

**OMUTCD 2003 Edition vs. OMUTCD 1972 Edition, Revision 21  
MAJOR CHANGES  
November 17, 2003**

<b><u>OMUTCD 2003 Edition</u></b>  Part, Section or Figure No.	<b><u>OMUTCD 1972 Edition</u></b>  Part, Section or Figure No.	<b><u>Title / Subject</u></b>	<b><u>Comparison of Related Material in the Two Manuals Regarding Major Changes that Have Been Noted</u></b>  (References to the TEM mean the ODOT Traffic Engineering Manual, references to SCDs mean the ODOT Traffic Standard Construction Drawings and references to the MUTCD mean the national Manual on Uniform Traffic Control Devices published by FHWA.)	
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-----	<b>Addendum</b>	<b>Addendum</b>	The Manual still had Addendum items for Parts 2, Guide Signs and Part 7, Work Zones.	Any of this information that remains is incorporated into the text.
-----	<b>Publication Record</b>	<b>Publication Record</b>	Provided a listing of previous editions and revisions.	This information in a Table in the Introduction.
<b>Preface</b>	<b>Preface</b>	<b>Preface/Background</b>	Background information in the form of a letter.	Background information is presented in a format similar to that in the MUTCD. A listing of contact information for various organizations is included.
<b>Revision Record</b>	<b>Record of Revisions</b>	<b>Record of Revisions</b>	Provided details by section and figure number for each revision of the 1972 edition.	This is intended to supplement the list provided in the Introduction, with details about Sections, Tables and Figures revised in each revision of the 2003 Edition of the OMUTCD.
<b>Table of Contents</b>	<b>Table of Contents</b>	<b>General Table of Contents</b>	Provided an overall table of contents for the manual.	Provides an overall table of contents.
<b>Introduction</b>	-----	<b>Introduction</b>	-----	New feature. Used MUTCD text, revised to make specific to Ohio and the OMUTCD.

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<b>Part 1</b>	<b>Part 1</b>	<b>General Provisions</b>	Text had been updated to coincide almost exactly to MUTCD in an earlier Revision.	Updated as needed and revised to incorporate the new MUTCD 2000 format. Definitions are now in Part 1, and a couple other Parts, instead of Appendix A.
1A.10	1F	<b>Interpretations, Experimentations &amp; Changes</b>	Except for requests for new symbols, all requests for interpretations, experimentations & changes were directed to the ODOT Office of Traffic Engineering (OTE).	Includes new Standards and Guidance information. Requests for interpretations or changes should be submitted to the ODOT OTE; however, requests for experiments should be submitted to FHWA (with a copy to ODOT). Additional detail is provided as to the type of information to be included in such requests.
1A.11	1G	<b>Relation to Other Documents</b>	Various related documents were listed.	The list has been updated.
1A.12	1H	<b>Color Code</b>	Indicated that the central values and tolerance limits for each color were available from the ODOT Office of Traffic Engineering.	The reader is directed to FHWA for this information.
1A.13	Appendix A	<b>Definitions</b>	For the most part, all definitions had been consolidated in Appendix A. When the definition of a term had been established in the Ohio Revised Code (ORC), the definition was shown in italics.	Definitions have been identified as Standards. Definitions that were in Appendix A of the 1972 Edition have been moved to Section 1A.13. When a definition for the term has been established in the ORC, it is shown in italics, even if different than the national manual definition. About 60 definitions have been added to the manual.

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1A.14, Table 1A-1	2U-12	<b>Acceptable Abbreviations</b>	Indicated that abbreviations should be kept to a minimum; however, a table was provided showing accepted abbreviations for highway signs.	Establishes new Standard (shall) and Guidance (should) for abbreviations. Some of the abbreviations have changed; some new abbreviations have been added; and some terms in the previous table are no longer shown.
Table 1A-2	-----	<b>Abbreviations that are acceptable only with a prompt word</b>	-----	New Guidance (should).
Table 1A-3	-----	<b>Unacceptable Abbreviations</b>	-----	New Standard (shall).
<b>Part 2</b>	<b>Part 2</b>	<b>Signs</b>	The Standards, Regulatory and Warning chapters were updated in Revision 20 to coincide almost with the MUTCD.	Updated as needed and revised to incorporate the new MUTCD 2000 format.
			Each sign had a unique Ohio sign code.	Adopted the federal sign codes number format, even for Ohio only signs. Ohio only signs will be identified by the use of an "H" after the hyphen.
			The terms "Standard" and "Major Standard" were used in categorizing signs.	These categories have been replaced by the new category of "conventional highways."
			Sign cuts for each sign discussed were shown with the text discussion, and sign size tables were typically shown with each sign.	Sign cuts are grouped and some are not shown. Also, a single overall sign size table is typically provided at the beginning of each signing chapter. Some sign sizes are changed. Minimum sign sizes are shown for some signs.

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-----	Fig. S-3	<b>Height &amp; Lateral Clearance of Signs on Expressways &amp; Fwys.</b>	Showed sign heights and lateral offsets.	Not included. The information will be incorporated into the TEM. No change in the information, just the location.
-----	Fig. S-4	<b>Height &amp; Lateral Position of Overhead Signs</b>	Showed sign heights and lateral offsets.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
2B.04	2H-1	<b>STOP Sign</b>	Included a recommendation that the higher classification street at an intersection be used to determine STOP sign size. Also, required use of 48" stop sign on freeway ramps.	This recommendation and requirement are not included. Information will be incorporated into the TEM. Both will be shown as "should" conditions.
2B.23	-----	<b>Reversible Lane Control Signs</b>	Not addressed.	New Standard (shall), Guidance (should) and Option (may) information. [Not aware of any existing ODOT applications.]
2B.29	2J-37	<b>DO NOT ENTER Sign</b>	Required use of larger STOP sign when mounted back-to-back with DO NOT ENTER sign.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
2B.48 - 2B.50	2J-27	<b>HOV Lanes</b>	Addressed HOV lanes in a limited, general way.	Two new sections on this subject have been added. The sections include various Standard, Guidance and Option information.
-----	Fig. WS-2	<b>Clearance Signs on Low Structures</b>	Illustrated low clearance signs.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
-----	Fig. WS-3	<b>Example of Transition Signing</b>	Illustrated signing at a lane reduction transition.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.

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-----	Fig. WS-4	<b>Example of Freeway Transition Signing</b>	Illustrated signing at freeway lane reduction transition	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
-----	Fig. WS-5	<b>Max. Safe Speed for Intersection Approach</b>	Illustrated a method to determine advisory speed for intersection.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
2C.37	2N-40.1	<b>Crossing Signs</b>	An Advance Crossing sign was recommended in certain circumstances. Crossing signs included crosswalk lines in the symbol. Pedestrian, Bicycle and Handicap Crossing signs were illustrated.	Use of Crossings signs is an Option. The crosswalk lines have been eliminated from the sign designs. A new Standard has been introduced requiring the use of a diagonal downward pointing arrow plaque when the crossing is not delineated by crosswalk pavement markings.
-----	Figs. GS-8A & GS-8B	<b>Typical Route Marking Municipal Street System</b>	Illustrated typical route marking.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
-----	Figs. GS-10 & GS-19	<b>Guide signing – at-grade intersections</b>	Examples of guide signing at at-grade intersections were provided.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
2E.13	2U-11	<b>Size and Style of Letters and Signs</b>	The standard in Ohio has been to use a system involving levels 1, 2, 3 and 4 in laying out “designable” guide signs. The levels were described in this section.	Introduces new Standards, Guidance and Option information. Information about the “levels” system has been moved to the Sign Design Manual (SDM), and this has been allowed as an alternative method for laying out “designable” guide signs. The TEM (which includes the SDM) will provide additional information.

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2E.13	2U-11	<b>Size and Style of Letters and Signs</b>	Element sizes for levels 1, 2, 3 and 4 were provided.	For levels 1, 2, 3 and 4, the element sizes, to be shown in the SDM, have been revised to be in greater conformance to federal sizes. Also, a larger level 0 has been added to be used for ground-mounted freeway to freeway interchange signing. The TEM will address this further for ODOT.
2E.13	2U-11	<b>Size and Style of Letters and Signs</b>	Element sizes were generally larger for signs located on the freeway mainline as compared to the expressway mainline.	Element sizes are the same for mainline freeway and expressway signs. The TEM will address this further for ODOT.
2E.13	2U-11	<b>Size and Style of Letters and Signs</b>	Type A and B arrow sizes were shown.	Type A and B arrows sizes have been revised to use the FHWA "Up" arrow.
2E.18	2V-5	<b>Arrows for Interchange Guide Signs</b>	Arrows on ground-mounted exit direction signs were placed at the bottom of the signs.	Arrows on ground-mounted exit direction signs are placed on the side of the signs, the same as for the overhead sign.
2E.28	-----	<b>Interchange Exit Numbering</b>	ODOT practice has been to provide interchange numbering only on Interstate interchanges.	Introduces new requirement for interchange numbering on all freeway interchanges. The TEM will indicate that for interchange numbering purposes, ODOT's position is that this provision applies only to a route that is a freeway over its entire length, not isolated interchanges or short sections.
-----	Figs. GS-20 - GS-23	<b>Entrance ramp approach signing</b>	Figures showed examples of entrance ramp approach signing.	Not included. Information will be incorporated into the TEM. No change in the information, just the location.
-----	Figs. GS-29 - GS-32	<b>Optional lane signing</b>	Figures showed examples of optional lane signing treatments	Not included. Information will be incorporated into the TEM. No change in the information, just the location.

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2F	-----	<b>Specific Service Signs</b>	Had not yet been included in the OMUTCD. However, information on the Ohio Specific Service Program has been in the ODOT TEM.	A new chapter on this subject has been included. It contains various Standard, Guidance and Option information. The reader is also directed to the ODOT TEM for further information.
2G	2S-6	<b>Tourist-Oriented Directional Signs</b>	A section on this subject was added to the OMUTCD in Revision 19.	Information has been updated and expanded into a chapter, including various Standards, Guidance and Option information. However, the reader is also directed to the ODOT TEM for information on the State policy for this signing.
2H	2S-7 & 2X-7	<b>Recreational and Cultural Interest Area Signs</b>	Minimal information was provided, including a reference to the National Park Service symbol signs.	Information has been expanded into a chapter, including various Standard, Guidance and Option information. Sign cuts and a listing of the related symbols signs have been incorporated.
<b>Part 3</b>	<b>Part 3</b>	<b>Markings</b>	Part 3 had been updated in Revision 19 to coincide almost exactly to MUTCD Part 3.	Updated as needed and revised to incorporate the new MUTCD format.
Fig. 3B-7	Fig. M-5	<b>Typical spacing between 2-way left-turn arrows</b>	Was not addressed in the OMUTCD. However, the TEM had established 16 ft. as the ODOT guideline.	Typical spacing is 8' - 16' between arrows. The ODOT TEM has been revised to allow 8 to 16 ft.
3B.05, Fig. 3B-10	3B-11	<b>Lane drop markings at off-ramps</b>	A typical marking for lane drops consisted of 3 ft. white stripes separated by 12 ft. gaps.	Indicates that markings may consist of 3 ft. white stripes and 9 ft. gaps.
3B.11	3A-10	<b>Blue RPMs to mark position of fire hydrants</b>	Had not been addressed in the OMUTCD. However, the TEM provided information on the subject.	Blue raised pavement markers may be used to mark the position of fire hydrants. Also addressed in the ODOT TEM.

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3B.13	3B-15	<b>RPMs supplementing other markings</b>	Indicated that broken lines should be supplemented at a spacing no greater than 2N except..... (where N is the length of one line segment and one gap). Also, for edge line extensions through freeway interchanges, a typical spacing of N/2 was allowed.	The dimensions have been revised, 2N becomes 3N and N/2 becomes N.
3B.14	3B-16	<b>RPMs substituting for pavement markings</b>	Allowed dashed line segments to be substituted for by a group of 4 or 5 markers equally spaced at approx. N/12 feet..... Required that dotted lines be substituted for at a spacing of approx. N/8 feet.....	New standard indicates that: a) if rpm's are used to substitute for broken line markings, a group of 3 to 5 markers equally spaced at N/8.....; and b) when rpm's substitute for dotted lines, they shall be spaced at N/4.....
3B.16, Fig. 3B-14	-----	<b>Yield lines</b>	Had not been addressed in the OMUTCD. However, information had been included in the TEM.	Standard, Guidance and Option information provided. Related TEM information was removed since it did not modify, or add to, the OMUTCD text.
3B.17, Fig. 3B-15	3B-18	<b>Spacing of lines marking a crosswalk</b>	-----	Provides additional Guidance about designing crosswalk markings to avoid the wheel paths.
3B.19	3B-20	<b>Letter and Numeral Height</b>	Indicated that large letters & numerals, 8 ft. or more in height should be used & that where speeds were low, the sizes could be reduced by approximately 1/3.	Indicates that letters & numerals should be 6 ft. in height. (Also shows the word "ONLY" as 8 ft in height.) The TEM includes additional information regarding ODOT use.
3B.19	3B-20	<b>"ONLY" word symbol</b>	Required use of "ONLY" to accompany lane-use arrows used for mandatory movements.	Use of "ONLY" is optional for this situation. TEM includes additional information regarding ODOT use.



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Fig. 3B-16	Fig. M-17	<b>Crosswalk marking where diagonal crossing is permitted.</b>	Fig. M-17 didn't show optional inside markings.	Fig. 3B-16 shows an optional inside markings pattern.
-----	3B-35	<b>Paved Shoulder Markings</b>	Mentioned use of diagonal line markings to discourage shoulder misuse where operational problems exist.	Not addressed. Incorporated the information into the TEM. No change in the information, just the location.
3B.22	3B-22	<b>Preferential lane symbol for high-occupancy vehicle (HOV) lanes</b>	Required the elongated diamond symbol for all types of preferential lane uses (e.g., bicycles, buses, taxis).	Limits use of elongated diamond design to HOV lanes only. Specifies other markings for other preferential lane uses.
3B.24, Figs. 3B-26 & 3B-27	-----	<b>Markings for Roundabouts</b>	Had not yet been addressed in the OMUTCD. However, information had been included in the TEM.	New Guidance and Option information. The related information in the TEM was removed since it did not modify, or add to, the OMUTCD text.
3B.25	-----	<b>Markings for Other Circular Intersections</b>	Had not yet been addressed in the OMUTCD. However, information had been included in the TEM.	New Option information. Related TEM information was removed since it did not modify, or add to, the OMUTCD text.
3B.26, Figs. 3B-28 & 3B-29	-----	<b>Speed Hump Markings</b>	Had not yet been addressed in the OMUTCD. However, information had been included in the TEM.	New Standard and Option information. Additional information is in the ODOT TEM.
3B.27, Fig. 3B-30	-----	<b>Advance Speed Hump Markings</b>	Had not yet been addressed in the OMUTCD. However, information had been included in the TEM.	New Standard, Guidance and Option information. Additional information is in the ODOT TEM.
3G	Part 4	<b>Islands</b>	This information was updated in OMUTCD Revision 19 to coincide almost exactly to the MUTCD.	Updated as needed; revised to incorporate the new MUTCD format; included in Part 3.

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Part 4, Highway Signals	Part 6	Signals and Illumination	Part 6 was updated in Revision 13 to coincide almost exactly to MUTCD Part 4.	Updated as needed and revised to incorporate the new MUTCD format. The Illumination information has been deleted. Highway Lighting is addressed in Part 11 of the TEM.
4B.02	6C-2.1	<b>Removal of Traffic Control Signals</b>	Basic information was provided, including a reference to the "User's Guide to Removal of Not Needed Traffic Signals." Additional information was provided in the TEM.	Guidance and Option information, expanding on existing information. Additional information is in the ODOT TEM.
4B.06	6A-4 & 6A-5	<b>Village Signal Permits</b>	Contained two sections with 4 permit forms.	Standards and Guidance information is condensed into one section and the forms are in the TEM.
4C.02 - 4C.09	6C-3 - 6C-10.3	<b>Signal Warrants</b>	Addressed 11 warrants.	Includes various Standard, Guidance and Option information about 8 warrants. Old warrants 1, 2 and 8 were combined into one warrant, and the peak hour delay and volume warrants (10 and 11) were combined.
4C.06	6C-6	<b>Warrant 5, School Crossing</b>	No minimum number of crossing students required.	A minimum number of 20 crossing students required.
4D.06	-----	<b>Protected / permissive Left Turns with a "Separate" Signal Face</b>	-----	Defines the requirements for protected/permissive left turns with a "separate" signal face. Added information to the TEM discouraging use of this arrangement pending changes coming in the national MUTCD.

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4D.13	6B-22	<b>Preemption and Priority Control</b>	Did not differentiate between preemption and priority control, and did not provide information for signal displays in transition periods.	Section has been expanded (Standard, Guidance and Option information) to give examples of preemption and priority control. Transition and control period requirements are provided.
4D.15	6B-8	<b>Twelve-inch Lens Size for Arrows</b>	Was a <u>"Should"</u> condition.	Now a <u>"Shall"</u> condition.
4D.15	6B-13	<b>Maximum mounting height of signal heads</b>	-----	Paragraph D.2 in the second Standard includes a maximum mounting height requirement to the top of the signal head for signal heads located between 40 ft. and 53 ft. from the stop line.
4D.15, Fig. 4D-2	6B-12(f), Fig. TS-6	<b>Cone of vision</b>	The cone of vision was developed from the stop line.	The cone of vision is developed from a point 10 ft. behind the stop line.
4D.17	6B-11	<b>Signal backplates</b>	Was addressed as <u>"may be desirable."</u>	Now addressed as <u>"should."</u>
4D.18	6B-10	<b>Auto. dimming</b>	Was addressed as <u>"may be desirable."</u>	Now addressed as <u>"should."</u>
4D.18	6B-24	<b>Signal head housing color</b>	Was addressed as <u>"may be desirable."</u> TEM required yellow for ODOT.	Now addressed as <u>"should."</u> TEM still requires yellow for ODOT.
4E.04	6D-1 & 6D-2	<b>Symbolic ped. signal indications</b>	Allowed use of words or symbols in pedestrian signals.	All new pedestrian signals shall use symbolized messages.
4E.04	6D-4	<b>Pedestrian symbol size</b>	9-inch symbols should be used for distances over 60 ft.	9-inch symbols should be used for distances over 100 ft.
4E.06	-----	<b>Accessible pedestrian signals</b>	Had not yet been addressed in the OMUTCD. However, information had been provided in the TEM.	New Standard, Guidance and Option information has been added. Additional information is in the TEM.

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4E.08	-----	<b>Accessible ped. signal detectors</b>	-----	New Standard, Guidance and Option information.
4E.09	6D-7	<b>Pedestrian clearance interval</b>	The use of the yellow and all-red intervals as part of the pedestrian clearance interval was not discussed.	Specifically discusses the use of the yellow and all-red intervals during the pedestrian clearance interval.
4E.09	6D-7	<b>Duration of WALK interval</b>	Was ... Should be at least 4 to 7 seconds.	Revised to... Should be at least 7 seconds, but may be as short as 4 seconds under certain conditions.
4F.02	6E-20	<b>Emergency vehicle traffic control signal sign</b>	Text indicated that a sign bearing either the legend FIRE SIGNAL or EMERGENCY SIGNAL should be visible from each approach.	Indicates that an EMERGENCY SIGNAL (R10-13) sign shall be mounted adjacent to the signal face on each major street approach. [The FIRE SIGNAL sign is not included.] ODOT will plan to address this change in the Systematic Sign Replacement Program.
4F.02	6E-20	<b>Emergency vehicle traffic control signal advance warning signs</b>	Text indicated that advance warning signs and beacons may be used.	Indicates that an EMERGENCY VEHICLE (W11-8) sign with an EMERGENCY SIGNAL AHEAD (W11-12P) supplemental plaque shall be used in advance of all emergency vehicle traffic control signals.
4J.02	6E-9	<b>Lane use control signal indication meanings</b>	Included a meaning for a flashing yellow "X" signal indication.	Not included, no longer used.
4J.02	6E-9	<b>Lane use control signal indication meanings</b>	-----	Contains the meanings for steady white TWO WAY LEFT TURN ARROW and steady white ONE WAY LEFT TURN ARROW signal indications.

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4J.03	6E-10	<b>Lane use control signal indication</b>	Shall be visible <u>for 1/4 mile.</u>	Shall be visible <u>for 2300 ft.</u>
4K.01	6E-5	<b>Dimming of flashing yellow beacons</b>	Automatic dimming <u>should</u> be used.	<u>May</u> be used.
4K.02	6E-3	<b>Stop signs at intersection control beacons</b>	<u>Should be</u> used with a flashing red intersection control beacon. [Had previously been shall.]	<u>Shall be</u> used with a flashing red intersection control beacon. [May be an implementation concern if any STOP signs were removed in the field after the change to "should" was made in Revision 20.]
4K.04	6E-2	<b>Speed limit sign beacons</b>	Diameter not less than <u>6 inches.</u>	Diameter not less than <u>8 inches.</u>
4L	-----	<b>In-roadway lights</b>	-----	A new chapter defining in-roadway lights as special types of highway traffic signals installed in the roadway surface to warn road users approaching a crosswalk. The TEM addresses this subject further, noting concern about use on high-speed roadways.
[Parts 7 and 2 primarily]	<b>Part 5</b>	<b>Zones</b>	<b>This chapter was used to consolidate zoning type information for use by locals.</b>	<b>Procedural information has been moved to the TEM, with cross-reference information provided in related OMUTCD chapters.</b>
2B.11 & 5B.03	5D-1 - 5D-10, Figs. Z-12 & Z-15	<b>Speed Zones</b>	Addressed information related to establishing and signing speed zones.	Includes references to the TEM for the procedural information has been added.
-----	5E-1 - 5E-21, Figs. Z-16 & Z-17	<b>Parking Zones</b>	Addressed information related to establishing and parking zones, and included sections about various parking signs.	The related signs are addressed in Part 2, and a reference has been added to the TEM for procedural information.

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-----	5F-1 - 5F-6, Fig. Z-18	<b>Pedestrian Safety Zones</b>	Established various standards and guidelines related to Pedestrian Safety Zones; included information on the SAFETY ZONE sign, crosswalks and pedestrian loading islands.	Not addressed specifically.
	5G-1 -5G-5, Fig. Z-19	<b>Curb Loading Zones</b>	Addressed standards and guidelines for bus stops, passenger loading zones, and commercial loading zones.	Bus stop signs are in Part 2.
<b>Part 5</b>	-----	<b>Traffic Control for Low-Volume Roads</b>	-----	<b>New chapter, based on the related chapter in the MUTCD. It includes a definition of “low-volume roads.”</b>
<b>Part 6</b>	<b>Part 7</b>	<b>Temporary Traffic Control</b>	<b>Almost all updates of this chapter since Revision 13 of the OMUTCD had been shown in the Addendum.</b>	<b>All information has been consolidated, updated, reformatted, and generally mirrors the MUTCD.</b>
6F.03	7B-5	<b>Sign Mounting Height</b>	The height of post-mounted signs <u>should be 5 ft.</u> in rural areas and 7 ft. in urbanized areas.	The height of post-mounted signs <u>shall be 5 ft.</u> in rural areas and 7 ft. in urbanized areas.
6F.08	7C-4	<b>ROAD CLOSED Sign</b>	<u>Shall be</u> used.	<u>Should be</u> used. May incorporate a requirement for this sign into the TEM.
6F.09	7C-5	<b>LOCAL TRAFFIC ONLY Sign</b>	<u>Shall be</u> used.	<u>Should be</u> used.
6F.10	7C-6	<b>Weight Restrictions</b>	“A detour <u>should be</u> provided...”	“A detour <u>shall be</u> provided”
6F.11	-----	<b>STAY IN LANE Sign</b>	Wasn't in the OMUTCD. ODOT had established a MAINTAIN PRESENT LANE sign in its TEM and SCDs.	New STAY IN LANE sign established which supersedes the MAINTAIN PRESENT LANE sign.

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6F.15	-----	<b>48" Signs</b>	Noted for certain types of highways. TEM specified 48 " signs for ODOT.	Required for certain types of activities. TEM specifies signs for ODOT.
6F.17	7D-8 & 7D-17	<b>ROAD WORK</b>	Included both ROAD CONSTRUCTION AHEAD and ROAD WORK AHEAD Signs	ROAD WORK AHEAD only, ROAD CONSTRUCTION AHEAD no longer used.
6F.21	7D-6	<b>TWO LANES CLOSED AHEAD</b>	Not addressed specifically. TEM showed sign.	RIGHT 2 LANES CLOSED AHEAD is shown. Design different; TEM will need to address.
6F.22	7D-6	<b>CENTER LANE(s) CLOSED AHEAD</b>	Wasn't in the OMUTCD. Per TEM, ODOT was not using center lane closings.	CENTER LANE CLOSED AHEAD sign established discussed. TEM will address ODOT application.
6F.28	-----	<b>EXIT OPEN/CLOSED</b>	These signs weren't in the OMUTCD. However, related signs (EXIT RAMP OPEN, EXIT RAMP OPEN AHEAD, etc.) have been in the SDM.	EXIT OPEN, EXIT OPEN AHEAD, EXIT CLOSED, and EXIT CLOSED AHEAD signs have been added. Sign design has changed (eliminating "RAMP") from what we've been using in TEM/SDM.
6F.32	7D-23	<b>FRESH TAR/OIL</b>	Was <u>required.</u>	Now addressed a " <u>should.</u> "
6F.35	7D-20	<b>SURVEY CREW Sign</b>	Was addressed as " <u>is intended for use.</u> "	Now addressed as a " <u>should.</u> "
6F.41	-----	<b>SHOULDER DROP OFF Sign</b>	-----	Sign required when an unprotected shoulder drop-off exceeds 3".
6F.42	-----	<b>UNEVEN LANES Sign</b>	Wasn't in the OMUTCD. This sign has been in the TEM/SDM.	Establishes Guidance for use of the sign.
6F.49	7E-11	<b>END CONSTRUCTION / ROAD WORK Signs</b>	Either sign was allowed.	The END CONSTRUCTION sign has been eliminated.

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6F.52	7G-8.1	<b>Portable Changeable Message Signs (PCMSs)</b>	Addressed in very general terms.	Added requirement that "...shall not scroll or travel horizontally or vertically..." Also, when a message is longer than two phases, additional PCMS should be used. No change for ODOT; this has been in the TEM.
6F.53	7G	<b>Arrow Panels</b>	Indicated that chevron or sequential flashing arrows should not be used.	Chevrons and sequential arrows are permitted.
6F.56	7F-5	<b>Cones</b>	Specified retroreflectivity for cones < 28" and cones 28" or greater.	Specifies retroreflectivity for cones < 28", cones 28"-36" and > 36".
6F.59	7F-7	<b>Drums</b>	Max. non-reflective spacing between orange and white stripes was 2 in.	Max. non-reflective spacing between orange and white stripes is 3 in.
6F.61	-----	<b>Direction Indicator Barricade</b>	Wasn't in the OMUTCD. Has been addressed in the ODOT TEM.	Added Standard and Guidance information on this device.
6F.66	7F-12	<b>Temporary Pavement Markings</b>	Addressed in general terms. ODOT had more specific information in the TEM and Spec. book.	Temporary pavement markings should not be in place for more than 2 weeks unless justified by an engineering study. Reviewing change to TEM and Spec. book.
6F.70	7G-2	<b>Flood Lighting (glare)</b>	"...SHOULD be positioned so that they do not cause glare..." The ODOT TEM used shall not.	"...SHALL NOT produce disabling glare..." Already addressed in the ODOT TEM.
6F.76	-----	<b>Crash Cushions</b>	Wasn't in the OMUTCD. This has been in the ODOT TEM.	Adds new Standard and Guidance information. No change for ODOT.
6F.77	-----	<b>Vehicle-Arresting System</b>	Wasn't in the OMUTCD. This has been in the ODOT TEM.	Adds new Guidance information. No change for ODOT.



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6F.78	-----	<b>Rumble Strips</b>	Wasn't in the OMUTCD. This has been in the ODOT TEM.	Adds new Guidance information. No change for ODOT.
6F.79	-----	<b>Screens</b>	Wasn't in the OMUTCD. This has been in the ODOT TEM.	Adds new Guidance information. No change for ODOT.
6G.02		<b>Work Duration</b>	Not addressed specifically. Has been more fully addressed in the TEM.	Adds new Standard, Guidance and Option information. No change for ODOT.
6G.03		<b>Location of Work</b>	Addressed only in general. Has been more fully addressed in the TEM.	Adds new Standard information. No change for ODOT.
6G.08	-----	<b>Work Within Median</b>	-----	New Guidance information.
6G.15	-----	<b>Crossovers</b>	-----	New Guidance information.
6H	Figs. 6C-1, etc.	<b>Illustrations of Typical Applications</b>	Addressed generally, but no details related to intersection and ramp situations. These and other typicals have been addressed in the ODOT TEM.	More details provided and more examples provided. Essentially no change for ODOT; these have been in the TEM.
<b>Part 7</b>	-----	<b>Traffic Control for School Areas</b>	<b>The material was located in other related Parts.</b>	<b>New Part specifically addressing school areas.</b>
7A.01	5B-2	<b>Need for Standards</b>	"traffic control used ... <u>must be</u> related to volume..."	"traffic control devices used ... <u>shall be</u> related to volume..." Essentially the same material, just relocated.

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7A.04	5B-1 & 5C-9	<b>Scope</b>	Section 5C-9 indicated that "Portable school sign shall not be placed within the roadway at any time."	New Standard requiring conformance in school areas to the principles and standards established in Part 7. Also, adds "Portable school signs shall not be used."
7B.01, Table 7B-1	-----	<b>Size of School Signs</b>	Sizes were shown with each sign, rather than in an overall table.	A few changes.
7B.08	5C-13	<b>School Advance Warning Signs</b>	Required use of the SCHOOL plate with the symbol sign. Table Z-1 establishes placement information.	Use of the SCHOOL plate with this sign has been eliminated. The legend AHEAD or a distance is required when the sign is used.
7B.09	5C-14	<b>School Crosswalk Warning Signs</b>	Symbol sign showed the crosswalk lines.	The crosswalk lines have been eliminated from the sign design. Also, a new Standard has been introduced requiring the use of a diagonal downward pointing arrow plaque when the sign is used in certain situations.
7B.11	5B-4	<b>School Speed Limit Assembly</b>	Showed only the DURING RESTRICTED HOURS plate.	Adds the hours plate. Plan to add text to the ODOT TEM to reinforce that fed sign S4-1 shown in text would not normally be correct by Ohio law.
7B.11	5C-1 - 5C-5, Figs. Z-6 and Z-7	<b>School Zones</b>	Described school zones and the procedures by which they may be extended.	References the TEM for procedural information for extending school zones.
7D.01	5C-21 - 5C-37	<b>Signals</b>	Addressed information related to signals in school areas that was in addition to that in Part 6, Signals.	All information regarding highway traffic signals in school areas is discussed in Part 4, Signals. Information just moved.

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<b>Part 8</b>	[various, Parts 2, 3 and 6]	<b>Traffic Control for Highway-Rail Grade Crossings</b>	<b>The material was located in other related Parts.</b>	<b>New Part specifically addressing highway-rail grade crossings.</b>
8A.01	Appendix A	<b>Definitions</b>	Addressed briefly in Appendix A.	Introduced a Standard with a more extensive list of definitions.
8A.04	-----	<b>Grade Crossing Elimination</b>	-----	Added Standard and Guidance information.
8A.05	-----	<b>Temporary Traffic Control Zones</b>	-----	Added Standard and Guidance information.
8B.02	2L-41	<b>Crossbuck Signs - Additional Reflective Material</b>	-----	Added requirement for white reflective strip on the back of each blade of the Crossbuck sign and on the support.
8B.03	2N-43	<b>Warning Signs on Roads Parallel to the Tracks</b>	Use of signs was an option.	Added a requirement for these signs in some circumstances.
8B.04	-----	<b>EXEMPT Sign</b>	-----	Added Option information.
8B.08	-----	<b>TRACKS OUT OF SERVICE Sign</b>	-----	Added Standard and Option information.
8B.09	-----	<b>Emergency Notification Sign</b>	-----	Added Guidance information.
8B.10	-----	<b>Trains May Exceed 80 mph Signs</b>	-----	Added Guidance information.
8B.11	-----	<b>NO HORN Sign</b>	-----	Added Standard information.
8B.12	-----	<b>NO SIGNAL Sign</b>	-----	Added Option information.

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8B.13	-----	<b>LOOK Sign</b>	-----	Added Option information.
8B.14	-----	<b>Low Ground Clearance Sign for Crossing</b>	-----	Added Standard, Guidance and Option information.
8B.15	-----	<b>Storage Space Sign</b>	-----	Added Guidance and Option information.
8B.17	-----	<b>Stop Lines</b>	Addressed only in a figure.	Added Guidance information.
8B.18, Fig. 8B-4	-----	<b>Marking the Dynamic Envelope</b>	-----	Added Standard, Guidance and Option information.
8B.20	-----	<b>Skewed Railroad Sign</b>	----- Sign was shown in TEM/SDM.	Added Standard, Guidance and Option information.
8D.05, Fig. 8D-2	-----	<b>Four-Quadrant Gate Systems</b>	-----	Added Standard, Guidance and Option information.
<b>Part 9</b>	<b>Part 9</b>	<b>Traffic Control for Bicycles Facilities</b>	<b>Related material had been located in other Parts of the OMUTCD. It was gathered into Part 9 in OMUTCD Revision 21.</b>	<b>Updated as needed and revised to incorporate the new MUTCD format.</b>
9A.02	9A-2	<b>Scope</b>	Indicated that Part 9 included signs, markings and signals that “may” be used.	Indicates that Part 9 covers signs, markings and signals that are used on roadways and shared-use paths. A new Guidance paragraph indicates that Parts 1, 2, 3 and 4 should be reviewed. A new Standard paragraph clarifies that “None of the bikeway designations in this Manual shall be construed to preclude permitted bicycle travel on roadways or portions of roadways that do not have bikeway designations.”

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9A.03	9A-3	<b>Definitions</b>	We had adopted the MUTCD definitions with a few modifications.	Adopted the MUTCD definitions, which are now shown as Standards (shalls). Some are different from what we've been using.
9A.08	9A-9	<b>Colors</b>	Indicated that the colors should conform to 1H and 2C-4.	Text now references 1A.12, which establishes the Standard for colors.
9B.01, Fig. 9B-1	9B-1 - 9B-3, Fig. B-1	<b>Application &amp; Placement of Signs</b>	Figure B-1 showed a minimum 1 foot dimension from the edge of the shoulder to the edge of the sign. Section 9B-2 indicated that "overhead sign clearance on bicycle paths shall be a minimum of 8 feet, with 10 feet being the desired height."	The 1 foot dimension in the figure has been dropped. The reference to 10 foot being the desired height for overhead signs has been dropped. Language has been added to clarify how the dimensions are measured, e.g., "the clearance from the bottom edge of the sign to the path surface directly under the sign shall be a minimum of 2.4 m (8 ft)."
9B.02	9B-2	<b>Design of Bicycle Signs</b>	Indicated that where signs shown in other parts of the Manual were intended for exclusive bicycle use, smaller sign sizes may be used.	Sign sizes are specified in Table 2B-1 for signs that apply to drivers and bicyclists, and in Table 9B-1 for signs used on shared-use paths.
9B.03	9B-10	<b>STOP/YIELD (R1-1, R1-2)</b>	If used on bike path size may be reduced, but no smaller than 18x18 for STOP and 24x24x24 for YIELD.	Std. size on shared-use path shall be 18x18 and 24x24x24. A 30x30 or 36x36x36 may be used for added emphasis. Includes additional guidance regarding assignment of priority at shared-use path/roadway intersections.

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9B.04	9B-8	<b>Bicycle Lane Sign (Designated Lane Sign) (R3-16, R3- 17)</b>	Was... "should be used only in conjunction with the appropriate pavement marking" and "should be used in advance of a bike lane."	Now... "shall be used only in conjunction with Bicycle Lane Symbol pavement markings" and "shall be used in advance of a marked lane." The sign have been revised to eliminate the elongated diamond symbol. A new sign has been provided for when lane along the bikeway is used for parking.
9B.05	9B-12	<b>BEGIN RIGHT TURN LANE YIELD TO BIKES (R4-4)</b>	Mentioned use of the R-32 (RIGHT/LEFT LANE MUST TURN RIGHT/LEFT) for when a bicycle lane is provided near the Stop Line.	Use of the R-32 is not mentioned.
9B.06	9B-6	<b>NO MOTOR VEHICLES Sign (R5-3)</b>	Required the sign "at the entrance to a bicycle path at a point near (recommended 25 ft.) the entrance from the roadway."	Requires the sign "at the entrance to a shared-use path."
9B.07	9B-5	<b>Bicycle Prohibition Sign (R5-6)</b>	Use was a "may" condition. Indicated that the sign should be placed approximately 25 ft. from the intersection to be clearly visible.	Use is a "should" condition. The 25 ft. placement guideline was dropped. A provision has been added to allow an 18x18 inch size when used on a sidewalk.
9B.09	9B-7	<b>Bicycle Regulatory Signs (R9-5, R9-6)</b>	Indicated that these signs "may be erected off the edge of the sidewalk, near the crossing location, where bicyclists are expected to dismount and walk with pedestrians while crossing the street."	Indicates that these signs "should be installed off the edge or the sidewalk, near the crossing location, where bicyclists will be crossing the street."
9B.13	9B-17	<b>Intersection Warning Signs (W2 Series)</b>	Allowed use for supplemental warning in advance of intersections where STOP or YIELD signs are erected.	Indicates that they should not be used when the shared-use path approach to the intersection is controlled by a STOP, YIELD sign or a traffic signal.

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9B.14	9B-15	<b>Bicycle Surface Condition Sign (W8-10)</b>	Was a "should" condition.	May be used now.
9B.15	9B-14	<b>Bike Crossing Sign (W11-1)</b>	Was a "should" condition where a bicycle path crossed or entered the roadway. Mentioned that in urban conditions, the sign should be placed 250 feet in advance of the crossing, and referred to Table WS-1 for rural conditions.	Use is an option. When used, placement is per Table 2C-4. When used at the crossing location it is supplemented with a diagonal downward pointing arrow plaque to show the location. An option has been added to clarify that the fluorescent yellow-green color may be used for the background.
9B.17	9B-20	<b>Bike Route Guide Signs (D11-1)</b>	Use was a "shall" condition.	Use of the sign is an option. Placement guidelines are the same.
9B.18	9B-21	<b>Bicycle Route Markers (M1-8, M1-9)</b>	Use was a "shall" condition.	Use of the M1-8 is an option; however, Standards are set for color and general layout of the Bicycle Route and Interstate Route markers. Information is provided about assignment of Interstate Bicycle Routes.
9B.20	9B-24	<b>Bicycle Detection Signing</b>	Indicated that if a pushbutton system of actuation is used for bicyclists signs similar to those in Section 2L-3 should be used.	Not addressed.
Figs 9C-1 - 9C-6	Figs. B-4 - B-9	<b>Typical Markings for Bicycle Facilities</b>	The elongated diamond symbol was used to mark all bicycle lanes/paths.	The elongated diamond symbol is no longer used for bicycle facilities. The bike symbol or word markings are used. Some new information has been added to the figures, and some previously shown have been replaced or combined into new typicals.

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-----	Fig. B-10	<b>Typical Marking Dimensions at Bicycle Path Crossings</b>	Provided an illustration of the dimensions for the markings and signs on a bicycle path approaching an intersection with a roadway or a railroad grade crossing.	Figure has been eliminated.
9C.03	9C-3	<b>Marking Patterns, Colors and Materials</b>	Use of a solid white line, a minimum of 6 inches in width, was a "should" condition to separate a bicycle lane from the traveled lane for other vehicles. A dashed yellow center line, 4 inches in width, was presented as an option to delineate the bicycle path and to assign right-of-way on a bi-directional bicycle path. This center line was recommended only on bicycle paths 8 feet or more in width.	Sections 3A.05, 3A.06 and 3B.22 are referenced for the color, symbols, size and types of lines, except for an option that has been retained regarding the use of edge lines and a Stop Lines on shared-use paths. Center lines are not required on shared-use paths. However, "Where shared-use paths are of sufficient width to designate two minimum width lanes, a solid yellow line may be used to separate the two directions of travel where passing is not permitted, and a broken yellow line may be used where passing is permitted."
9C.04	9C-4	<b>Markings For Bicycle Lanes</b>	The diamond-shaped Preferential Lane symbol was required. If used with other word or symbol markings the diamond-shaped symbol was to precede them.	Longitudinal pavement markings should be used to define bicycle lanes. The text clarifies that the markings supplement signing, and signs are required to be used with preferential lane symbol markings. Placement criteria for the bicycle lane symbol has been added, and it is noted that if the symbol is used in conjunction with other word or symbol messages, it shall precede them.
9C.05	9C-5	<b>Words and Symbols Applied to Pavement</b>	The text referred to Figures B-4 through B-10 for "optional word and symbol markings considered appropriate for use."	The text now indicates that the "optional word and symbol markings shown in Figure 9C-6 may be used." They have changed.



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			<b>OMUTCD 1972 Edition</b>	<b>OMUTCD 2003 Edition</b>
9C.06	9C-6	<b>Object Markers on Shared-Use Paths</b>	The text indicated that all object markers should be designed using reflective materials or coatings.	All object markers are required to be retroreflective. Obstructions within the bikeway are required to be marked with the appropriate object marker or delineation.
9C.07	9C-6	<b>Pavement Markings for Obstruction</b>	The text and Figure B-11 indicated that a hazard warning marking should be used to mark an obstruction in the roadway.	The text and Figure 9C-7 indicate a typical obstruction pavement marking that should be used if the obstruction cannot be eliminated. A formula has been provided to determine the length of the marking. The marking shown is slightly different than that shown previously in the manual.
9D.01	9D-1 & 9D-3	<b>Signals / Application</b>	Text indicated that the "warrants used for motor vehicles are considered appropriate for use in determining the need for signals to serve bicyclists" and that generally bicycles "can cross intersections under the same signal timing arrangement as motor vehicles."	The text indicates that "for signal warrant evaluation, bicyclists may be considered as either vehicles or pedestrians."
9D.02	9D-3	<b>Signal Operations for Bicycles</b>	The text indicated that on all bikeways signal timing should be reviewed and adjusted, if necessary to consider the needs of bicyclists.	The text requires that on bikeways the needs of bicyclist shall be considered when setting signal timing.
-----	9D-4	<b>Bicycle-Sensitive Actuated Signals</b>	Text discussed the possible use of bicycle detection.	This discussion was eliminated.
-----	9E-1	<b>Lighting</b>	The text provided some general information indicating that lighting may be used on bicycle paths, and referencing Section 6G of the Manual.	This information has been eliminated. Lighting information is no longer included in the OMUTCD. This subject is addressed in the TEM.

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			<b>(References to the TEM mean the ODOT Traffic Engineering Manual, references to SCDs mean the ODOT Traffic Standard Construction Drawings and references to the MUTCD mean the national Manual on Uniform Traffic Control Devices published by FHWA.)</b>	
Part, Section or Figure No.	Part, Section or Figure No.		<b>OMUTCD 1972 Edition</b>	<b>OMUTCD 2003 Edition</b>
Part 10	-----	Traffic Control for Highway-Light Rail Transit Grade Crossings	Any related material was located in other related Parts.	This is a new Part in the MUTCD, and it has essentially been copied into the OMUTCD.
10A.01	-----	Introduction	-----	New text incorporated, includes a requirement that "where light rail transit and railroads use the same tracks or adjacent tracks, the traffic control devices, systems, and practices for highway-rail grade crossings described in Part 8 shall be used."
10A.02	-----	Use of Standard Devices, Systems, and Practices	-----	New text incorporated, including two "shalls" requiring conformance to the devices, systems and practices "herein" and requiring approval from the "local agencies having statutory authority" before installing or modifying a highway-light rail transit grade crossing traffic control system.
10A.04	-----	Grade Crossing Elimination	-----	New text incorporated. Allows for temporary use of TRACKS OUT OF SERVICE sign.
10B.01	-----	Hwy-Lt Rail Grade Crossing Control Systems	-----	New section, which contains a requirement about providing traffic control at these grade crossings.
10C.02	-----	LOOK Sign	-----	Option (may) section added.
10C.06	-----	Activated Blank-Out Turn Prohibition Signs	-----	Section added; includes Guidance and Option information.

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			<b>(References to the TEM mean the ODOT Traffic Engineering Manual, references to SCDs mean the ODOT Traffic Standard Construction Drawings and references to the MUTCD mean the national Manual on Uniform Traffic Control Devices published by FHWA.)</b>	
<b>Part, Section or Figure No.</b>	<b>Part, Section or Figure No.</b>		<b>OMUTCD 1972 Edition</b>	<b>OMUTCD 2003 Edition</b>
10C.07	-----	<b>Divided Highway with Rail Transit Crossing Signs</b>	-----	Standard, Guidance and Option information added.
10C.08	-----	<b>No Vehicles on Tracks Signs</b>	-----	Standard, Guidance and Option information added.
10C.09	-----	<b>Light Rail Transit Only Lane Signs</b>	-----	Standard, Guidance and Option information added.
10C.10	-----	<b>Do Not Pass Light Rail Transit Signs</b>	-----	Guidance and Option information added.
10C.11	2N-43	<b>Advance Warning Signs</b>	The Advance Railroad Warning sign and the warning signs for tracks running parallel to the highway were addressed, but not others in this new section.	Standard and Option information added.
10C.12	-----	<b>Activated Blank-Out Turn Prohibition Warning Signs</b>	-----	Added Option information.
10C.13	-----	<b>Light Rail Station Signs</b>	-----	Added Option information.
10C.14	6G-5	<b>Illumination of Crossings</b>	Addressed in general as recommendation for lighting.	New section with support information that references ANSI RP-8.
10C.15, Figs. 10C-1 - 10C-4	-----	<b>Marking the Dynamic Envelope</b>	-----	New Standard, Guidance and Option information.

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10D.02	-----	<b>Four-Quadrant Gate Systems</b>	-----	New Standard, Guidance and Option information.
10D.03	-----	<b>Automatic Gates</b>	-----	New Guidance and Option information.
10D.04	-----	<b>Flashing-Light Signals</b>	-----	New Standard, Guidance and Option information.
10D.05	6F-6	<b>Traffic Control Signals</b>	Section 6F-6 addressed some of the Guidance information in the new section.	New Standard, Guidance and Option information.
10D.06	-----	<b>Traffic Signal Preemption</b>	-----	New Standard, Guidance and Option information.
10D.07, Fig. 10D-1	-----	<b>Traffic Control Signals for Lt Rail Transit Crossings</b>	-----	New Standard, Guidance and Option information.
10D.08, Figs. 10D-2 - 10D-8	-----	<b>Pedestrian and Bicycle Signals and Crossings</b>	-----	New Standard, Guidance and Option information.
-----	<b>Appendix A</b>	<b>Definitions.</b>	<b>Consolidated definitions of many terms related to the OMUTCD text. If the related term was defined in the ORC, the definition is shown in italics.</b>	<b>Definitions have been incorporated into Part 1 and several of the individual chapters.</b>
<b>Appendix A1</b>	-----	<b>MUTCD reference information</b>	-----	<b>Background information included regarding the related national legislation</b>
<b>Appendix B1</b>	<b>Appendix B</b>	<b>Cross Reference Guide to the ORC</b>	<b>Included in Appendix B.</b>	<b>Updated information; added some references; added indication of which sections are also quoted in Appendix B2.</b>
<b>Appendix B2</b>	<b>Appendix B</b>	<b>ORC Quotes</b>	<b>included in Appendix B</b>	<b>updated information</b>

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			<b>OMUTCD 1972 Edition</b>	<b>OMUTCD 2003 Edition</b>
				The reprint of Section 4511.76 regarding school buses has been updated.
				Added legislative history to each reprint of an ORC section.
<b>Appendix C</b>	<b>Appendix C</b>	<b>Sign Index</b>	<b>Included sign cut and cross reference to the related text</b>	<b>Space reserved for similar Sign Index. However, to expedite publication, and because of various additional changes pending in the signing areas, it was decided to temporarily delete this signing information.</b>