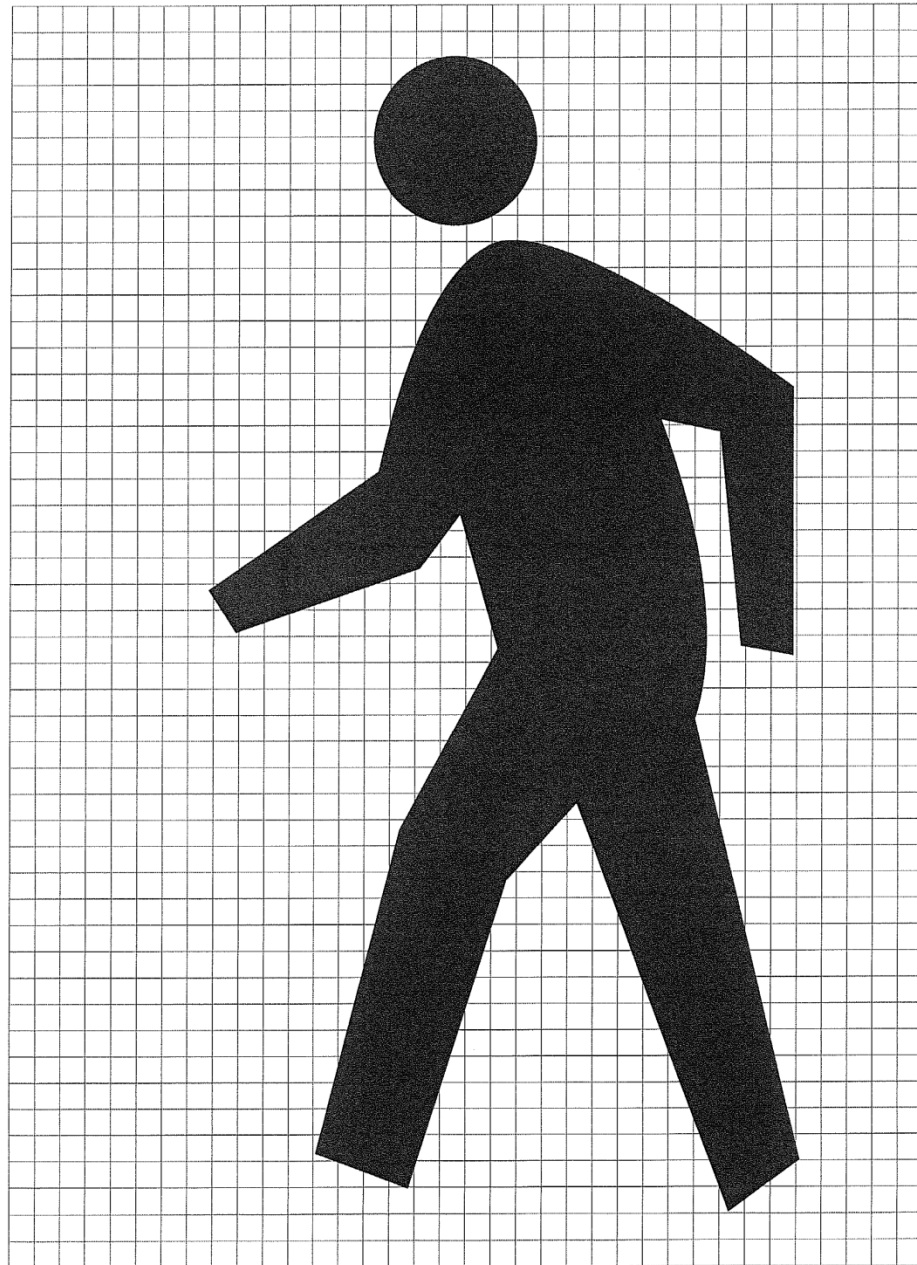


W11-1*



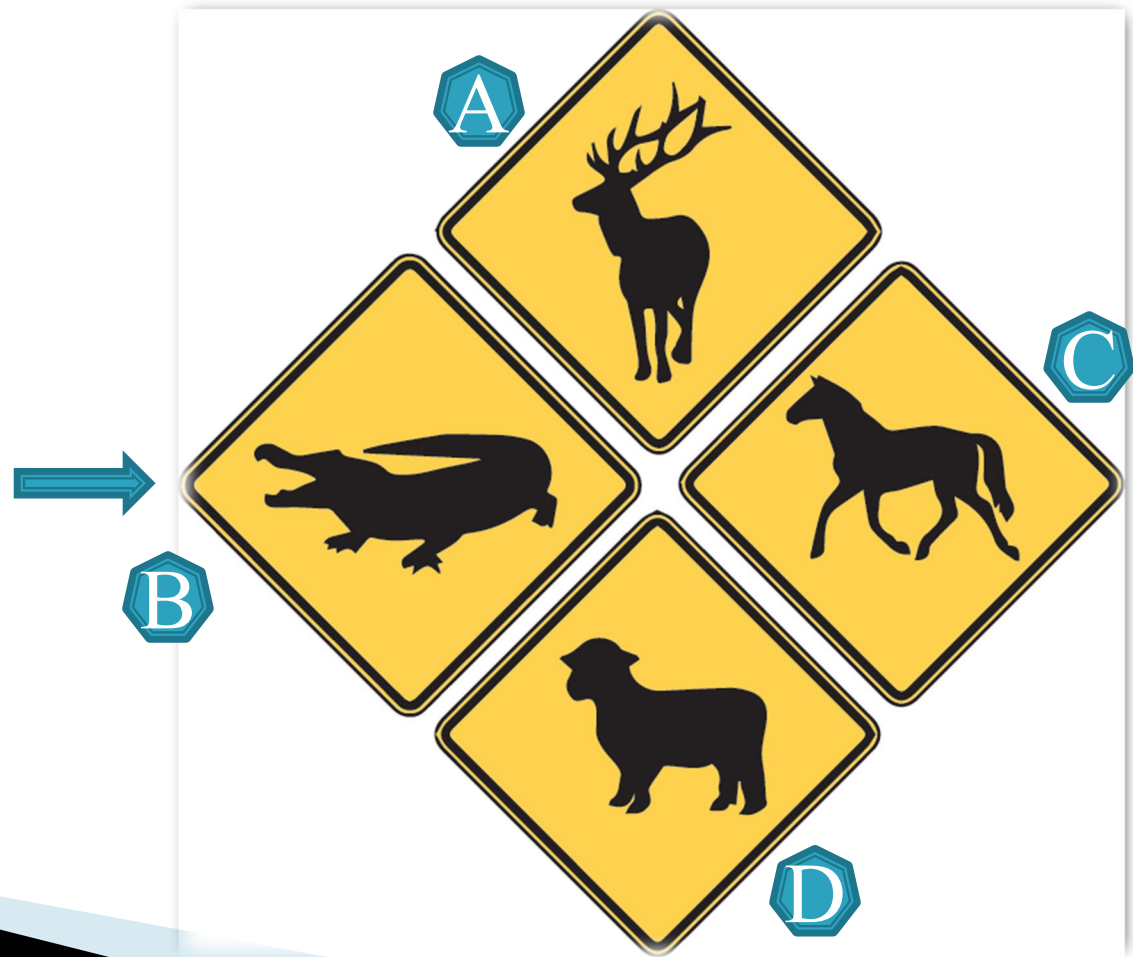
Symbols

Standard
symbols must
be used as
specified by
FHWA



Symbol Exercise

- ▶ Which sign is not in the MUTCD?



Symbol Exercise

- ▶ Which sign is not in the MUTCD?

A



B



C



D



Symbol Exercise

- ▶ Which sign is not in the MUTCD?



Symbol Exercise

- ▶ Which sign is not in the MUTCD?



D5-12

Symbol Exercise

- ▶ Which sign is not in the MUTCD?



Symbol Exercise

- ▶ Which sign is not in the MUTCD?



RS-061
Swimming



RS-017
Pets on Leash



RS-098
Skateboarding





RS-011
Deer Viewing Area



RS-012
Bear Viewing Area



RS-017
Pets on Leash



RS-031
Bus Stop



RS-036
Viewing Area



RS-042
Campfires



RS-080
Point of Interest



RS-090
Fire Extinguisher



RS-099
Rattlesnakes



RS-101
Cans or Bottles



RS-102
Snack Bar



RS-103
Radios



RS-111
Strollers



RS-115
Sea Plane



RS-120
Wood Gathering



RS-122
Walk on Boardwalk



RS-123
Stay on Trail



RS-140
Pick-up Trucks

Symbol Exercise



W1-1



W1-2



W1-5



W1-13



W7-1



W8-5



W11-5



W11-7



VEHICLES PARKED IN ROADWAY AND
OBSTRUCTING FLOW OF TRAFFIC ON
NORTH SHORE BOULEVARD
WILL BE TICKETED AND TOWED
AT THE OWNER'S EXPENSE.

STOP

STREET
REQUIRED
6AM-10PM
TOW ZONE

Sign Placement Techniques

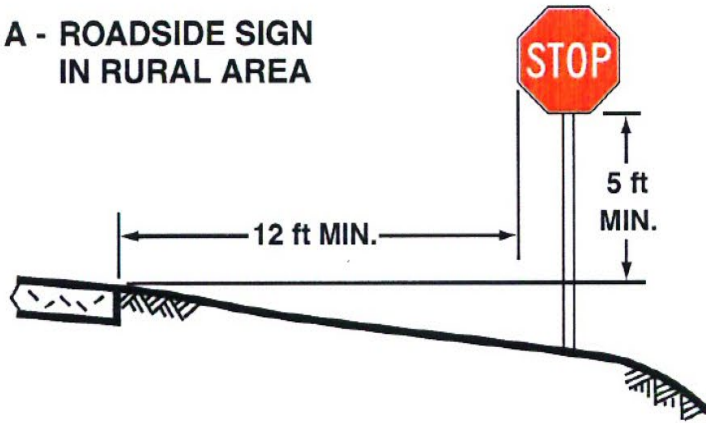


Roadside Signs

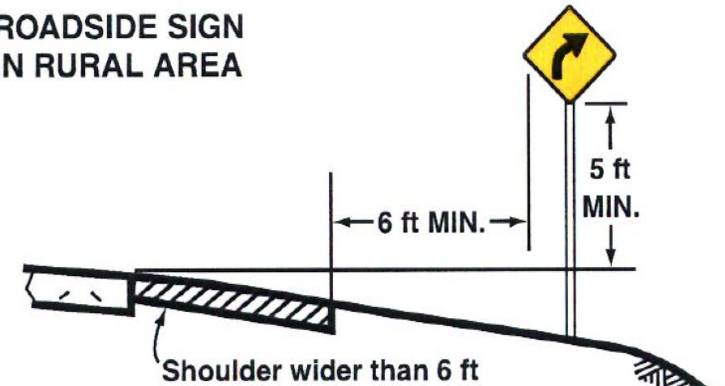
- ▶ Lateral Placement
- ▶ Height
- ▶ Longitudinal Placement and Advance Posting Distance

Placement Techniques

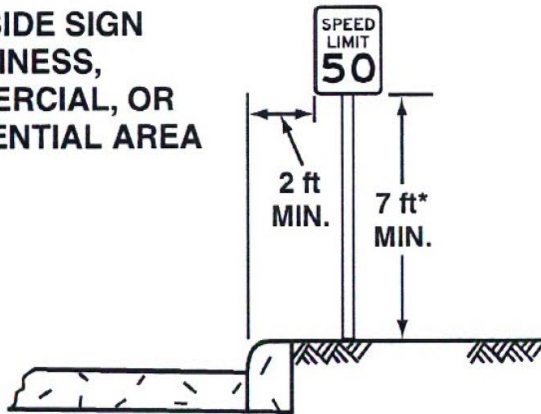
A - ROADSIDE SIGN
IN RURAL AREA



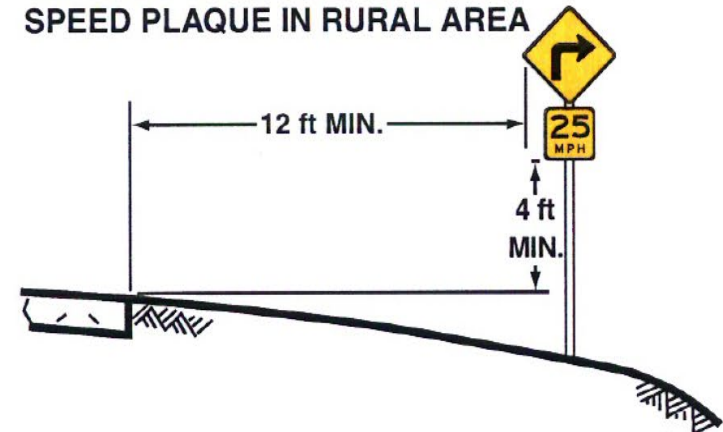
B - ROADSIDE SIGN
IN RURAL AREA



C - ROADSIDE SIGN
IN BUSINESS,
COMMERCIAL, OR
RESIDENTIAL AREA

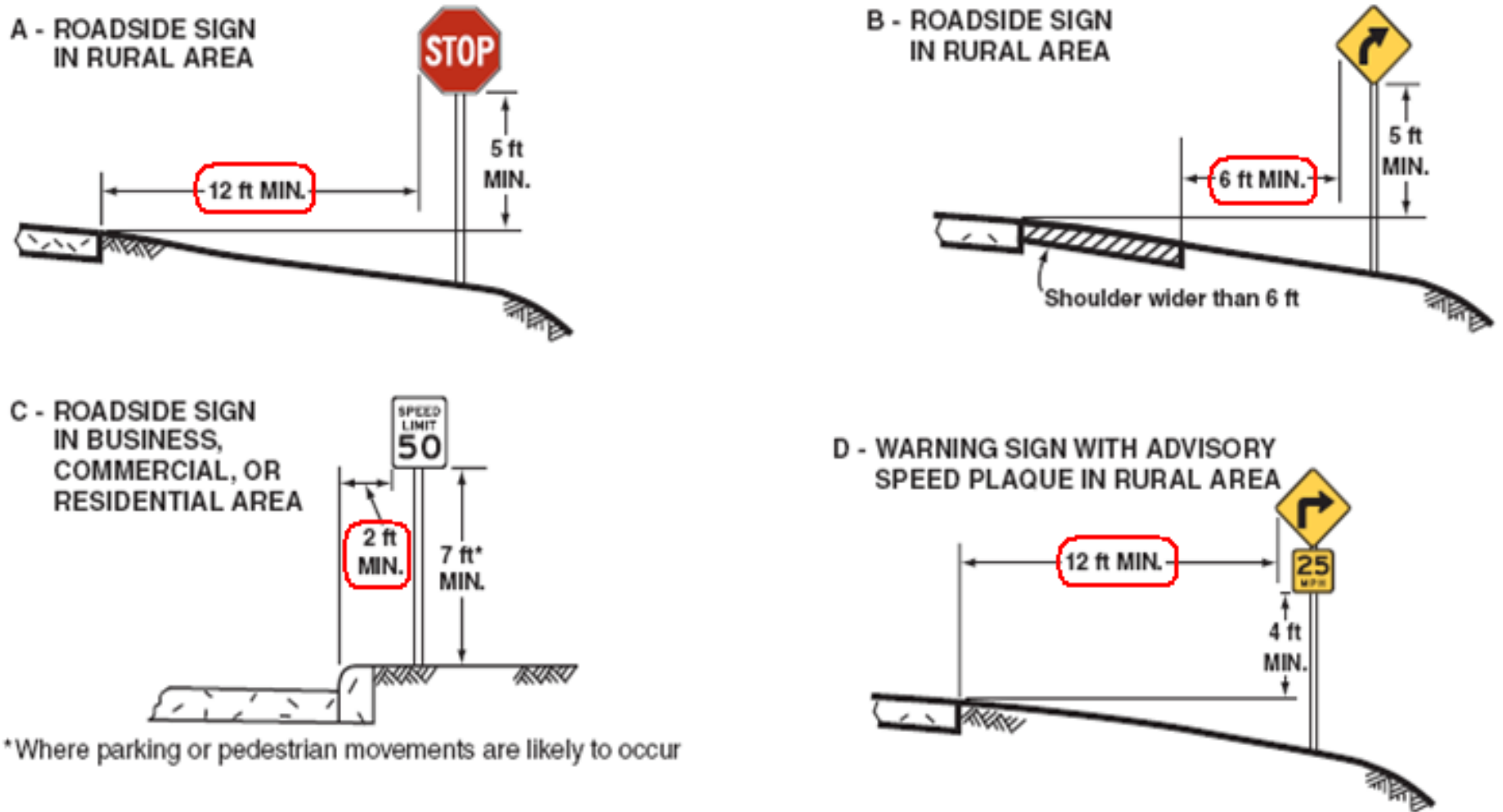


D - WARNING SIGN WITH ADVISORY
SPEED PLAQUE IN RURAL AREA



*Where parking or pedestrian movements are likely to occur

Figure 2A-2. Examples of Heights and Lateral Locations of Sign Installations



*Where parking or pedestrian movements are likely to occur

- ▶ Placed to provide an adequate Perception Reaction Time
- ▶ MUTCD Table 2C-4 show the guidelines for advance warning signs
- ▶ Do not place too far in advance of the condition because drivers might forget the warning because of other driving distractions

Warning Sign Placement



Advisory Speed Plaque

****Section 2C.08.**

05 The Advisory Speed Plaque shall only be used to supplement a warning sign and shall not be installed as a separate sign installation.

06 The advisory speed shall be determined by an engineering study that follows established engineering practices.

I can't work alone! ☹️



W13-1P



Table 2C-4. Guidelines for Advance Placement of Warning Signs

Posted or 85th-Percentile Speed	Advance Placement Distance ¹								
	Condition A: Speed reduction and lane changing in heavy traffic ²	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 ³	10 ⁴	20 ⁴	30 ⁴	40 ⁴	50 ⁴	60 ⁴	70 ⁴
20 mph	225 ft	100 ft ⁶	N/A ⁵	—	—	—	—	—	—
25 mph	325 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
30 mph	460 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
35 mph	565 ft	100 ft ⁶	N/A ⁵	N/A ⁵	N/A ⁵	—	—	—	—
40 mph	670 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft ⁶	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A ⁵	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft ⁶	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft ⁶	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft ⁶

¹ The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B have been adjusted for a sign legibility distance of 250 feet, which is appropriate for an alignment warning symbol sign. For Conditions A and B, warning signs with less than 6-inch legend or more than four words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.

² Typical conditions are locations where the road user must use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PRT of 14.0 to 14.5 seconds for vehicle maneuvers (2005 AASHTO Policy, Exhibit 3-3, Decision Sight Distance, Avoidance Maneuver E) minus the legibility distance of 180 feet for the appropriate sign.

³ Typical condition is the warning of a potential stop situation. Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection Warning signs. The distances are based on the 2005 AASHTO Policy, Exhibit 3-1, Stopping Sight Distance, providing a PRT of 2.5 seconds, a deceleration rate of 11.2 feet/second², minus the sign legibility distance of 180 feet.

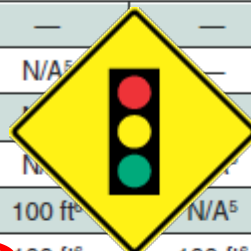
⁴ Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 second PRT, a vehicle deceleration rate of 10 feet/second², minus the sign legibility distance of 250 feet.

⁵ No suggested distances are provided for these speeds, as the placement location is dependent on site conditions and other signing. An alignment warning sign may be placed anywhere from the point of curvature up to 100 feet in advance of the curve. However, the alignment warning sign should be installed in advance of the curve and at least 100 feet from any other signs.

⁶ The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

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20 mph	225 ft	100 ft ⁶	N/A ⁵	—	—	—	—	—	—
25 mph	325 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
30 mph	460 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
35 mph	565 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
40 mph	670 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft ⁶	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A ⁵	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft ⁶	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft ⁶	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft ⁶



¹ The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B have been adjusted for a sign legibility distance of 250 feet, which is appropriate for an alignment warning symbol sign. For Conditions A and B, warning signs with less than 6-inch legend or more than four words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.

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25 mph	325 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
30 mph	460 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
35 mph	565 ft	100 ft ⁶	N/A ⁵	N/A ⁵	N/A ⁵	—	—	—	—
40 mph	670 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	125 ft	100 ft ⁶	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A ⁵	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft ⁶	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft ⁶	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft ⁶



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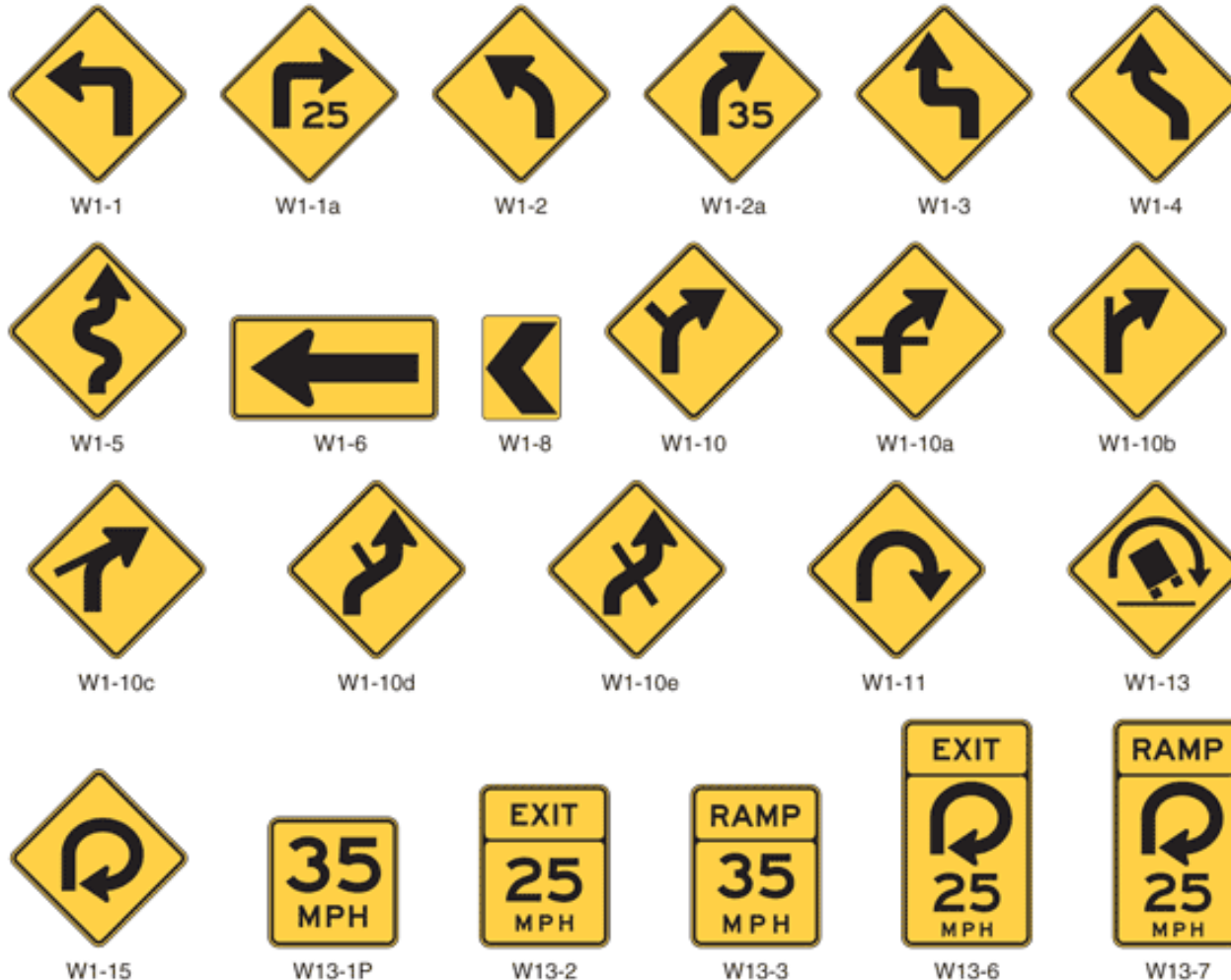
⁶ The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

Horizontal Alignment Signs

- ▶ Shall be used in advance of horizontal curves:
 - on freeways,
 - on expressways, and
 - on roadways with more than 1,000 AADT

Horizontal Alignment Signs

Figure 2C-1. Horizontal Alignment Signs and Plaques



Note: Turn arrows and reverse turn arrows may be substituted for the curve arrows and reverse curve arrows on the W1-10 series signs where appropriate.



Proper signing for curves

- ▶ Traffic volume of the roadway
- ▶ Speed limit of the roadway, or prevailing speed on the approach
- ▶ Proper advisory speed for the curve
- ▶ Difference between prevailing speed and advisory speed.

Finding ADT

- ▶ Go to dotd.la.gov
- ▶ Search “Traffic Counts”
- ▶ Select “Blanket Counts” for your parish
- ▶ Select “Download the data in csv format”

The screenshot displays the LaDOTD website interface. At the top left is the LaDOTD logo with the text "LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT". To the right is a search bar and social media icons for Facebook, YouTube, and Twitter. Below this is a navigation menu with categories: "About DOTD", "Employment", "Maps / GIS", and "News & Events". A secondary menu includes "RESIDENTS In My Community", "BUSINESS Working With DOTD", "GOVERNMENT State and Local Resources", and "INSIDE La DOTD". The main content area shows a breadcrumb trail: "Home > Residents > Traffic". The title is "LADOTD Estimated Average Daily Traffic (ADT) Blanket Traffic Counts". A dropdown menu for "Select a parish:" is set to "58-Vernon". Below this are navigation tips: "Use scroll wheel to zoom in and out. Drag to move map. Double-click to center and zoom in on a point. Hover over a point to show Street Name and...". A "download" button is provided for downloading the data in ".csv" format. Contact information for "Traffic Monitoring" is listed, along with a link to "Go to Routine Traffic Counts". The main feature is a map of the Vernon Parish area, showing numerous red circular markers representing traffic count locations. Labels on the map include "Joint Readiness Training Center", "Fort Polk Wildlife Management Area", "Fort Polk Military Reservation", and "Burkeville". Map controls like a "Road" dropdown, a search icon, and zoom in/out buttons are visible on the right side of the map.

Finding ADT

PARISH_N AME	STREET_NAME	LRS_ID	LRS_LOG MILE	YEAR1	YEAR2	YEAR3	ADT1	ADT2	ADT3	LONGITU LATITUDE DE
Acadia	Basile Eunice Hwy	012-10-2-010	7.569	2007	1986		6124	2813		30.48118 -92.6177
Acadia	Basile Eunice Hwy	012-10-1-010	0.018	2006	1986		5972	3455		30.48103 -92.6174
Acadia	Belton St	3.99005E+16	0.004	2006	1986	1981	469	283	299	30.48098 -92.6069
Acadia	Paul Bellon Rd	1.90352E+15	0.201	2006	1986	1981	532	376	566	30.48005 -92.5962
Acadia				2006	1986	1981	360	231	271	30.47683 -92.5966
Acadia	Miguel Rd	1.90283E+15	0.212	2006	1986	1981	151	69	62	30.47707 -92.5934
Acadia	Alfa Romeo Rd	1.90026E+15	3.803	2006	1986	1981	434	278	294	30.47968 -92.5897
Acadia	Basile Eunice Hwy	012-10-2-010	5.641	2006			6587			30.48052 -92.5854
Acadia	Evangeline Hwy	201-03-1-010	10.876	2006			903			30.47943 -92.5813
Acadia	Basile Eunice Hwy	012-10-1-010	2.264	2006			6140			30.48057 -92.5798
Acadia	Bryan Perrodin Loop	1.90071E+15	0.058	2006	1986	1981	42	14	20	30.4797 -92.5728
Acadia	Bryan Perrodin Loop	1.90071E+15	1.71	2006	1986	1981	37	27	43	30.48 -92.56

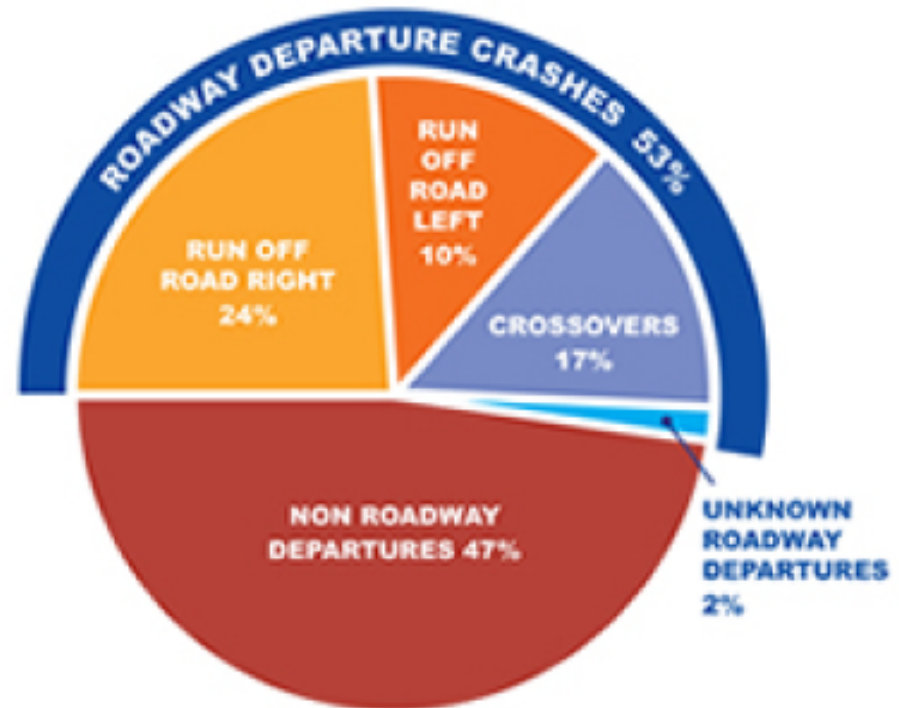
Proper signing for curves

Reasons for the new requirements

- Roadway Departure Safety Concerns

An emphasis area for the FHWA to reduce fatalities & crash severity

Roadway Departure Crashes Account for 53 Percent of Fatal Crashes



Source: FHWA Office of Safety

Figure 2C-2. Example of Warning Signs for a Turn

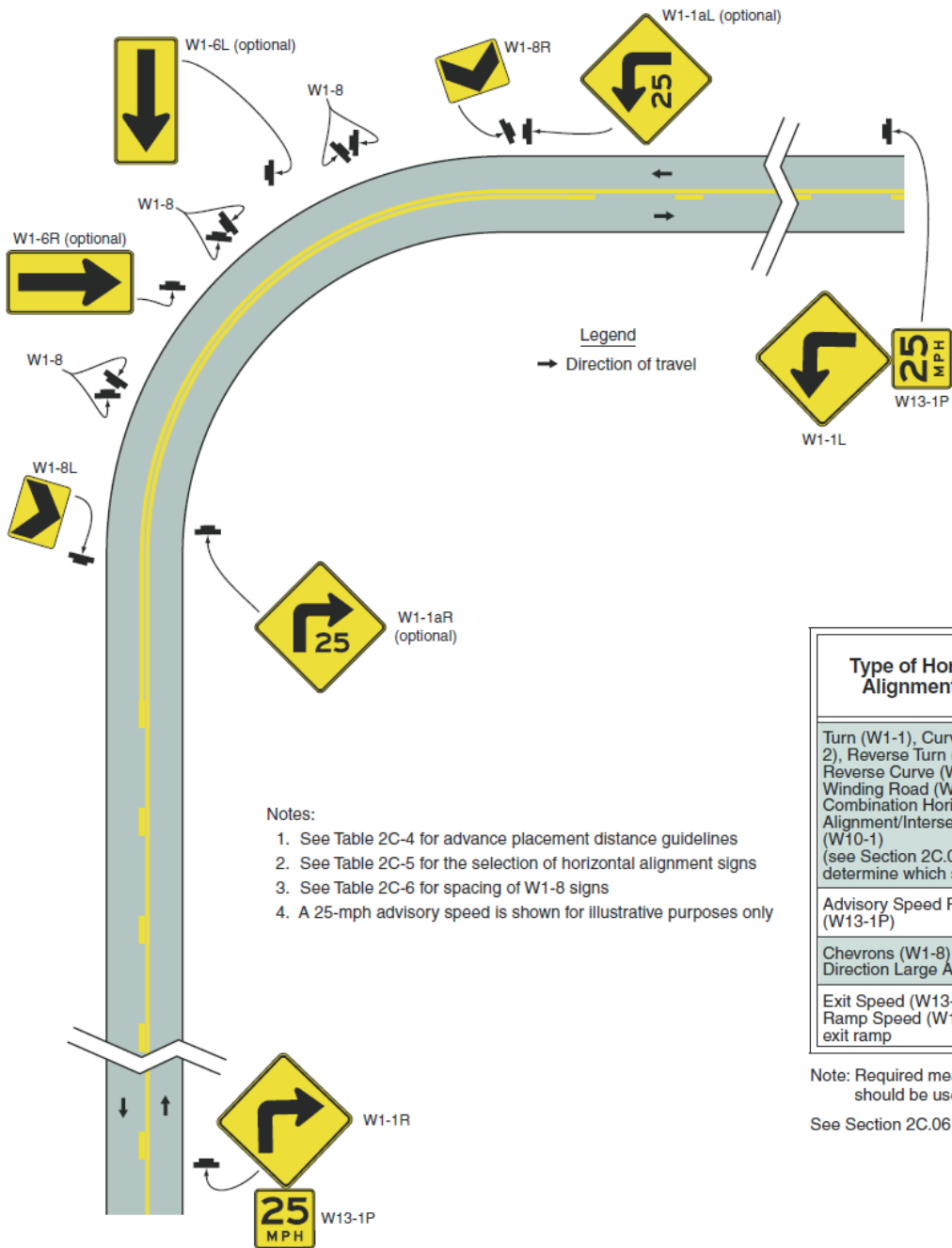


Table 2C-5. Horizontal Alignment Sign Selection

Type of Horizontal Alignment Sign	Difference Between Speed Limit and Advisory Speed				
	5 mph	10 mph	15 mph	20 mph	25 mph or more
Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W10-1) (see Section 2C.07 to determine which sign to use)	Recommended	Required	Required	Required	Required
Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

Note: Required means that the sign and/or plaque shall be used, recommended means that the sign and/or plaque should be used, and optional means that the sign and/or plaque may be used.

See Section 2C.06 for roadways with less than 1,000 ADT.

Figure 2C-2. Example of Warning Signs for a Turn

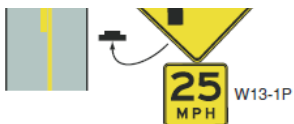


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Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

Note: Required means that the sign and/or plaque shall be used, recommended means that the sign and/or plaque should be used, and optional means that the sign and/or plaque may be used.

See Section 2C.06 for roadways with less than 1,000 ADT.



W1-6



W1



Table 2C-4. Guidelines for Advance Placement of Warning Signs

Posted or 85th-Percentile Speed	Advance Placement Distance ¹								
	Condition A: Speed reduction and lane changing in heavy traffic ²	Condition B: Deceleration to the listed advisory speed (mph) for the condition							
		0 ³	10 ⁴	20 ⁴	30 ⁴	40 ⁴	50 ⁴	60 ⁴	70 ⁴
20 mph	225 ft	100 ft ⁶	N/A ⁵	—	—	—	—	—	—
25 mph	325 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
30 mph	460 ft	100 ft ⁶	N/A ⁵	N/A ⁵	—	—	—	—	—
35 mph	565 ft	100 ft ⁶	N/A ⁵	N/A ⁵	N/A ⁵	—	—	—	—
40 mph	670 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—	—
45 mph	775 ft	175 ft	125 ft	100 ft ⁶	100 ft ⁶	N/A ⁵	—	—	—
50 mph	885 ft	250 ft	200 ft	175 ft	100 ft ⁶	100 ft ⁶	—	—	—
55 mph	990 ft	325 ft	275 ft	225 ft	200 ft	125 ft	N/A ⁵	—	—
60 mph	1,100 ft	400 ft	350 ft	325 ft	275 ft	200 ft	100 ft ⁶	—	—
65 mph	1,200 ft	475 ft	450 ft	400 ft	350 ft	275 ft	200 ft	100 ft ⁶	—
70 mph	1,250 ft	550 ft	525 ft	500 ft	450 ft	375 ft	275 ft	150 ft	—
75 mph	1,350 ft	650 ft	625 ft	600 ft	550 ft	475 ft	375 ft	250 ft	100 ft ⁶



- ¹ The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B have been adjusted for a sign legibility distance of 250 feet, which is appropriate for an alignment warning symbol sign. For Conditions A and B, warning signs with less than 6-inch legend or more than four words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.
- ² Typical conditions are locations where the road user must use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PRT of 14.0 to 14.5 seconds for vehicle maneuvers (2005 AASHTO Policy, Exhibit 3-3, Decision Sight Distance, Avoidance Maneuver E) minus the legibility distance of 180 feet for the appropriate sign.
- ³ Typical condition is the warning of a potential stop situation. Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection Warning signs. The distances are based on the 2005 AASHTO Policy, Exhibit 3-1, Stopping Sight Distance, providing a PRT of 2.5 seconds, a deceleration rate of 11.2 feet/second², minus the sign legibility distance of 180 feet.
- ⁴ Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 second PRT, a vehicle deceleration rate of 10 feet/second², minus the sign legibility distance of 250 feet.
- ⁵ No suggested distances are provided for these speeds, as the placement location is dependent on site conditions and other signing. An alignment warning sign may be placed anywhere from the point of curvature up to 100 feet in advance of the curve. However, the alignment warning sign should be installed in advance of the curve and at least 100 feet from any other signs.
- ⁶ The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

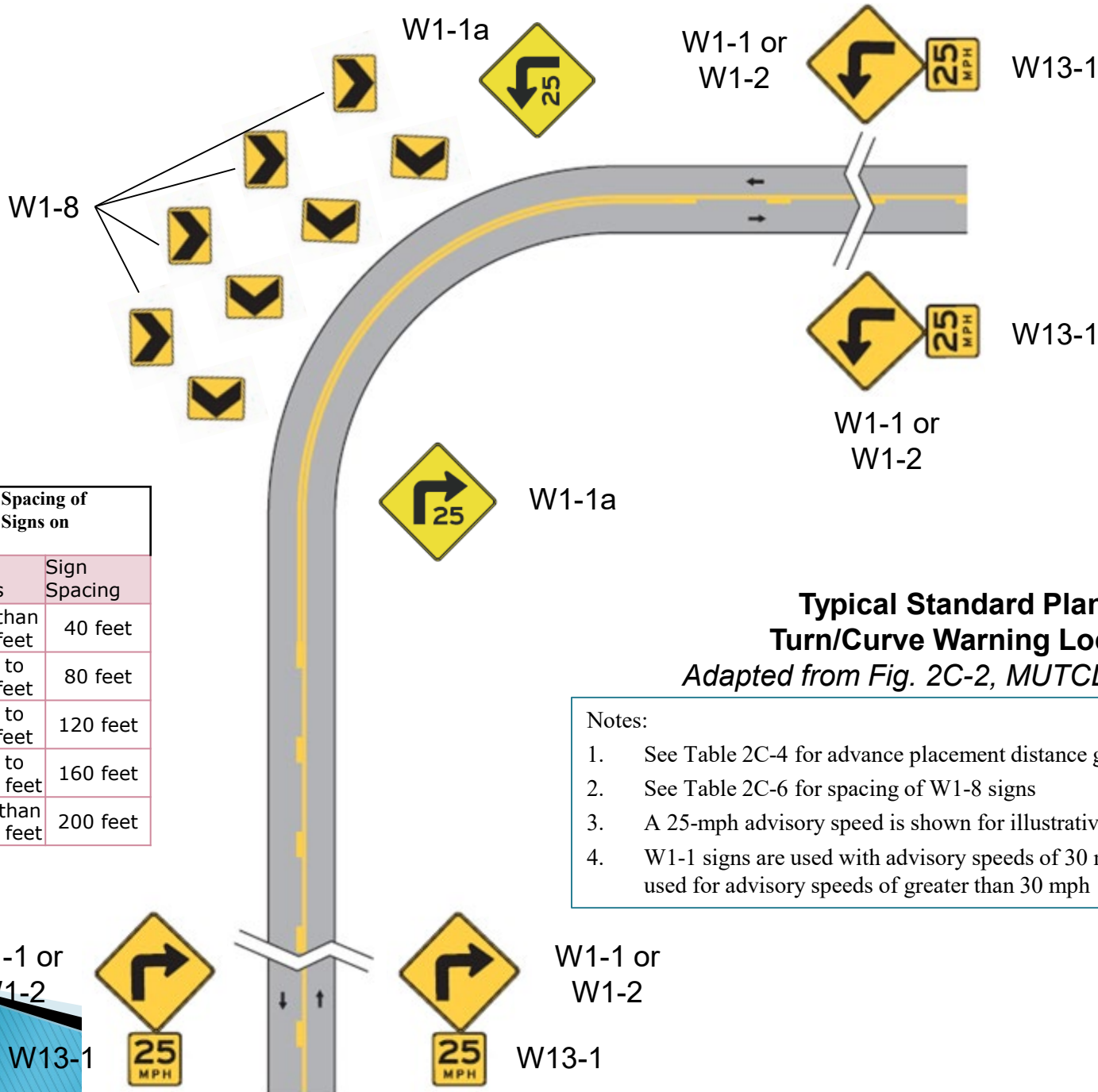


Table 2C-6. Typical Spacing of Chevron Alignment Signs on Horizontal Curves

Advisory Speed	Curve Radius	Sign Spacing
15 mph or less	Less than 200 feet	40 feet
20 to 30 mph	200 to 400 feet	80 feet
35 to 45 mph	401 to 700 feet	120 feet
50 to 60 mph	701 to 1,250 feet	160 feet
More than 60 mph	More than 1,250 feet	200 feet

Typical Standard Plans for Turn/Curve Warning Locations
Adapted from Fig. 2C-2, MUTCD 2009 Edition

- Notes:
1. See Table 2C-4 for advance placement distance guidelines
 2. See Table 2C-6 for spacing of W1-8 signs
 3. A 25-mph advisory speed is shown for illustrative purposes only
 4. W1-1 signs are used with advisory speeds of 30 mph or less; W1-2 is used for advisory speeds of greater than 30 mph

What's wrong with this picture?



“New” Requirements for Horizontal Alignment Signs

Sign Type

- Advance Warning



W1-1



W1-2



W1-3



W1-4

- Advisory Speed



W13-1P

- Large Arrow, Chevrons

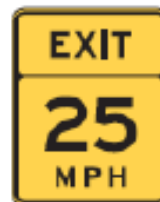


W1-5

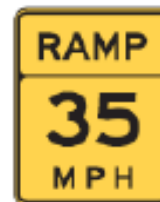


W1-8

- Exit Ramp signs



W13-2



W13-3

Inputs to Table 2C-5

Speed

- Speed Limit



R2-1

- Advisory Speed



W1-1R

W13-1P

- Difference between the two

Speed Limit

- ▶ Table: “Speed Limit”
- ▶ Text: “Posted, Statutory, or 85th Percentile, whichever is higher, or the prevailing speed”
- ▶ Agency policy?

Advisory Speed

- ▶ Established engineering practices
- ▶ Accelerometer (side friction factors)
- ▶ Design speed equation
- ▶ Traditional ball bank indicator



Source: Rieker Electronics, Inc. & R.Seyfried, J. Pline



source: R. Seyfried

New Ball Bank Indicator Criteria

- ▶ 16 degrees: 20 mph or less
- ▶ 14 degrees: 25 to 30 mph
- ▶ 12 degrees: 35 mph or more

Photo credit:
R. Seyfried

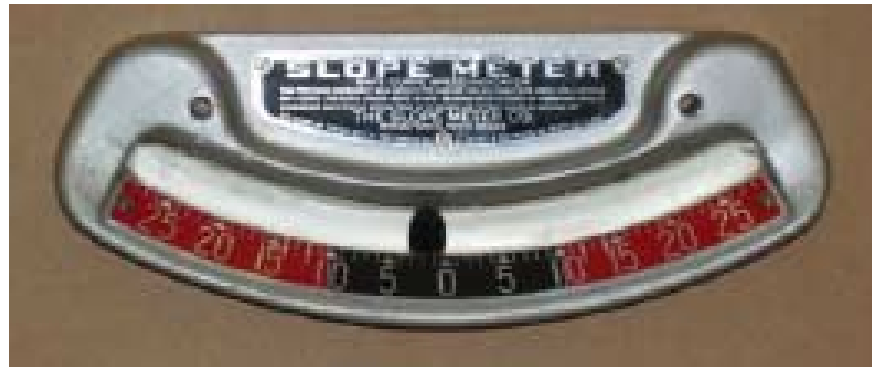


Table 2C-5 “Shall”s

Table 2C-5. Horizontal Alignment Sign Selection

Type of Horizontal Alignment Sign	Difference Between Speed Limit and Advisory Speed				
	5 mph	10 mph	15 mph	20 mph	25 mph or more
Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W10-1) (see Section 2C.07 to determine which sign to use)	Recommended	Required	Required	Required	Required
Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

Note: Required means that the sign and/or plaque shall be used, recommended means that the sign and/or plaque should be used, and optional means that the sign and/or plaque may be used.

Table 2C-5 “Should”s

Table 2C-5. Horizontal Alignment Sign Selection

Type of Horizontal Alignment Sign	Difference Between Speed Limit and Advisory Speed				
	5 mph	10 mph	15 mph	20 mph	25 mph or more
Turn (W1-1), Curve (W1-2), Reverse Turn (W1-3), Reverse Curve (W1-4), Winding Road (W1-5), and Combination Horizontal Alignment/Intersection (W10-1) (see Section 2C.07 to determine which sign to use)	Recommended	Required	Required	Required	Required
Advisory Speed Plaque (W13-1P)	Recommended	Required	Required	Required	Required
Chevrons (W1-8) and/or One Direction Large Arrow (W1-6)	Optional	Recommended	Required	Required	Required
Exit Speed (W13-2) and Ramp Speed (W13-3) on exit ramp	Optional	Optional	Recommended	Required	Required

Note: Required means that the sign and/or plaque shall be used, recommended means that the sign and/or plaque should be used, and optional means that the sign and/or plaque may be used.



Louisiana Local Road Traffic Sign Handbook for Parishes and Small Communities



Sign Inventory



Too Much Information?

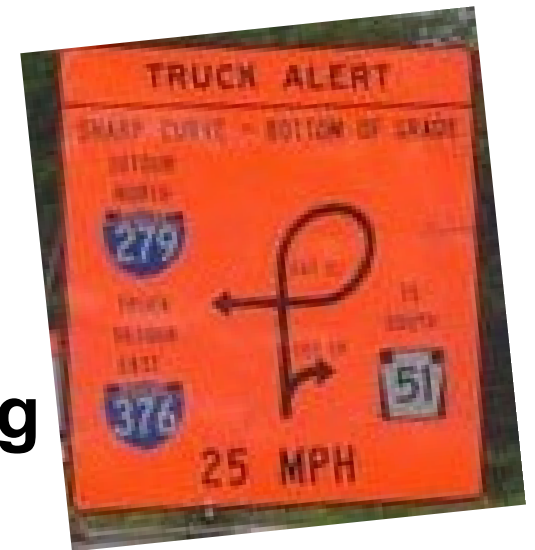


Any Questions?



No Conflicting Messages

No Confusing Information



Any Questions?



Please fill out your EVALUATIONS!

Thank You!



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