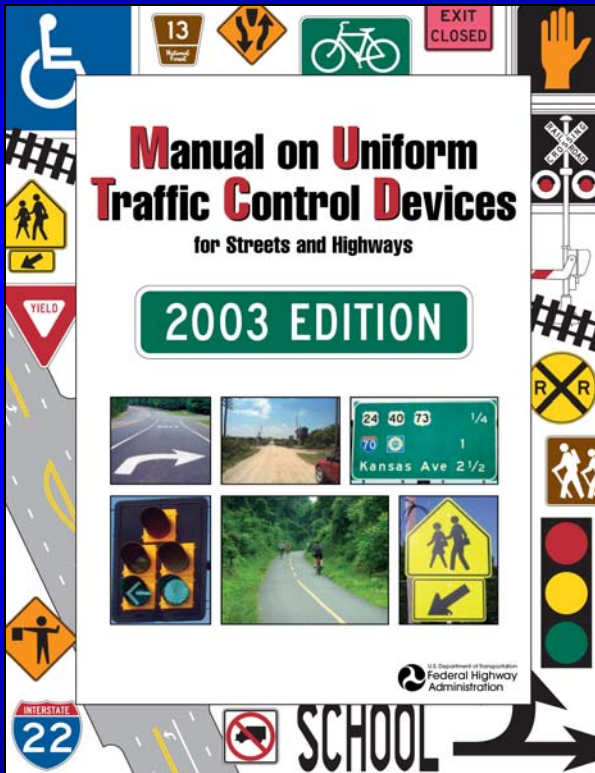


MUTCD Primer and California Adoption

Matt Schmitz, FHWA
Johnny Bhullar, Caltrans

Caltrans District 4 & ITE

January 29, 2004





**U.S DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

**MATTHEW SCHMITZ, P.E.
Safety/Traffic Engineer**

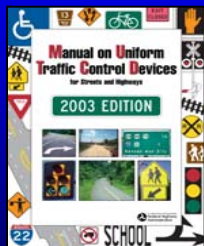
**CALIFORNIA DIVISION
650 Capitol Mall, Suite 4-100
Sacramento, CA 95814**

**(916) 498-5850
FAX (916) 498-5008
matthew.schmitz@fhwa.dot.gov**

California's MUTCD Adoption Plans

Johnny Bhullar, P.E., T.E.

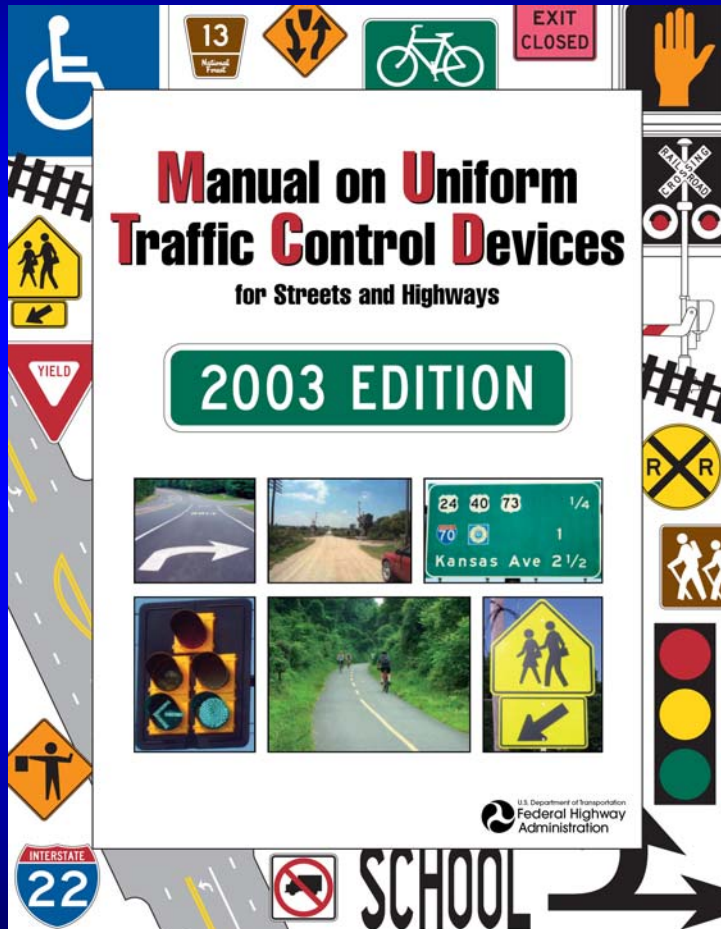
Caltrans, Division of Traffic Operations
Office of Signs, Markings & Permits
(916) 654-7312
johnny_bhullar@dot.ca.gov



+



What is the MUTCD?



National MUTCD

National standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel.



Why the MUTCD?

TCD uniformity promotes highway safety and efficiency (1927)

- Signs, Markings, Signals
- Regulatory, Warning, Guide



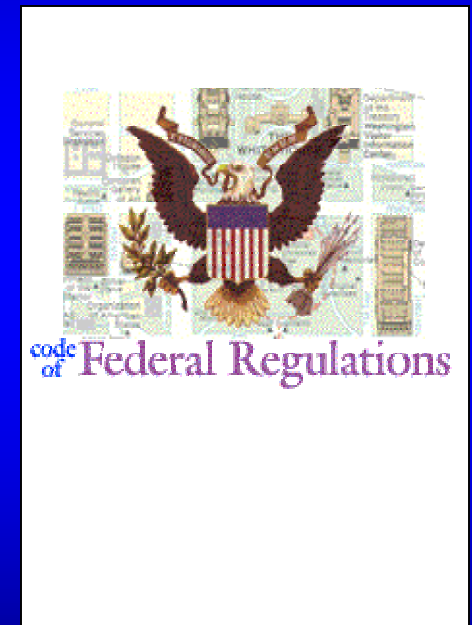
Why the MUTCD? (cont.)

Federal law requires States to adopt the National MUTCD

OR

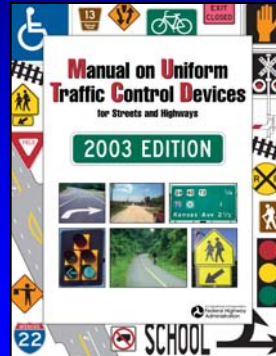
States may adopt a manual that is in substantial conformance with the MUTCD:

- State MUTCDs
- Supplements



Meeting the MUTCD Requirement

- National MUTCD



- National MUTCD + Supplement



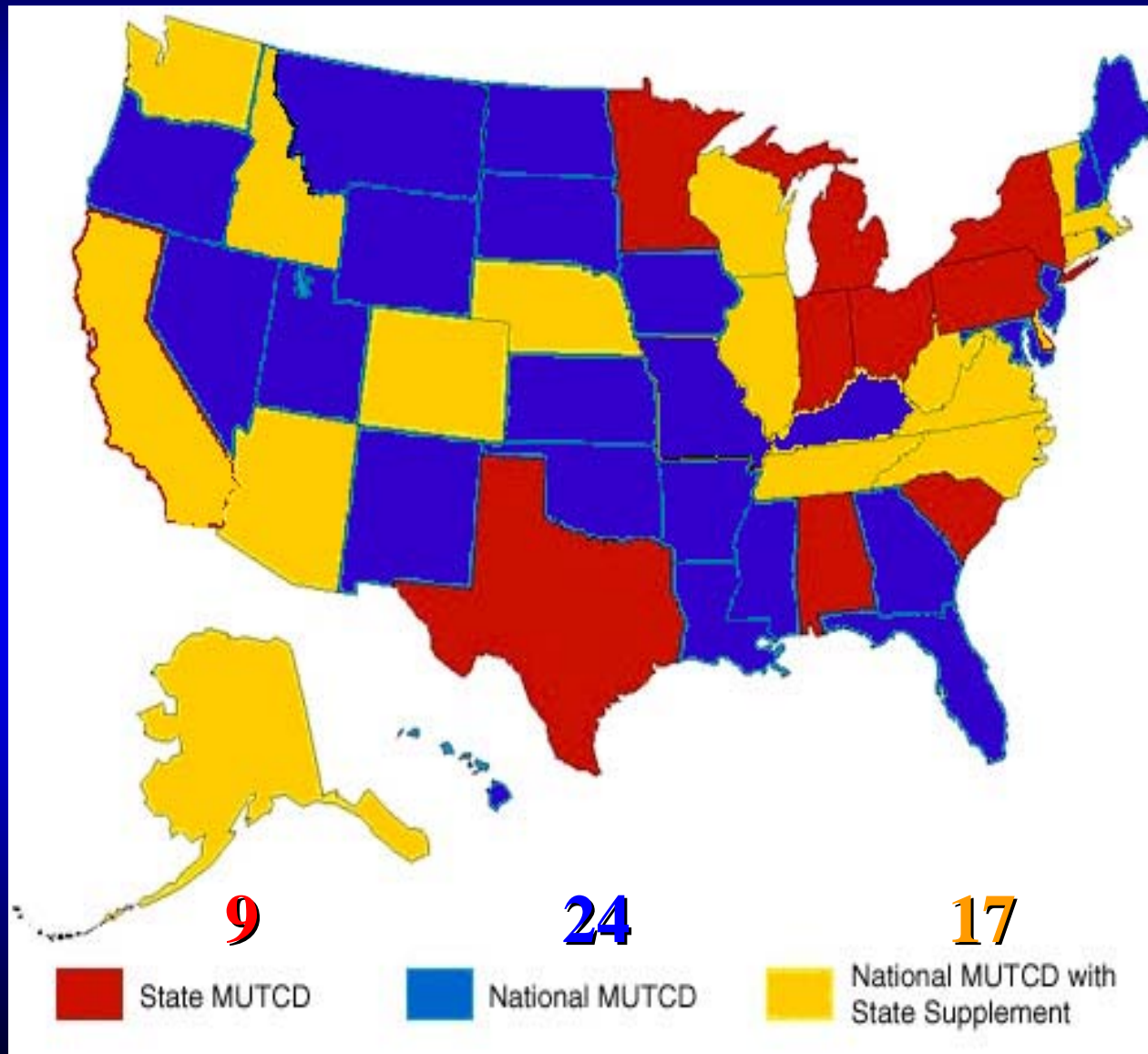
+



- State MUTCD



Adoption by State



MUTCD by State

(DRAFT-white letters on p

FHWA MUTCD (24)		FHWA MUTCD + Supplement (17)		State MUTCD (9)
AR	MT	AK	NE	AL
FL	NV	AZ	NC	CA*
GA	NH	CA*	TN	IN
HI	NJ	CO	VT	MI
IA	NM	CT	VA	MN
KS	ND	DE	WA	NY
KY	OK	ID	WV	OH
LA	OR	IL	WI	PA
ME	RI	MA		SC
MD	SD			TX
MS	UT			
MO	WY			

MUTCD by State

FHWA MUTCD (24)		FHWA MUTCD + Supplement (17)		State MUTCD (9)
AR	MT	AK	NE	AL
FL	NV	AZ	NC	CA*
GA	NH	CA*	TN	IN
HI	NJ	CO	VT	MI
IA	NM	CT	VA	MN
KS	ND	DE	WA	NY
KY	OK	ID	WV	OH
LA	OR	IL	WI	PA
ME	RI	MA		SC
MD	SD			TX
MS	UT			
MO	WY			

MUTCD Applies to.....?



Freeways

MUTCD Applies to.....?



Residential Streets

MUTCD Applies to.....?



Privately-owned parking lot

MUTCD Applies to.....?



Freeways



Residential Streets



Privately-owned parking lot

23 CFR 655.603 - TCDs

National MUTCD

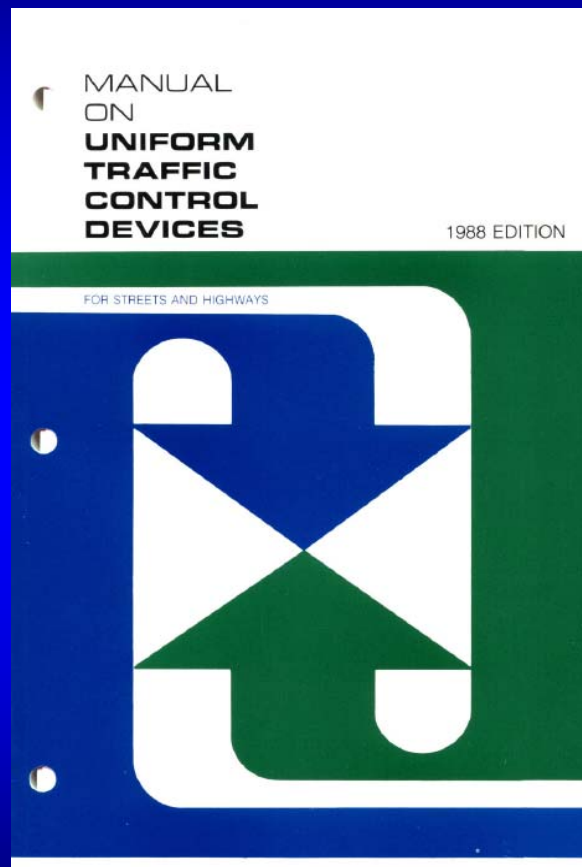
National standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel.

State MUTCDs or supplements

Shall be in substantial conformance with the National MUTCD.



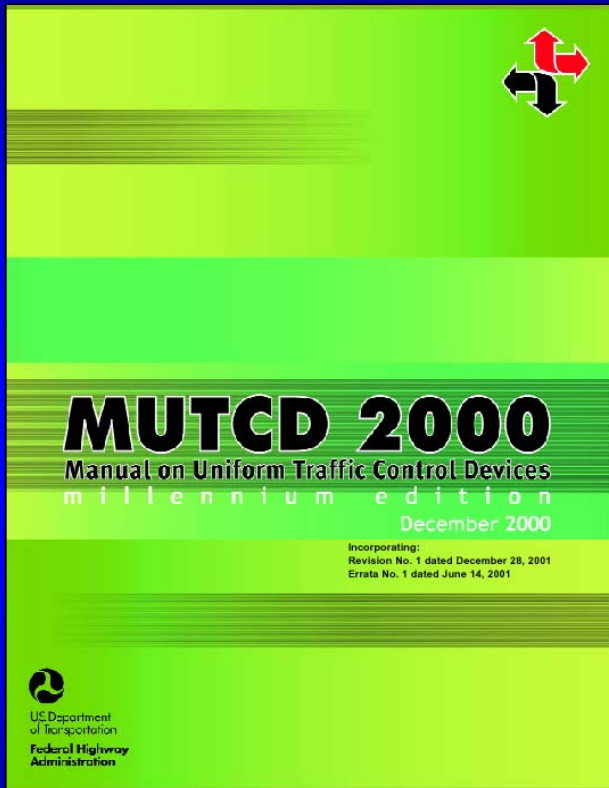
MUTCD 1988



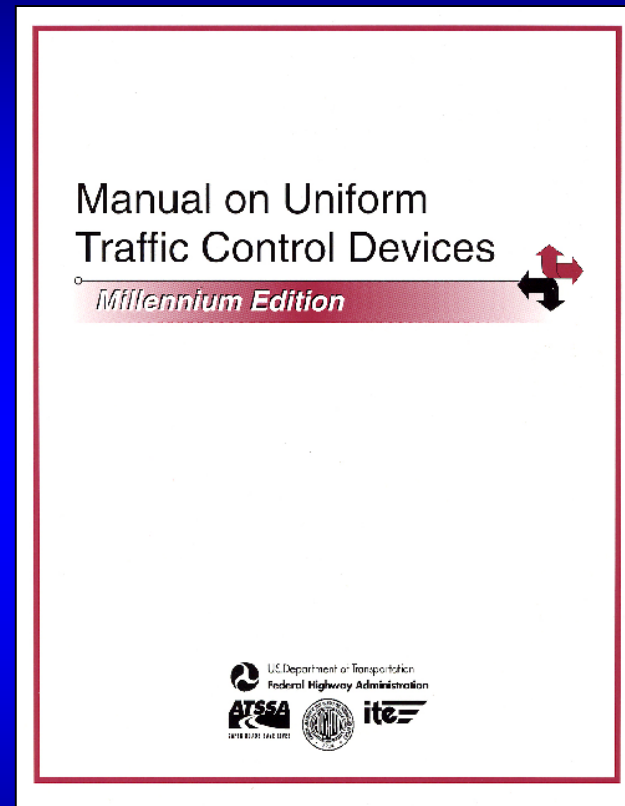
- Had been revised/amended seven times
- First Revision was in 1990
- Last Revision was in 2000



MUTCD 2000



Web Site Version



Printed Version

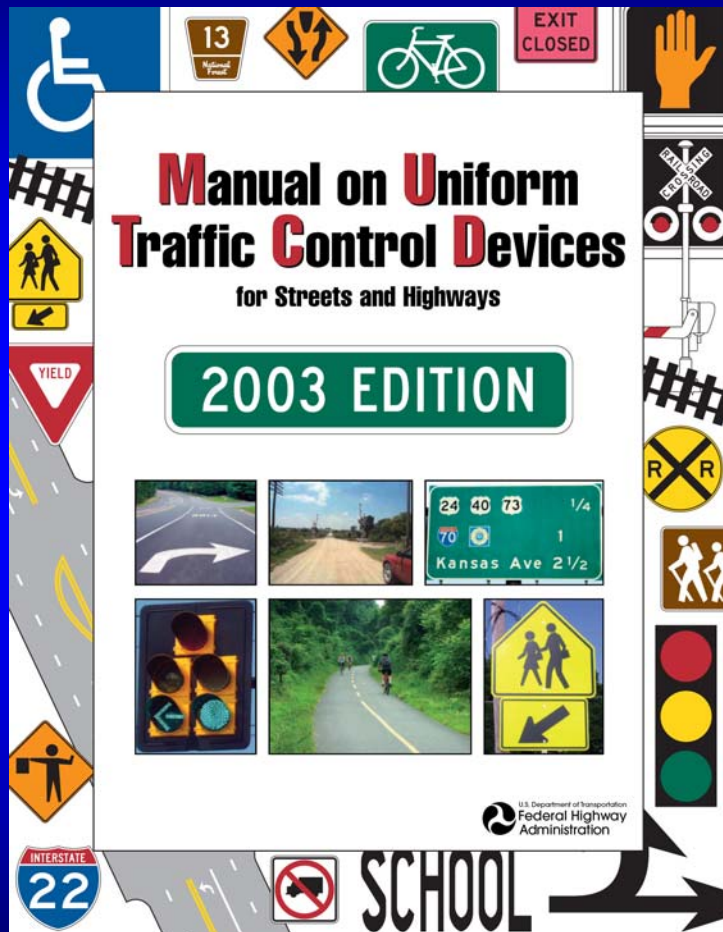


National TCD References

- MUTCD 2003 (Standard)
- Standard Highway Signs Book 2002
 - Standard Highway Alphabets 2000
- TCD Handbook (Not a Standard)



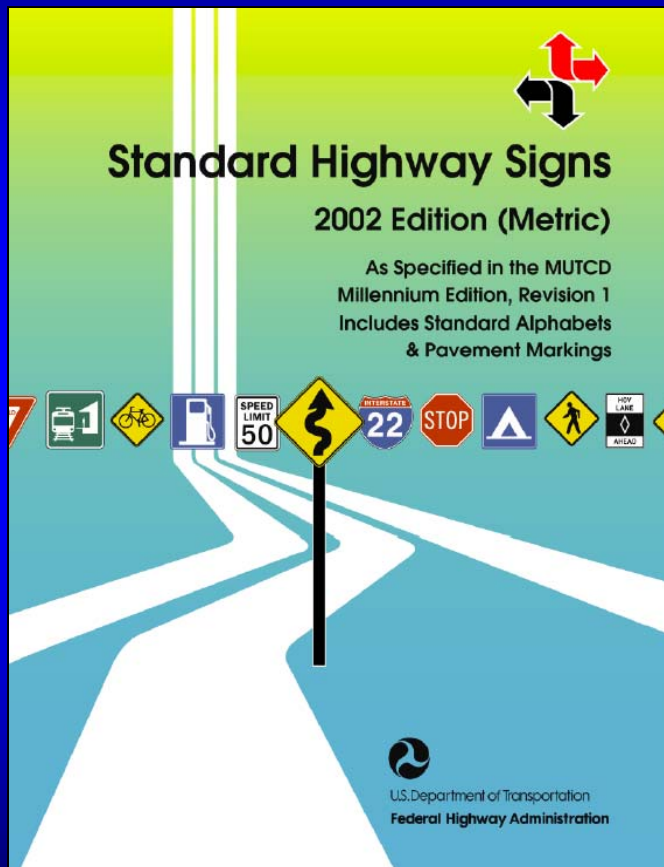
MUTCD 2003



- Available on the Internet at <http://mutcd.fhwa.dot.gov/>
- This electronic version is the official FHWA publication.
- The new format is as a living document.
- Hard copies and CD-ROMs are available from national organizations (ATSSA, ITE, AASHTO).



Standard Highway Signs Book 2002



- Details for symbols, shapes, colors, dimensions, legends
- Standard Alphabets 2000
- <http://mutcd.fhwa.dot.gov>
- Metric and English versions



1983 TCD Handbook



- FHWA Publication
- Supplemented the 1978 MUTCD
- A Guide, not a Standard
- Bridges gap between MUTCD provisions and field applications
- Replaced by ITE's 2001 TCD Handbook



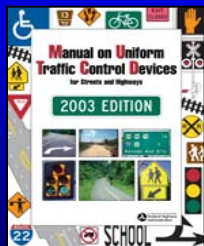
California's MUTCD Adoption Plans

Johnny Bhullar, P.E., T.E.

Caltrans, Division of Traffic Operations
Office of Signs, Markings & Permits

(916) 654-7312

johnny_bhullar@dot.ca.gov



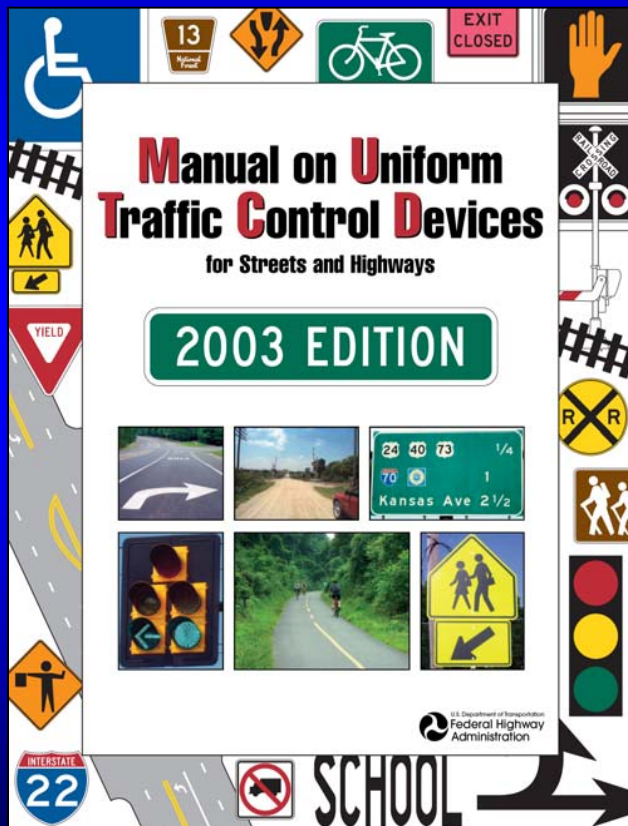
+



Caltrans Traffic Manual (Until May 2004)



Caltrans MUTCD Supplement (May 2004 and beyond....)



+



Supplement

Caltrans Traffic Manual



California
Department of
Transportation

traffic manual



- Current manual (Metric) was released December 1996.
- Ranges in revisions from Chapter 1 in 1978 to Chapter 5 in 2000.
- Chapter 12 (Bicycles) is not yet written.
- <http://www.dot.ca.gov/hq/traffops/signtech/signdel/trafficmanual.htm>



Why the Traffic Manual?

- Federal law (Highway Safety Act 1966, 23 U.S.C. 109(d) and 402(a)) - requires states to adopt a manual that is in substantial conformance with the MUTCD.
- Currently, CT - TM serves this purpose.
- CVC Section 21400 - requires the Department (Caltrans) to adopt rules and regulations prescribing uniform standards and specifications for all official TCDs.
- All TCDs on all streets and highways open to public travel in CA must conform to CT - TM subject to the provisions of CVC 21100 through 21117, 21374, 21400 and 21401.



Traffic Sign Specifications

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 MUTCD NUMBER **None** CODE **SW59**

Sign Size (Inches)	DIMENSIONS (Inches)							
	A	B	C	D	E	F	G	H
30 x 30	30	1/2	3/4	10	5	28	14	1-7/8
36 x 36	36	5/8	7/8	12	6	33-1/2	16-3/4	2-1/4
48 x 48	48	3/4	1-1/4	16	8	44-3/4	22-3/8	3

Sign Size (mm)	DIMENSIONS (Millimeters)							
	A	B	C	D	E	F	G	H
762 x 762	762	13	19	254	127	711	356	48
914 x 914	914	16	22	305	152	851	425	57
1219 x 1219	1219	19	32	406	203	1137	568	76

COLORS
 BORDER & SYMBOL - BLACK (NON-REFLECTIVE)
 BACKGROUND - YELLOW (REFLECTIVE)

- THE POLICY FOR INTENDED USAGE OF THIS SIGN IS SHOWN ON REVERSE SIDE -

Gary Klein 8/5/03
 CHIEF, OFFICE OF SIGN AND INFORMATION DATE REVISION REVISION

POLICY: SW59

The Migrating Bears Symbol sign (SW59) may be used in advance of an area known to be inhabited by bear and there have been reported instances where bears are crossing the roadway.

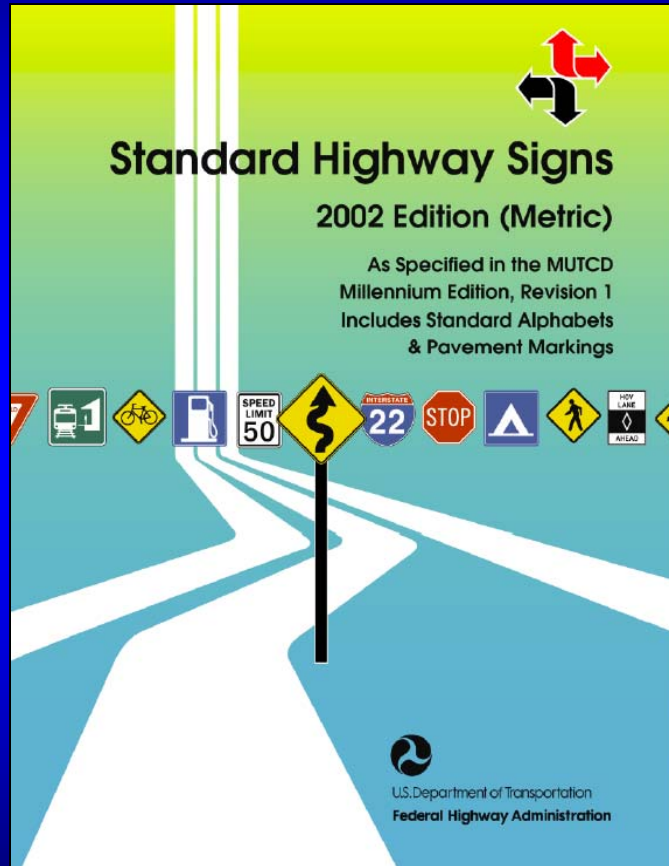
The NEXT ____ MILES supplemental plate (W71) may be used below the SW59 sign on roadways where there have been random occurrences over a substantial distance. Placement should be, at approximately 8 km (5 mile) intervals, or when intersecting major traffic generators.

Specification

Policy



Standard Highway Signs Book 2002



- <http://mutcd.fhwa.dot.gov/>
- Metric and English versions
- Companion to Caltrans Traffic Sign Specifications
- Includes Standard Alphabets
- Supplement will include California and MUTCD numeral designations for signs



TOPD's & Memos

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
POLICY DIRECTIVE
 TR-0011 (REV 7/1/2003)

TRAFFIC OPERATIONS POLICY DIRECTIVE	NUMBER 03-02	Page 1 of 3
KARLA SUTLIFE, DIVISION CHIEF (Signature)	DATE ISSUED December 15, 2003	EFFECTIVE DATE December 26, 2003
SUBJECT IN-ROADWAY WARNING LIGHTS AT CROSSWALKS	DISTRIBUTION	
	<input type="checkbox"/> All District Directors <input checked="" type="checkbox"/> All Deputy District Directors - Traffic Operations <input checked="" type="checkbox"/> All Deputy District Directors - Maintenance <input checked="" type="checkbox"/> All Deputy District Directors - Construction <input checked="" type="checkbox"/> All Deputy District Directors - Project Development <input checked="" type="checkbox"/> Chief Counsel, Legal Division <input checked="" type="checkbox"/> Engineering Service Center Director <input checked="" type="checkbox"/> Headquarters Division Chiefs for Design, Construction and Local Assistance <input type="checkbox"/> Publications (For distribution to all holders of Traffic Manual)	
DOES THIS DIRECTIVE AFFECT OR SUPERSEDE ANOTHER DOCUMENT? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IF YES, DESCRIBE NOT APPLICABLE	
WILL THIS DIRECTIVE BE INCORPORATED IN THE TRAFFIC MANUAL? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	IF YES, DESCRIBE Sections 9.05.18 In-Roadway Warning Lights at Crosswalks and 9.05.19 Financing and Maintenance- State Highways	

DIRECTIVE

As follows, Sections 9.05.18 In-Roadway Warning Lights at Crosswalks and 9.05.19 Financing and Maintenance- State Highways are added to the California Department of Transportation Traffic Manual.

TOPD

State of California
Memorandum
 Business, Transportation and Housing Agency

To: All District Division Chiefs for Traffic Operations Program
 Date: November 30, 1998

From: DEPARTMENT OF TRANSPORTATION
 Traffic Operations
 Mail Station 36
 File No:

Subject: Safety Corridors

In the past year (or so) there has been considerable interest in developing "Safety Corridors" to focus efforts on accident reduction on some conventional state highways. The California Highway Patrol generally takes the lead in these.

Because of the interest in Safety Corridors and because the participants in these usually request highway signs, we have developed guidelines for the signs and their installation. These are:

- 1) Signs will be installed on conventional state highways (non-freeways) at the written request of an official Corridor Safety Task Force.
- 2) One sign will be posted at each end of the corridor.
- 3) General sign specifications should be:
 - No larger than eight feet wide and four feet high
 - White background with black lettering having a primary safety message
 - A logo and any secondary message (along with colors) must be agreed upon by the Task Force. The logo and secondary message shall not cover more than 25 percent of the sign's surface area
- 4) Caltrans will purchase and install the signs.
- 5) The task Force is to advise Caltrans, in writing, as to how long the signs are to remain on the highway. This time period should not exceed three years.

Attached is a specification for a safety corridor sign. You will note that the logo graphics may cause some complications in the sign specifications. Therefore, I suggest that your staff contact Mr. Gerry Kundert at Calnet 464-5251 before agreeing to have the sign fabricated.

Regarding any policy questions, please call me at Calnet 464-4551 or Mr. Greg Edwards at Calnet 464-3507.

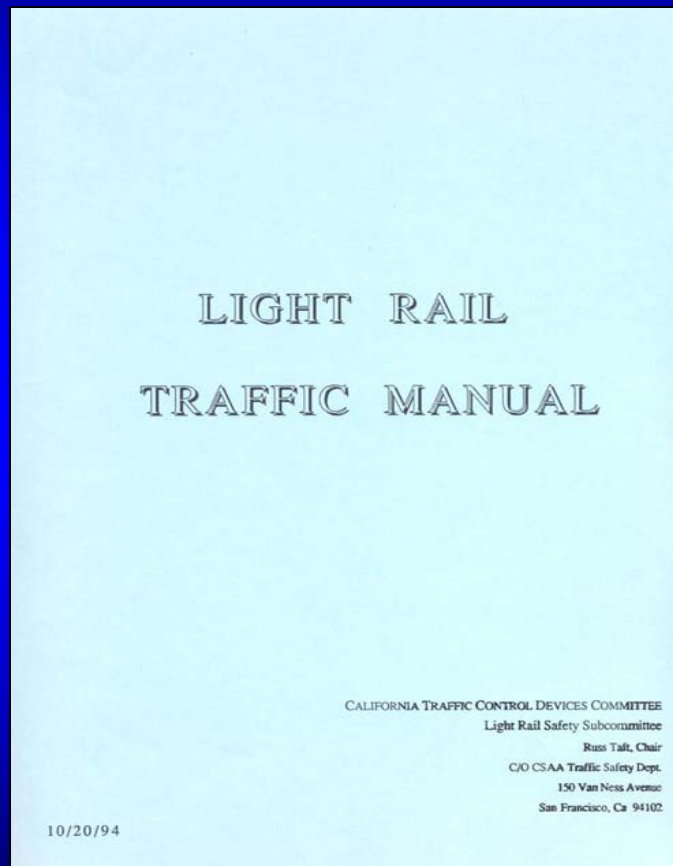
ORIGINAL SIGNED BY
 GERRY MEIS, Chief
 Office of Signs, Delineation

Attachment

Memo



Light Rail Traffic Manual



- Released in 1994
- Light Rail Safety Subcommittee of CTCDC



California Adoption Plan

- February 2004** • Solicit comments on MUTCD 2000/2003 changes.
- March 2004** • Prepare and discuss draft 2003 Supplement text in a 2-day CTCDC Workshop.
- April 2004** • Finalize draft text, post on Supplement web site making it open for public comment.
- May 2004** • Adopt MUTCD 2003 and Supplement as standard for TCDs in California.



TOC Comparison

MUTCD

- 1 General Provisions
- 2 Signs
- 3 Markings
- 4 Highway Traffic Signals
- 5 Traffic Control Devices for Low Volume Roads (*New - '88*)
- 6 Temporary Traffic Control
- 7 Traffic Controls for School Areas
- 8 Traffic Control for Highway-Rail Grade Crossings
- 9 Traffic Controls for Bicycle Facilities
- 10 Traffic Controls for Highway-LRT Grade Crossings (*New - '88*)

Traffic Manual

- 1 General Information
- 2 Traffic Volume Systems
- 3 Accident and Roadway Records
- 4 Signs
- 5 Traffic Controls for Construction and Maintenance Work Zones
- 6 Markings
- 7 Traffic Safety Systems
- 8 Regulations
- 9 Traffic Signals **and Lighting**
- 10 School Area Pedestrian Safety
- 11 Rules and Regulations
- **12 Bikeway Signs and Markings**



TM/MUTCD Layout

Traffic Manual		SIGNS		4-0.1
1-1996				
CHAPTER 4 TABLE OF CONTENTS				
<i>Index No.</i>		<i>Page No.</i>	<i>Date</i>	
4-01	INTRODUCTION AND GENERAL STANDARDS.....	4-1	January, 1996	
4-01.1	Functions of Signs.....	4-1	January, 1996	
4-01.2	Scope of Sign Standards.....	4-1	November, 1982	
4-01.3	Legal Authority.....	4-1	January, 1996	
4-01.4	Standardization of Application.....	4-1	November, 1982	
4-01.5	Variable Sign Messages.....	4-2	November, 1982	
4-01.6	Excessive Use of Signs.....	4-2	November, 1982	
4-01.7	Classification of Signs.....	4-2	January, 1996	
4-01.8	Standardization of Signs.....	4-2	November, 1982	
4-01.9	Design.....	4-3	November, 1982	
4-01.10	Shapes.....	4-3	January, 1996	

- Traffic Manual:
Chapters, Sections and Subsections.

For Example:

4-01.3 -->Chapter 4

Section 01

Subsection 3

- MUTCD:
Parts, Chapters and Sections.

For Example:

2A.06 --> Part 2

Chapter A

Section 06

December 2000		Page TC2-1
PART 2. SIGNS TABLE OF CONTENTS		
		<u>Page</u>
CHAPTER 2A.	GENERAL	Dec. 2000
Section 2A.01	Function and Purpose of Signs	2A-1
Section 2A.02	Definitions	2A-1
Section 2A.03	Standardization of Application.....	2A-2
Section 2A.04	Excessive Use of Signs	2A-2
Section 2A.05	Classification of Signs.....	2A-3
Section 2A.06	Design of Signs	2A-3
Section 2A.07	Changeable Message Signs	2A-4
Section 2A.08	Retroreflectivity and Illumination.....	2A-5
Section 2A.09	Minimum Retroreflectivity Levels.....	2A-5
Section 2A.10	Shapes.....	2A-5
Section 2A.11	Sign Colors	2A-8

MUTCD Format

Section 2C.11 Truck Rollover Warning Sign (W1-13)

Option:

A Truck Rollover Warning (W1-13) sign (see Figure 2C-1) may be used to warn drivers of vehicles with a high center of gravity, such as trucks, tankers, and recreational vehicles, of a curve or turn having geometric conditions that are prone to cause such vehicles to lose control and overturn.

Standard:

When the Truck Rollover Warning (W1-13) sign is used, it shall be accompanied by an Advisory Speed (W13-1) plaque indicating the recommended speed for vehicles with a higher center of gravity.

Option:

The Truck Rollover Warning sign may be displayed either as a static sign, a static sign supplemented by a flashing warning beacon, or as a changeable message sign activated by the detection of an approaching vehicle with a high center of gravity that is traveling in excess of the recommended speed for the condition.

Support:

The curved arrow on the Truck Rollover Warning sign shows the direction of roadway curvature. The truck tips in the opposite direction.

Section 2C.12 Hill Signs (W7-1, W7-1a, W7-1b)

Guidance:

The Hill (W7-1) sign (see Figure 2C-2) should be used in advance of a downgrade where the length, percent of grade, horizontal curvature, and/or other physical features require special precautions on the part of road users.

The Hill sign and supplemental grade (W7-3) plaque (see Section 2C.48) used in combination, or the W7-1b sign used alone, should be installed in advance of downgrades for the following conditions:

- A. 5% grade that is more than 900 m (3,000 ft) in length;
- B. 6% grade that is more than 600 m (2,000 ft) in length;
- C. 7% grade that is more than 300 m (1,000 ft) in length;
- D. 8% grade that is more than 230 m (750 ft) in length; or
- E. 9% grade that is more than 150 m (500 ft) in length.

These signs should also be installed for steeper grades or where crash experience and field observations indicate a need.

MUTCD Supplement Web Site

MUTCD Supplement Homepage - Microsoft Internet Explorer provided by California Department of Transport

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Print Copy Paste

Address <http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp/> Go Links

California Home Monday, January 26, 2004

Welcome to *California*

MUTCD Supplement Homepage
[Frequently Asked Questions](#)
[Contact Us](#)

Related Links
[FHWA's MUTCD](#)
[Caltrans Traffic Manual](#)
[CTCDC](#)
[CVC](#)

PDF files will require Adobe Acrobat Reader. Available as a free download from [Adobe's web site](#) (one-time setup).

 [Get Acrobat Reader](#)
[More ...](#)



TRAFFIC OPERATIONS
Office of Signs, Markings & Permits
M.U.T.C.D. SUPPLEMENT BRANCH

search

 My CA This Site

California Supplement to the MUTCD
[Caltrans](#) > [Traffic Operations](#) > [Signs, Markings & Permits](#) > [MUTCD Supplement](#)

California Supplement to the MUTCD

Caltrans is developing a California Supplement, which will replace the Caltrans Traffic Manual and adopt the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD).

California MUTCD Adoption Postponed

The adoption of the MUTCD for California has been postponed to April 2004. Although the California Supplement draft for MUTCD 2000 was completed in 2003, Caltrans has decided to adopt the MUTCD 2003 Edition (which was recently released by FHWA) rather than the 2000 Edition. Comments submitted during the public comment period through December 31, 2003 will be addressed in the California Supplement to the MUTCD 2003 Edition.

Caltrans and the CTCDC are reviewing the MUTCD 2003 changes. The updated California Supplement will be discussed in a CTCDC workshop in March 2004. The draft text will then be made available to the public for comment. The actual MUTCD adoption will occur after CTCDC's final recommendation to Caltrans.

Current Standards

The 1996 Caltrans Traffic Manual (with updates as shown on the web site) is the current California standard for traffic

Office
Microsoft

Start | Internet | John... | Micro... | MUT... | Adob... | Traff... | Sign... | Supp... | Micro... | Filed | TM R... | 2:06 PM

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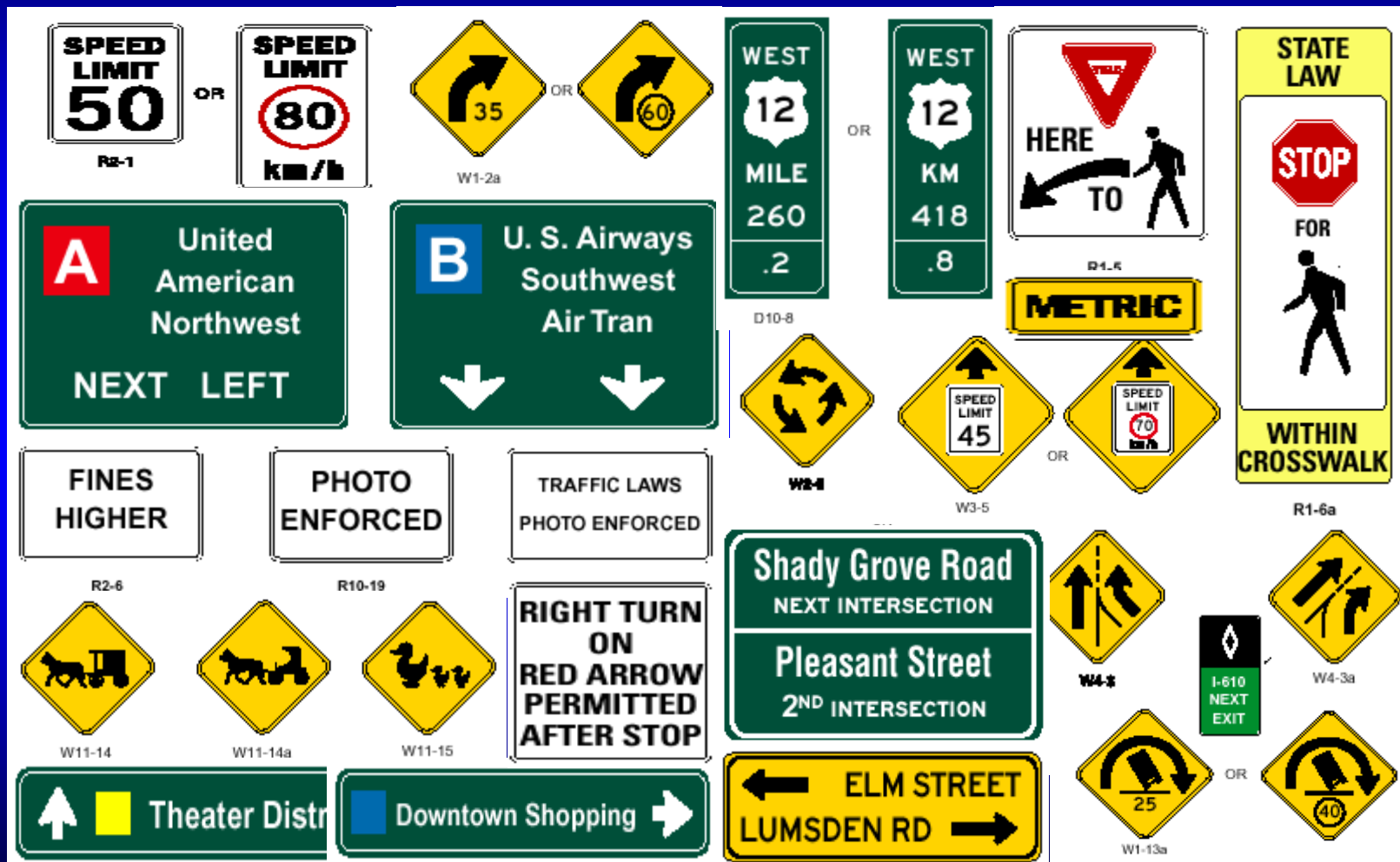
Questions

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New Signs in MUTCD 2003



Cross-Reference Sign Table

LIST OF WARNING SIGNS (Continued)

CA TM Code	MUTCD Code	Title	Supplement Section	MUTCD Section
W30A	W7-4b	RUNAWAY TRUCK RAMP Arrow	2C.12	2C.12
W30B	None	DEEP GRAVEL	2C.12	None
W30C	None	RIGHT(LEFT) EXIT	2C.12	None
W31	None	END	2C.19	None
W31A	None	ROAD ENDS ___ FT	2C.19	None
W32	W8-2	DIP	None	2C.21
W33	W8-8	ROUGH ROAD	C2C.03	None
W34	W12-2	Low Clearance	2C.20	2C.20
W34A	None	(X MILES) AHEAD Plaque	2C.41	None
W34B	W12-2P	___ FT ___ IN Plaque	2C.20	2C.20
W34C	None	CAUTION VERTICAL CLEARANCE Arrow	2C.20	None
W36	W5-3	ONE LANE BRIDGE	2C.15	2C.15
W37	W8-1	BUMP	None	2C.21
W38	None	SLIDE AREA	C2C.06	None
W41	W3-3	Signal Ahead	2C.26	2C.26
W41A	W3-3a	SIGNAL AHEAD	2C.26	2C.26
W42	W8-5	Slippery When Wet	None	2C.25
W43	None	ICY	C2C.04	None

California Only Sign Sketches

Figure 2C-101. California Warning Signs (Sheet 4 of 5)

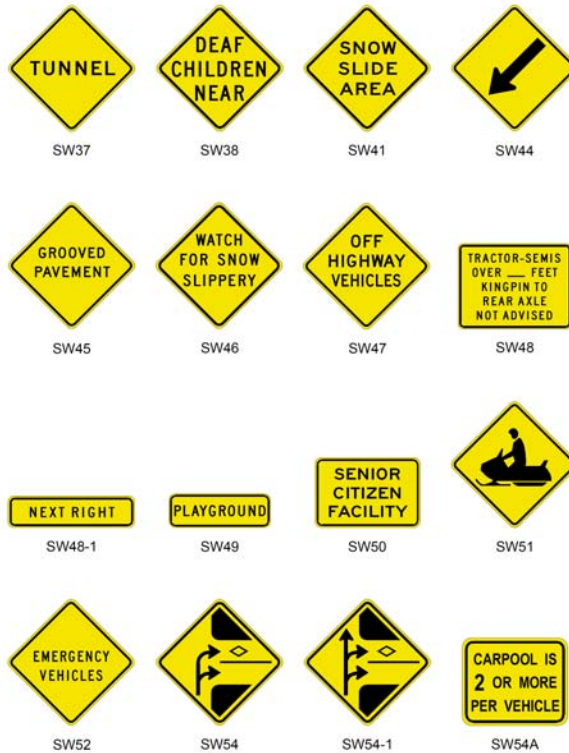


Figure 2D-101. California Guide Signs (Sheet 14 of 15)

