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No. ~~68658-1~~ I

69358-1

IN THE COURT OF APPEALS
OF THE STATE OF WASHINGTON
DIVISION I

STEVEN JEWELS,
Plaintiff/Appellant,
v.
CITY OF BELLINGHAM
Defendants/Respondents.

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APPELLANT'S OPENING BRIEF

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TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	ASSIGNMENTS OF ERROR	1
III.	FACTS	2
A.	Statement of Facts	2
B.	Procedural History.....	5
C.	Standard of Review – De Novo.....	5
D.	The Recreational Land Use Statute RCW 4.24.210 Does not Afford Immunity to the City of Bellingham.....	7
E.	Knowledge	9
1.	Neither the Speed Bump, nor the Extension were Standard Traffic Control Devices	9
2.	Constructive Knowledge Applies because the Hazard was Created Ab Initio	14
3.	Summary Judgment is Inappropriate because Defendants Created the Dangerous Condition and Notice of its Existence is Therefore Presumed.	16
4.	Defendants Failed to Take Reasonable Precautions for the Hazard they Created	17
5.	State Law and City of Bellingham’s Own Ordinances Required that Mr. Jewel Ride his Bicycle into the Hidden Hazard.	18
F.	The Unpainted Hidden Speed Bump Extension was a Dangerous Condition.....	19
G.	The Obstruction Was Artificial	21
H.	The Speed Bump Extension was Hidden from View by Location, Size, and Material, and was without any Warning so that it was Latent	22

1. Latent Conditions like the one that injured Steve Jewels are specifically Not Given Immunity under the Recreational Land Use Statute	22
2. There were no Warning Signs relative to the unpainted extension of the speed bump	28
3. The Conditions created by Defendant were Deceptive and the Obstruction itself was Latent	31
I. City of Bellingham Breached its Duty to the Traveling Public and Seeks to Hide behind the Recreational Land Use Statute.....	33
IV..... CONCLUSION	34

TABLE OF AUTHORITIES

Cases

<i>Arnold v. Sanstol</i> , 43 Wash.2d 94, 98-99, 260 P.2d 327 (1953).....	9
<i>Berglund v. Spokane County</i> , 4 Wash.2d 309, 103 P.2d 355 (1940).....	20
<i>Carlyle v. Safeway Stores, Inc.</i> , 78 Wn. App. 272, 275 896 P.2d 750 (1995).....	17
<i>Chen v. City of Seattle</i> , 153 Wn.App. 890, 902-03, 223P.3d 1230 (Div. 1 2009).....	20
<i>Christen v. Lee</i> , 113 Wn.2d 479, 488, 780 P.2d 1307 (1989).....	30
<i>Cultee v. City of Tacoma</i> , 95 Wn.App. 505, 522, 977 P.2d 15 (1999).....	23, 24, 25, 26
<i>Davis v. Niagara Mach. Co.</i> , 90 Wn.2d 342, 581 P.2d 1344 (1978).....	6
<i>Davis v. State</i> , 102 Wn. App. 177, 184, P.3d 1191 (Div. II 2000).....	8, 23
<i>Edege-Nissan v. Crystal Mountain</i> , 93 Wash.2d 127, 606 P.2d 1214 (1980);.....	17
<i>Falconer v. Safeway Stores, Inc.</i> , 49 Wn.2d 478, 303 P. 2d 294 (1956);.....	17
<i>Gaeta v. Seattle City Light</i> , 54 Wn.App.603, 774 P.2d 1255 (1989).....	30
<i>Gerberding v. Munro</i> , 134 Wn.2d 188, 199, 949 P.2d 1366 (1998);.....	21
<i>Iwai v. State</i> , 129 Wn.2d 84, 96, 915 P.2d 1089 (1996).....	16

<i>Iwai v. State</i> , 129 Wn.2d 84, 96, 915 P.2d 1089 (1996).....	16
<i>Johnson v. State</i> , 77 Wn.App. 934, 894 P.2d 1366 (1995).....	17
<i>Keller v. City of Spokane</i> , 146 Wn.2d 237, 249, 44 P.3d 845 (2002).....	33
<i>Klossner v. San Juan County</i> , 21 Wn. App. 689, 586 P.2d 899 (1978), <i>aff'd</i> , 93 Wn.2d 42 (1979).	6
<i>Lamphiear v. Skagit Corp.</i> , 6 Wash.App. 350, 356, 493 P.2d 1018 (1972).....	9
<i>Marincovich v. Tarabochia</i> 114 Wn.2d 271, 275, 787 P.2d 562 (1990).....	5
<i>Matthews v. Elk Pioneer Days</i> , 64 Wn.App. 433, 437-38, 842 P.2d 541, <i>review denied</i> , 119 Wn.2d 1011, 833 P.2d 386 (1992).....	8
<i>Morgan v. United States</i> . 709 F.2d 580 (9 th Cir. 1983).	8
<i>Owen v. Burlington N. & Santa Fe R.R. Co.</i> , 153 Wn.2d 780, 788, 108 P.3d 1220 (2005).....	33
<i>Pimentel v. Roundup Co.</i> , 100 Wash.2d 39, 49, 666 P.2d 888 (1983).....	17
<i>Public Employees Mutual Ins. Co. v. Fitzgerald</i> , 65 Wn. App. 307, 828 P.2d 63 (1992).....	5
<i>Ravenscroft II</i> , 136 Wn.2d 911, 925,969 P.2d 71 (1998).....	33
<i>Ravenscroft v. Washington Water Power Co.</i> , 136 Wn.2d 911, 921, 696 P.2d 75 (1998).....	21, 23, 24
<i>Ruff v. King County</i> , 125 Wn.2d 697, 705-06, 887 P.2d 886 (1995).....	13
<i>Snohomish County v. Anderson</i> , 124 Wn.2d 834, 843 (1994).....	6, 31

<i>Tabak v. State of Washington</i> , 73 Wn.App. 691, 696 870 P.2d 1014 (1994).....	9
<i>Tanguma v. Yakima County</i> , 18 Wn.App. 555, 558, 569 P.2d 1225 (1977).....	9
<i>Tennyson v. Plum Creek Timber Co.</i> , 73 Wn.App. 550, 872 P.2d 524 (1994);.....	30
<i>Trueax v. Ernst Home Centers</i> , 70 Wn. App. 38, 853 P.2d 491 (Div. 3 1993).....	17
<i>Vacova v. Farrell</i> , 62 Wn. App. 386, 814 P.2d 255 (1991).....	6
<i>Van Dinter v. City of Kennewick</i> , 121 Wn.2d. 38, 45, 846 P.2d 522 (1993).....	23, 26, 28, 30
<i>Van Dinter v. City of Kennewick</i> 64 Wn.App. 930, 934-35, 827 P.2d 329 (1992) <i>aff'd</i> 121 Wn.2d 846 P.2d 522 (1993).....	8, 19, 23
<i>Wardhaugh v. Weisfield's, Inc.</i> , 43 Wash.2d 865, 264 P.2d 870 (1953).....	17
<i>Washington State Coalition for the Homeless v.</i> <i>Department of Soc. & Health Servs.</i> , 133 Wash.2d 894, 905, 949 P.2d 1291 (1997),.....	21
Statutes	
23 U.S.C. § 402(a).....	11
Bellingham, Wash., Mun. Code §11.03.010 (1994).....	10
Bellingham, Wash.,Mun. Code §11.03.060 (1999).....	11
Bellingham, Wash.,Mun. Code §11.48.070 (1999);.....	19
Bellingham, Wash.,Mun. Code §8.04.060 (1995).....	20
RCW 4.24.210	7, 21
RCW 4.24.210 (1).....	7

RCW 4.24.210(3).....	19
RCW 4.24.210(4)(a)	22
RCW 4.24.210(4).....	7, 22
RCW 46.04.670	19
RCW 46.61.755	20
RCW 46.61.770	19
RCW 46.90.545	19
RCW 47.36.030	9
 <i>Other Authorities</i>	
2003 MUTCD Introduction page I-1	10
2003 MUTCD § 1A.02 Principles of Traffic Control Devices; page 1A-I	13
2003 MUTCD § 1A.04 Placement and Operation of Traffic Control Devices page 1A-2.....	13
2003 MUTCD § 1A.07 Page 1A-2	12
2003 MUTCD § 1A.07 Responsibility for Traffic Control Devices.....	14
2003 MUTCD § 9C.03 page 9C-4.....	28
2003 MUTCD §1A.01.	12
2003 MUTCD §1A.07, page 1A-2	34
2003 MUTCD Page I-3.....	12, 34
2003 MUTCD Part 9.....	28
2003 MUTCD, § 9A.01 page 9A-1	10
2003 Revision 1 of MUTCD.....	10

<u>Black's Law Dictionary</u> , 394 (6 th ed. 1994).....	19, 20
<u>Black's Law Dictionary</u> , 719 (6 th ed. 1994).....	20
Manual on Uniform Traffic Control Devices	9
Washington State Department of Transportation Design Manual Volume 1 (July 2012).....	16
WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, 124 (1986).....	21
WPI 1.03	9
<i>Rules</i>	
23 CFR 655.603	14
23 CFR 655.603(b)(1).....	11
CR 56(c).....	5, 23, 30
ER 801(d)(2).	27
WAC 468-95-010.....	9
<i>Treatises</i>	
RESTATEMENT (SECOND) OF TORTS §384 (1965)	18

I. INTRODUCTION

This appeal arises out of a personal injury case in which Appellant Steven Jewels was injured while bicycling on June 30, 2008, in a shaded area of City of Bellingham's Cornwall Park. When he entered the park, he saw a painted speed bump which was built by the City of Bellingham in 2007, he attempted to go through what appeared to be a gap between the speed bump and the curb, and instead encountered an unpainted extension of the speed bump made of asphalt, but was several inches lower than the speed bump and curb. The impact into this unpainted speed bump extension deflected Mr. Jewels' front tire into an area that had been cut out of the curb, shattering the wheel of Mr. Jewels bicycle, causing him to fall and leading to his injuries. The City of Bellingham maintained that the Recreational Land Use Statute provided immunity even though it created the condition within the year that caused injury to the appellant Steven Jewels.

II. ASSIGNMENTS OF ERROR

1. Under the Recreational Land Use Statute, if a defendant creates an artificial condition that cannot be discerned by a user bicyclist is that condition considered latent?
2. Under the Recreational Land Use Statute, if a user offers proof by an expert witness that the condition was not only latent, but also deceptive, does that create an issue of fact that cannot be decided on summary judgment?

3. Under the Recreational Land Use Statute, if a defendant adopted published safety standards in the Washington Manual of Uniform Traffic Control Devices to control both automobiles and bicyclists traffic in a city park, and then creates a condition that is contrary to the Manual and accepted practices, and shortly thereafter that condition is the proximate cause of injury, is actual knowledge imputed on the property owner who created the condition?
4. Under the Recreational Land Use Statute, if the trial court found that the condition was hazardous, but held that the defendant was not liable because the condition was not dangerous; did the trial court err by ruling that an artificial latent condition without any warning signs, can be hazardous, but not dangerous, and therefore does not trigger an exception to the Recreational Land Use Statute?

III. FACTS

A. Statement of Facts

On June 30, 2008, at around five in the afternoon appellant Steven Jewels was riding his bicycle in Bellingham, Washington. CP 091. He had parked his car in Bay View State Park, Washington and was engaged in riding which took him through the City of Bellingham. CP 091. Mr. Stevens is an experienced cyclist who rides both recreationally and to commute to work. CP 090. At around five or six in the evening, Mr. Jewels noticed he was near Cornwall Park. CP 091. He remembered Cornwall Park from his days attending Western Washington University

and decided to ride through the park on the way back to Bay View State Park. CP 091.

As he entered the park via the roadway, he went over a speed bump that was so high that even though he was traveling at the moderate speed of five to ten miles per hour, it jarred and knocked his water bottle almost out of its cage. CP 091. Mr. Jewels repositioned the bottle and quickly looked ahead to see that there was another speed bump ahead. Like the one that had severely jarred him, this speed bump was also painted yellow. CP 091. He looked for a gap that he could use to bypass the speed bump, a common occurrence as speed bumps are dangerous for bicyclists and motorcyclists. CP 091; CP 107-108. In fact there were gaps between the curbs and first speed bump Mr. Jewels had just traveled over. CP 91, 95, 96 Jewels Dec. ¶ 8, Exhibit B. As Mr. Jewels approached the second speed bump, he saw what appeared to a gap between the curb and the speed bump. CP 91-92 Jewels Dec. ¶ 8 and 9. In his experience over many years of cycling, a gap was commonly left between the curb and edges of speed bumps to allow cyclists to pass through safety without being thrown from their bicycles. CP 91 Jewels Dec. ¶ 8.

As Mr. Jewels traveled into the shade of the trees toward the second speed bump, he looked at what appeared to be a gap, which appeared to him to be composed of flat bare pavement undistinguishable from the roadway. CP 92 Jewels Dec. ¶ 9. He maneuvered his bicycle to

go through the apparent gap, but instead his front tire hit an unpainted extension of the speed bump. CP 92 Jewels Dec. ¶ 9. This extension appears to have been installed at a later date, it was unpainted whereas the rest of the speed bump was painted yellow, and it appears to have been installed to divert water. CP 92 Jewels Dec. ¶ 9; Exhibit C.

Mr. Jewels' front tire was deflected into the curb which violently threw him off his bicycle and onto the cement causing a huge laceration on his leg and other injuries. CP 92 Jewels Dec. ¶ 10. As he laid there stunned, bleeding and in pain, a woman walking nearby on her way home found Mr. Jewels. This woman, Jolie McGrath, used an extra shirt to staunch the bleeding of his leg and called 911. CP 92 Jewels Dec. ¶ 11. Fearful for Mr. Jewels condition, Ms. McGrath remained until the paramedics arrived to take Mr. Jewels to the emergency room. CP 92 Jewels Dec. ¶ 12.

The City of Bellingham owns and maintains Cornwall Park as well as the road that goes through it. The speed bumps were installed in 2007 by a private contractor. CP 72-73 Rutherford Declaration Exhibit A. However, the water diversion is not noted upon any work order and appears from the photographs to have been created separately from the speed bumps. CP 16 See Slack Dec. ¶ 14.

B. Procedural History

Mr. Jewels was injured on June 30, 2008. A notice of claim was mailed on September 15, 2009. The claim was denied on February 9, 2009. A lawsuit was filed on April 12, 2011 and the Answer was filed May 19, 2011. CP 4-7; 8-13. Respondent City of Bellingham filed a motion for Summary Judgment on June 28, 2012. CP 26-54. Appellant filed his Response in Opposition on July 12, 2012. CP 55-109 Respondent's Reply was filed on July 20, 2012; along with a motion to strike CP 110-114 and 115-118. The matter was argued on July 27, 2012, and an Order for Summary Judgment was granted and entered. CP 119-121. Appellant then filed a Motion for Reconsideration on August 7, 2012. CP 122-129. Respondent's opposed in their Response filed on August 7, 2012. CP 130-134. Appellant filed its Reply on August 23, 2012. CP 135-141. The motion for reconsideration was heard on August 24, 2012 and was denied. CP 142-144.

III. ARGUMENT

C. Standard of Review – De Novo

Summary judgment is proper only where there are no genuine issues of material fact and the moving party is entitled to prevail as a matter of law. CR 56(c); *Public Employees Mutual Ins. Co. v. Fitzgerald*, 65 Wn. App. 307, 828 P.2d 63 (1992). In reviewing a summary judgment order, the Court of Appeals engages in the same inquiry as the trial court. *Marincovich v. Tarabochia* 114 Wn.2d 271, 275, 787 P.2d 562 (1990). In

determining if summary judgment is appropriate, the Court must consider all evidence and inferences in a light most favorable to the non-moving party, in this case Appellant Steven Jewels. *Davis v. Niagara Mach. Co.*, 90 Wn.2d 342, 581 P.2d 1344 (1978). Only when there is no genuine issue as to any material fact, is a moving party entitled to summary judgment as a matter of law. CR 56; *Christen v. Lee*, 113 Wn.2d 479, 488, 780 P.2d 1307 (1989). "In deciding a motion for summary judgment, the court must construe all the facts and reasonable inferences in favor of the nonmoving party; the motion should be granted only if, from all the evidence, reasonable persons could reach but one conclusion." *Snohomish County v. Anderson*, 124 Wn.2d 834, 843 (1994). If any genuine fact issue exists, there must be a trial. *Klossner v. San Juan County*, 21 Wn. App. 689, 586 P.2d 899 (1978), *aff'd*, 93 Wn.2d 42 (1979). A material issue precluding summary judgment is one upon which the outcome of the litigation depends, in whole or part. *Vacova v. Farrell*, 62 Wn. App. 386, 814 P.2d 255 (1991).

In this case there are genuine issues of fact, and summary judgment on liability should not have been granted. Here the City of Bellingham's Motion for Summary Judgment should have been denied; as the condition itself, created shortly before appellant's injury, was contrary to safety standards; was unpainted, and its lower profile than the structures on either side of it, hid it from view of the cycling public. This dangerous

condition which led to Mr. Jewels's injury was clearly latent and deceptive and falls squarely within the statutory exception in the Recreational Land Use statute as a known, dangerous, artificial, latent condition. RCW 4.24.210(4).

D. The Recreational Land Use Statute RCW 4.24.210 Does not Afford Immunity to the City of Bellingham

Washington's Recreational Land Use Statute, RCW 4.24.210, limits the liability of landowners who allow the public to use their land for recreational purposes unless the conduct is intentional, or a person is injured by a *known, dangerous, artificial, latent, condition* for which no warning signs have been posted. The statute reads in part:

(1) Any public or private landowners or others in lawful possession and control of any lands whether designated resource, rural, or urban . . . who allow members of the public to use them for the purposes of outdoor recreation . . . without charging a fee of any kind therefor, shall not be liable for unintentional injuries for such users.

.....

(4) Nothing in this section shall prevent the liability of a landowner or others in lawful possession and control for injuries sustained to users by reason of a known dangerous artificial latent condition for which warning signs have not been conspicuously posted.

RCW 4.24.210 (1), (4)

In this case, the condition causing the injury to Mr. Jewels is why the immunity afforded to public land users is out of reach for the City of Bellingham (hereinafter "City") as it was a condition created by the City, therefore artificial; built in the months prior to Mr. Jewels injury contrary to safety standards and therefore knowledge is imputed; the unpainted extension, lower than the speed bump and curb; made of materials that blended into the pavement and in a shaded area; was latent to intended users such as bicyclists in that it could not be easily seen; and lastly, the condition was dangerous to the traveling public as it produced an injury.

The Recreational Land Use Statute changed the common law by altering the entrant's status from that a trespasser, licensee or invitee to a new statutory classification of recreational user. *Van Dinter v. City of Kennewick* 64 Wn.App. 930, 934-35, 827 P.2d 329 (1992) *aff'd* 121 Wn.2d 846 P.2d 522 (1993); *Davis v. State*, 102 Wn. App. 177, 184, P.3d 1191 (Div. II 2000) While the legal protections afforded the recreational entrant are less than those otherwise afforded the "the public invitee" the immunity given under the state's Recreational Land Use Statute is in derogation of the common law and must be construed narrowly: *Matthews v. Elk Pioneer Days*, 64 Wn.App. 433, 437-38, 842 P.2d 541, *review denied*, 119 Wn.2d 1011, 833 P.2d 386 (1992); *Morgan v. United States*, 709 F.2d 580 (9th Cir. 1983).

E. Knowledge

1. *Neither the Speed Bump, nor the Extension were Standard Traffic Control Devices*

A plaintiff may establish any fact by circumstantial evidence. See WPI 1.03 (circumstantial evidence is evidence from facts or circumstances from which the existence or nonexistence of other facts may be reasonably inferred from common experience); *Lamphiear v. Skagit Corp.*, 6 Wash.App. 350, 356, 493 P.2d 1018 (1972) (proof of fact to be established may be by direct or circumstantial evidence); *Arnold v. Sanstol*, 43 Wash.2d 94, 98-99, 260 P.2d 327 (1953) (substantial evidence to support a verdict may be direct or circumstantial). Where actual knowledge is denied, a plaintiff must come forward with evidentiary facts from which a trier of fact could reasonably infer actual knowledge, by a preponderance of the evidence. *Tabak v. State of Washington*, 73 Wn.App. 691, 696 870 P.2d 1014 (1994).

The State of Washington adopted the traffic engineering standards contained in the Manual on Uniform Traffic Control Devices (hereinafter "MUTCD") in 1972. *Tanguma v. Yakima County*, 18 Wn.App. 555, 558, 569 P.2d 1225 (1977). RCW 47.36.030 and WAC 468-95-010. Washington State adopted the 2003 MUTCD in 2005 and was effective as of December 4, 2005. WAC 468-95-010. By adopting the state standards, The City of Bellingham is responsible for maintaining its roadways in compliance with the minimum standards in the 2003 Manual on Uniform

Traffic Control Devices (“MUTCD”). Excerpts of 2003 Revision 1 of MUTCD is attached as Appendix A.

The City submitted a declaration that the purpose of the speed bumps was to calm car and bicycle traffic. CP 16. When the principles of MUTCD are applied, the speed bump and its extension are contrary to published safety standards and known to be dangerous to bicyclists and motorcycles. MUTCD defines traffic control devices as “all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction.” Introduction 2003 MUTCD page I-1. Additionally, requirements for bicyclist traffic control devices are to be in conformance with the general section of MUTCD. 2003 MUTCD, § 9A.01 page 9A-1. As the speed bumps were constructed in 2007 and the extension sometime thereafter, it is the 2003 MUTCD which was in force at the time.

In 1994, the City of Bellingham adopted via ordinance the regulations of the Model Traffic Ordinance of the State of Washington. Bellingham, Wash., Mun. Code §11.03.010 (1994).¹ The City of Bellingham also adopted the Revised Code of Washington and the

¹ **11.03.010 - ADOPTION BY REFERENCE** The Washington Model Traffic Ordinance (MTO). Washington Administrative Code (WAC) 308-330, as presently constituted or hereinafter amended, is adopted by reference as the traffic code of the City of Bellingham except as expressly provided herein. [Ord. 1999-04-020] <http://www.cob.org/web/bmcode.nsf/>.

Washington Administrative Code en masse, limiting the adoption only as it relates to crimes and offenses which are within the jurisdiction of the a municipality. Bellingham, Wash., Mun. Code §11.03.060 (1999)² and §11.03.070³ (1999)

Notably, the federal government requires nationwide compliance to MUTCD.

In accordance with 23 CFR 655.603(b)(1), States or other Federal agencies that have their own MUTCDs or Supplements shall revise these MUTCDs or Supplements to be in substantial conformance with changes to the National MUTCD within 2 years of issuance of the changes. Unless a particular device is no longer serviceable, non-compliant devices on existing highways and bikeways shall be brought into compliance with the current edition of the National MUTCD as part of the systematic upgrading of substandard traffic control devices (and installation of new required traffic control devices) required pursuant to the Highway Safety Program, 23 U.S.C. § 402(a). In cases involving Federal-aid projects for new highway or bikeway

² **11.03.060 - REFERENCES TO THE REVISED CODE OF WASHINGTON**

References to the Revised Code of Washington (RCW) incorporates, by reference, such sections of the Revised Code of Washington now in effect or as subsequently amended including, but not limited to, any applicable definitions section associated with such sections. In adopting State statutes by reference, only those crimes and offenses within the jurisdiction of a municipality are intended to be adopted and, in those sections adopted which define both misdemeanors and felonies, only the language applicable to misdemeanors and gross misdemeanors is to be applied. [Ord. 1999-04-020] <http://www.cob.org/web/bmcode.nsf/>.

³ **11.03.070 - REFERENCES TO THE WASHINGTON ADMINISTRATIVE CODE**

References to the Washington Administrative Code (WAC) incorporates, by reference, such sections of the Washington Administrative Code now in effect or as subsequently amended, including, but not limited to, any applicable definition section associated with such sections. In adopting State statutes and administrative codes by reference, only those crimes and offenses within the jurisdiction of a municipality are intended to be adopted and, in those sections adopted which define both misdemeanors and felonies, only the language applicable to misdemeanors and gross misdemeanors is to be applied. [Ord. 1999-04-020] <http://www.cob.org/web/bmcode.nsf/>.

construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance with the most recent edition of the National MUTCD before that highway is opened or re-opened to the public for unrestricted travel [23 CFR 655.603(d)(2)].

2003 MUTCD Page I-3 (emphasis in the original)

Additionally, responsibility is clear, for the responsibility for the “design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency . . . having jurisdiction. 23 CFR 655.603 adopts the Manual on Uniform Traffic Control Devices as “the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel.” 2003 MUTCD § 1A.07 Page 1A-2. It is without dispute that the Cornwall Park in Bellingham is open to public travel and the responsibility of the traffic control devices within it resides with the City of Bellingham.

The stated purpose of traffic control devices is to promote highway safety and do so by notifying “road users of regulations and provide warnings and guidance needed for the reasonably safe, uniform, and efficient operation of all elements of the traffic stream.” 2003 MUTCD §1A.01. The MUTCD notes that for a traffic control devices to be effective, it should meet five basic requirements:

- A. Fulfill a need;
- B. Command attention;
- C. Convey a clear, simple meaning;
- D. Command respect from road users; and
- E. Give adequate time for proper response.

Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered in order to maximize the ability of a traffic control device to meet the five requirements listed in the previous paragraph. Vehicle speed should be carefully considered as an element that governs the design, operation, placement, and location of various traffic control devices.

2003 MUTCD § 1A.02 Principles of Traffic Control Devices; page 1A-I

In this case, the speed bump extension did not “command attention” and the cycling traffic could not know it was there as it was effectively invisible to the intended users. CP 91-92 and 106-108. Jewels Declaration; Couch Declaration. Additionally, the 2003 MUTCD notes that “the placement of a traffic control device should be within the road user’s view so that adequate visibility is provided. . . . The location and legibility of the traffic control device should be such that a road user has adequate time to make the proper response in both day and night conditions.” 2003 MUTCD § 1A.04 Placement and Operation of Traffic Control Devices page 1A-2.

The Washington State Supreme Court had held that a governmental entity may be held liable for not complying with minimum MUTCD or American Association of State Highway and Transportation Officials (AASHTO) traffic engineering standards for maintaining a public right of way that was “inherently dangerous or deceptive to a prudent driver.” *Ruff v. King County*, 125 Wn.2d 697, 705-06, 887 P.2d 886 (1995).

2. *Constructive Knowledge Applies because the Hazard was Created Ab Initio*

The speed bumps were installed in Cornwall Park sometime in 2007. CP 72-73 See Rutherford Dec. Exhibit A. Less than a year later on June 30, 2008, Mr. Jewels encountered the speed bump and was thrown from his bike. CP 91. This was not a feature created by the city that fell prey to the ravages of time, but rather was created by Respondent with poor design, and without adequate warnings, as required by state and federal standards.

Notably, The 2003 MUTCD states on page 22:

Section 1A.07 Responsibility for Traffic Control Devices
The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency or the official having jurisdiction. 23 CFR 655.603 adopts the Manual on Uniform Traffic Control Devices as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel.

2003 MUTCD § 1A.07 Responsibility for Traffic Control Devices

There is no question that it is the City of Bellingham who is responsible for the design, construction, placement, as well as the failure to paint the entire hazard of the speed bump.

It is important to note the distinction between speed bumps and speed humps. Speed bumps are generally three to four inches high and a one to three feet base width, while speed humps are broader, with the rise relatively gradual as they are about the same height of three to

four inches high but over a 12 foot base width. CP 80. Speed Humps are included as appropriate devices to slow or calm bicycle traffic in the Manual of Uniform Traffic Control Devices (MUTCD).⁴ The traffic control devices in Cornwall Park are speed bumps which are particularly difficult and dangerous for bicyclists. CP 80-81.

The federal standards have been adopted by Washington State including the 2003 MUTCD and more recently the 2009 standards.⁵ Washington State's published manual of 2003, as well as MUTCD 2003 was in effect when the City of Bellingham installed the dangerous speed bumps in Cornwall Park. The Washington 2003 version supplements to the federal version, also uses speed humps and not speed bumps.⁶ It is notable that Indiana Street, which is just south and runs parallel to the road into Cornwall Park has a series of speed humps demonstrating that the City certainly understood and has used speed humps. CP 141.

In contrast, speed bumps are abrupt and a hazard to vehicles, particularly two wheeled bicyclists and motorcyclists. CP 78-82. Rutherford Dec. Exhibit C. Notably speed bumps are not included in the MUTCD or in any state traffic control and design manuals. CP 080 Report by Edward Stevens, Exhibit C of Rutherford Dec.

⁴ http://mutcd.fhwa.dot.gov/htm/2009/part3/fig3b_29_longdesc.htm.

⁵ http://mutcd.fhwa.dot.gov/knowledge/natl_adopt_2009.htm and <http://www.wsdot.wa.gov/Publications/Manuals/M24-01>.

⁶ <http://www.wsdot.wa.gov/publications/manuals/fulltext/M22-01/M22-01.09Revision.pdf>

Of interest is that the Washington State Department of Transportation publishes a design manual for state facilities. The 2009 version, which references MUTCD, advises against using speed bumps or other similar surface obstructions intended to cause bicyclists to slow down:

4. Approach Treatments

Design shared-use path and roadway intersections with level grades, and provide sight distances. Provide advance warning signs and pavement markings that alert and direct path users that there is a crossing (see the MUTCD). **Do not use speed bumps or other similar surface obstructions intended to cause bicyclists to slow down.** Consider some slowing features such as horizontal curves (see Exhibits 1515-2 and 1515-8). (Emphasis added).

Washington State Department of Transportation Design Manual Volume 1 (July 2012) – page 1515-14. Appendix B.

The speed bump itself at issue was dangerous and should not have been installed. Additionally, the unpainted extension is likewise against federal and state standards as it was a hidden dangerous condition that could not be discerned by intended users.

3. Summary Judgment is Inappropriate because Defendants Created the Dangerous Condition and Notice of its Existence is Therefore Presumed.

Usually, an invitee is required to show that a possessor of land had actual or constructive notice of the unsafe condition. *Iwai v. State*, 129 Wn.2d 84, 96, 915 P.2d 1089 (1996). However, an exception exists “if the landowner **caused** the hazardous condition, then a plaintiff’s duty

to establish notice is also waived.” *Id.* at 102, citing *Carlyle v. Safeway Stores, Inc.*, 78 Wn. App. 272, 275 896 P.2d 750 (1995), and *Pimentel v. Roundup Co.*, 100 Wash.2d 39, 49, 666 P.2d 888 (1983). “The rule requiring such notice is not applicable where the dangerous condition of the premises was created in the first instance by the occupant...One is presumed to know what one does.” See *Falconer v. Safeway Stores, Inc.*, 49 Wn.2d 478, 303 P. 2d 294 (1956); and *Trueax v. Ernst Home Centers*, 70 Wn. App. 38, 853 P.2d 491 (Div. 3 1993). One is presumed to have knowledge about what one does.

4. Defendants Failed to Take Reasonable Precautions for the Hazard they Created

An owner is required to take reasonable precautions against reasonably foreseeable deceptive conditions on his premises to prevent injury to patrons. *Wardhaugh v. Weisfield's, Inc.*, 43 Wash.2d 865, 264 P.2d 870 (1953). Possessors of land have the affirmative duty to either make safe, or warn the invitees against all potentially dangerous conditions. See *Edege-Nissan v. Crystal Mountain*, 93 Wash.2d 127, 606 P.2d 1214 (1980); and *Johnson v. State*, 77 Wn.App. 934, 894 P.2d 1366 (1995).

One who on behalf of the possessor of land erects a structure or creates any other condition on the land is subject to the same liability, and enjoys the same freedom from liability, as though he were the

possessor of land, for physical harm caused to others upon and outside the land by the dangerous character of the structure or other condition while the work is in his charge.

RESTATEMENT (SECOND) OF TORTS §384 (1965) (emphasis added).

Documents obtained from the defendant include a work order dated July 1, 2008 in which it states:

“The 2nd speedbump in Cornwall South was only partly painted. A section next to the shoulder area was not painted and a cyclist did not see that it was part of the speed bump. He hit it and took a nasty fall from his bike. Please paint entire speed pump and make it visible.

This clearly shows that it that the defendant had the means to make this hazard obvious and did not do so.

Appellant’s expert opined that pavement surfaces should be maintained at a level that allows traffic to safely use the roadway at the design or posted speed of the roadway. When bicycles are allowed and expected to use the roadway, a higher standard of pavement maintenance is required. Abrupt deviations in roadway profile are only not allowed, but are considered to be extra hazardous.” CP 79 Rutherford Dec. Ex C.

5. State Law and City of Bellingham’s Own Ordinances Required that Mr. Jewel Ride his Bicycle into the Hidden Hazard

The City if Bellingham’s own ordinances require that bicyclist operating upon a roadway like appellant Steven Jewels are required to ride as near to the right side of the roadway as practicable. Bellingham,

Wash.,Mun. Code §11.48.070 (1999); RCW 46.61.770. Notably almost all the speed bumps in Cornwall Park have gaps next to the curbs which allow motorcyclists and bicyclists to pass through as far to the right side of the road as possible. The exception was of course the dangerous hidden unpainted extension that led to Mr. Jewels fall and injuries.

Bicycles are considered vehicles under RCW 46.04.670⁷ They are also required to obey traffic devices. RCW 46.90.545. Appellant Steven Jewels obeyed these requirements and rode his bicycle as far to the right as practicable, through what he believed to be a gap and paid for his obedience to the law by injury.

F. The Unpainted Hidden Speed Bump Extension was a Dangerous Condition

A dangerous condition is generally defined as a condition of property which creates a substantial risk of injury when the property is used with due care in a manner in which it is reasonably foreseeable that it will be used. Black's Law Dictionary, 394 (6th ed. 1994).The City has submitted that the purpose of the speed bumps was to calm or slow vehicular and bicycle traffic. CP 16. For purposes of RCW 4.24.210(3) the "condition" is "the injury-causing instrumentality itself and its relatedness to the external circumstances in which the instrumentality is situated, or operates." *Van Dinter*, 121 Wash.2d at 43, 846 P.2d 522.

⁷ RCW 46.04.670. Vehicle" includes every device capable of being moved upon a public highway and in, upon, or by which any persons or property is or may be transported or drawn upon a public highway, including bicycles

Certainly it was foreseeable that bicyclists would travel into Cornwall Park. It was also required that cyclist travel upon the roadway and conform to state and municipal traffic laws. RCW 46.61.755 and Bellingham, Wash., Mun. Code §8.04.060 (1995).⁸

The trial court contented that the hidden speed bump extension was hazardous but not necessarily dangerous. RP 10. Black's Law Dictionary defines hazardous as "expose to or involving danger; perilous; risky; involving risk of loss." Black's Law Dictionary, 719 (6th ed. 1994) Dangerous is defined as Attended with risk, perilous, hazardous, unsafe." Black's Law Dictionary, 394 (6th ed. 1994). Clearly, the terms are synonymous. More importantly this court has already opined as to whether a condition on a roadway is dangerous. The analysis as to whether or not a dangerous condition on a roadway exists "does not begin and end with consideration of only the physical characteristics of the roadway at issue," but also material to determination is whether the city exercised reasonable care under the circumstances for the intended uses. *Chen v. City of Seattle*, 153 Wn.App. 890, 902-03, 223P.3d 1230 (Div. 1 2009) citing *Berglund v. Spokane County*, 4 Wash.2d 309, 103 P.2d 355 (1940). It is not only the physical characteristics such as a low

⁸ **8.04.060 - BICYCLE OPERATION** A. Bicycles may be operated only on paved and graveled ways and established trails within city park property. B. Bicycle riding is not permitted on any Sehome Hill Arboretum Trail. C. A violation of this section is a civil infraction. [Ord. 10612 §2, 1995]

profile; paving materials that helped blend it into the pavement; lack of warnings such as yellow paint; placement on a curve; in a shaded area, that contribute to the dangerousness of the hidden speed bump extension, but also the circumstances such as that it was along a roadway that anticipated bicyclists; and that state and local ordinances required that bicyclists travel in the precise location it was placed. It is the totality of physical characteristics and the circumstances that made the hidden speed bump extension dangerous.

G. The Obstruction Was Artificial

Clearly, the roadway, speed bumps, curbs, curb cuts and speed bump extension were created and maintained by the City of Bellingham and are artificial conditions. Courts often look to standard dictionaries to determine the ordinary meaning of words, *Gerberding v. Munro*, 134 Wn.2d 188, 199, 949 P.2d 1366 (1998); *Washington State Coalition for the Homeless v. Department of Soc. & Health Servs.*, 133 Wash.2d 894, 905, 949 P.2d 1291 (1997),. For purposes of RCW 4.24.210, the definition of "artificial" has its ordinary meaning. *Ravenscroft v. Washington Water Power Co.*, 136 Wn.2d 911, 921, 696 P.2d 75 (1998).

. The dictionary defines "artificial" as follows:

1: contrived through human art or effort and not by natural causes detached from human agency: relating to human direction or effect in contrast to nature: (a): formed or established by man's efforts, not by nature[.]

WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, 124 (1986).

In this case, the roadway, speed bump, curb and unpainted extension of speed bump were created by the City of Bellingham. There was no time for the interference of time and wear on these structures. There is no dispute that the conditions that deceived and caused Mr. Jewels to crash were created by the defendant, and are artificial. The City of Bellingham appears to not contest this element.

H. The Speed Bump Extension was Hidden from View by Location, Size, and Material, and was without any Warning so that it was Latent

1. Latent Conditions like the one that injured Steve Jewels are specifically Not Given Immunity under the Recreational Land Use Statute

Notably, The Recreational Land Use Statute states:

(4)(a) Nothing in this section shall prevent the liability of a landowner or others in lawful possession and control for injuries sustained to users by reason of a known dangerous artificial latent condition for which warning signs have not been conspicuously posted.

RCW 4.24.210(4)(a)

In this case, the condition of the unpainted speed bump extension and the cut curb that trapped Mr. Jewels tire and threw him were clearly an artificial, latent and dangerous condition.

The curb cut trapped and broke the front wheel, but it was the unpainted, unmarked extension of the speed bump, that deflected the front wheel into the curb cut. For purposes of the Recreational Land Use statute, the condition “is the injury causing instrumentality itself and its relatedness to the external circumstances in which the instrumentality is

situated, or operates.” *Van Dinter*, 121 Wn.2d 38, at 43, 846 P.2d 522 (1993). The court in *Van Dinter* continued that to view the instrumentality alone “as having been the injury-causing condition would be to artificially isolate some particular aspect of the total condition that caused [plaintiff’s] injury.” *Van Dinter*, 121 Wash.2d at 44.

The issue of latency in this case cannot be determined at summary judgment. Summary judgment is proper where there are no genuine issues of material fact and the moving party is entitled to prevail as a matter of law. CR 56(c); *Public Employees Mutual Ins. Co. v. Fitzgerald*, 65 Wn. App. 307, 828 P.2d 63 (1992). Generally, latency is a factual question for the jury. *Cultee v. City of Tacoma*, 95 Wn.App. 505, 522, 977 P.2d 15 (1999).

“Latent” as used in this recreational use statute means not readily apparent to the recreational user. *Van Dinter v. City of Kennewick*, 121 Wn.2d. 38, 45, 846 P.2d 522 (1993). The question under the statute “is whether the injury causing condition – not the specific risk it poses – it readily apparent to the ordinary recreational user.” *Ravenscroft* 136 Wn.2d at 925.

Latency is viewed from the plaintiff’s perspective, the same condition might be latent to one and patent to another, depending on the viewer’s vantage point. *Davis v. State*, 102 Wn.App. 177, 192-93, 6 P.3d 1191 (2000) *aff’d* 114 Wn.2d 612 (2001). Notably in *Ravenscroft*, the

plaintiff was injured when the boat in which he was riding struck a submerged tree stump in a man-made lake. *Ravenscroft* 136 Wn.2d at 815. The Court of Appeals held that underwater stumps in a reservoir were “obvious or visible as a matter of law”. *Ravenscroft* 136 Wn.2d. at 931. The Washington State Supreme Court reversed, finding that the records did not support either the summary judgment of the trial court, nor the Court of Appeals’ holding because the boat’s driver testified that the stumps were not apparent to him, and other witnesses had seen other boats hit the stumps:

In this case, the driver of the boat testified by affidavit that the submerged stumps were not apparent to him. Other witnesses filed affidavits stating that other boats had hit the stumps, indicating they were not readily apparent.

The record does not support a conclusion that the submerged stumps near the middle of the channel were obvious or visible as a matter of law. The question of whether this particular condition is latent is one of fact and therefore, an order of summary judgment is not appropriate on that issue.

Ravenscroft at 924-26.

Likewise, the court in *Cultee v. City of Tacoma*, 95 Wn.App. 505, 977 P.2d 15 (1999), found that summary judgment was inappropriate as there were issues of fact related to latency. In *Cultee* a young girl drowned at the Nalley Ranch owned by the City of Tacoma. There was a levee along the edge of the property that held back the waters of Hood Canal. The levee broke, flooding part of the east side of a road on the

ranch at high tide. *Cultee* 95 Wn.2d at 508. The victim, with her two cousins visited the ranch and stopped to check the water's depth along the side of the road at a point where there was no water on the road itself. Shortly thereafter, the road became covered with two to four inches of muddy water. The victim rode her bicycle over about eight feet of water-covered- road when she stopped and got off to turn around. As she was getting back on her bicycle, she got too close to the edge and fell in. *Id.* 95 Wn.App. at 510. The court found a question of fact existed as to whether the condition was latent. It was not clear if the road edge was readily apparent when the victim fell into the water. There were other questions of fact as to whether the victim was killed by the depth of the water alone, or a combination of the water obscuring the edge of the road and an abrupt drop into deep water. *Id.* The court determined summary judgment was inappropriate with these questions of fact.

In determining that summary judgment was inappropriate the court in *Cultee* noted that the children with the victim, did not realize that the water was too deep until after she fell in. The court emphasized that all aspects of the dangerous condition must be examined in determining whether the condition is latent or patent:

The City's attempt to isolate various elements of the 'condition' that resulted in Reabecka's death ignores the court's duty to examine together all aspects of the 'condition' before deciding if the condition was either latent or patent as a matter of law, or a jury question. See *Ravenscroft II*, 136 Wn.2d at 924-26. If the Nalley Ranch was open to

the public for recreational use, such that the statute applies, a genuine issue of material fact as to latency remains and summary judgment was inappropriate.

Cultee 95 Wn.App at 523 (footnotes omitted).

Likewise here, the hazard was not apparent until *after* Mr. Jewels fell and was injured. As the non-moving party is the appellant/ plaintiff, Steven Jewels offered evidence via his own declaration and declaration of cycling expert Jim Couch, that the condition was **not discernible** to a bicyclist traveling normally down the road. "Latent" has been defined under the recreational use immunity statute as "not readily apparent to the recreational user." *Van Dinter* 121 Wn.2d at 45. Here, the latent aspect of the condition was that what appeared to be a gap for a cyclist to pass through the speed bump, was actually no such opening, but rather a dangerous, hidden speed bump extension that caused Mr. Jewels to crash. CP 106-108.

The speed bump was new, as these road improvements had been built by the city in 2007, not even a year before Mr. Jewels encountered them and was injured. CP 72-73. The extension to the speed bump and the cut curb must have occurred sometime thereafter. The problem with the speed bumps and the non-standard, unpainted extension at Cornwall Park were a latent dangerous hazard from the moment the speed bumps were installed and a section was left unpainted. CP 78-82; 106-108 Rutherford Dec. Ex. C. Report by engineer Edward Stevens, pgs. 3-5 and Dec. of Couch. Speed bumps like the ones installed in Cornwall Park, are

dangerous for bicyclists and motorcycles and must be painted to alert them so that they can take appropriate action. CP 78-82 and 106-108 Additionally, gaps are commonly left in speed bumps and bicyclists use them to travel through the obstructions safely. CP 106-106 *See* Couch Declaration. It is undisputed that the extension of the speed bump was unpainted when Mr. Jewels encountered it and fell. CP 91 and 76. *See* Declarations of Jewels. In fact, the work order from the City of Bellingham states:

“The 2nd speedbump in Cornwall South was only partly painted. A section next to the shoulder area was not painted and a cyclist did not see that it was part of the speed bump. He hit it and took a nasty fall from his bike.
PLEASE PAINT ENTIRE SPEED BUMP AND MAKE IT VISIBLE.

(emphasis added)

CP 76 Rutherford Declaration Ex. B. Even the City’s employees understood that that unpainted portion was part of the speed bump and that it was not visible without the paint. This work order is an admission against interest by the defendant that the extension of the speed bump was in fact **not visible** to traveling cyclists. ER 801(d)(2). Respondent’s park employees knew that the speed bump needed to be visible as required by federal and state standards as it was a hazard to the traveling public.

2. *There were no Warning Signs relative to the unpainted extension of the speed bump*

Also notable in the 2003 MUTCD Part 9, Traffic Controls for Bicycle Facilities, it notes: Obstructions in the traveled way of a shared-use path shall be marked with retroreflectorized material or appropriate object markers. 2003 MUTCD § 9C.03 page 9C-4. There were no markings of any sort on the unpainted speed bump extension.

First, the extreme edge of the speed bump and its unpainted extension was obscured by the curve as Mr. Jewels approached it and it is within a shady area. CP 19, 21, and 141. The City built those speed bumps in Cornwall Park to calm motor vehicles and bicyclists. CP 16. The City contended and the trial court agreed at the summary judgment hearing that it was readily apparent to a pedestrian, someone standing there. RP 12; CP 18-24. However, it is important to note that the city employee knew that obstruction was there and knew where to look for it as it was now painted. The Washington State Supreme Court held that latency is determined by the perspective of the intended user, *Van Dinter* 121 Wn.2d. at 45. The correct perspective that the trial court should have applied is that of a moving bicyclist, traveling along a shaded road, looking at what appeared to be a gap for him to pass through. From the perspective of the traveling bicyclist, it would be difficult to recognize that in fact, there was no gap, but rather a dangerous unpainted extension of a

speed bump that was lower in height and width to structures on either side of it. CP 25.

Pedestrians were not the intended users for this roadway and this speed bump with its dangerous, hidden, speed bump extension. It was motor vehicles and bicyclists such as appellant Mr. Jewels that were the intended users of the road. Cars could traverse the speed bump and its extension safely. It was to motorcyclists and bicyclists that this speed bump extension was a particular hazard. Accordingly, the trial court applied the wrong test for latency.

That the speed bump extension had asphalt, a paving material, over it does not signal to the intended users that it was raised almost two inches above the pavement and extended the speed bump causing an obstruction to the travelers. Had this extension been painted safety yellow, like the rest of the speed bump, this it would have been an obvious hazard. Using the exhibits of the respondent, but for the yellow paint, there is no way for a person to know of the existence of the speed bump extension. CP 19-23 *See* Declaration of Tom Slack, Exhibit E. Unlike Mr. Slack, Mr. Jewels as he traveled along the road of Cornwall Park, did not have the luxury of knowing that the extension was there. In fact, the actions and omissions of the respondent, led Mr. Jewels to believe that that a gap had been provided for cyclists to safely pass the speed bump as what was standard

practice, not that the speed bump was actually extended to the curb. CP 91-92 and 107-108 See Jewels and Couch Declarations.

The extension to the speed bump, was a relatively small object, two inches high, is similar in width to the speed bump, and extended all the way to the curb CP 16 Dec. of Tom Slack. The extension being made of asphalt, a paving material appeared to be just part of the road surface. CP 16, 22. Notably, this extension was considerably smaller than the gravel pit cited in *Tennyson v. Plum Creek Timber Co.*, 73 Wn.App. 550, 872 P.2d 524 (1994); and the railroad tracks cited in *Gaeta v. Seattle City Light*, 54 Wn.App.603, 774 P.2d 1255 (1989) or an earth mover equipment such as in *Van Dinter v. Kennewick*, 121 Wn.2d 38, 846 P.2d 522 (1993), all are items which by their very nature and size announced their presence and dangers. That was not the case here as the speed bump extension was a small, hidden, and unpainted hazard.

The issue of latency in this case cannot be determined by summary judgment. It is a contested issue of fact. Only when there is no genuine issue as to any material fact, is a moving party entitled to summary judgment as a matter of law. CR 56; *Christen v. Lee*, 113 Wn.2d 479, 488, 780 P.2d 1307 (1989). "In deciding a motion for summary judgment, the court must construe all the facts and reasonable inferences in favor of the nonmoving party; in this case Mr. Jewels. The motion should be granted only if, from all the evidence, reasonable persons could reach but

one conclusion.” *Snohomish County v. Anderson*, 124 Wn.2d 834, 843 (1994). In light that a contemporary document by the Defendant states that the dangerous hidden extension must be painted to be made visible, is a strong indicator that this is an issue of fact in favor of appellant and cannot be determined at summary judgment. CP 76

3. The Conditions created by Defendant were Deceptive and the Obstruction itself was Latent

The first speed bump a cyclist encountered upon entering the southern end of Cornwall Park, is approximately four inches high. Mr. Jewels traveled over it and it jarred him so badly, that he almost lost his water bottle. CP 91 Jewels Dec. ¶ 7. He described it was like hitting a curb. CP 91 Jewels Dec. ¶ 7. He also noted gaps on either side of that first speed bump as what is customary. CP 91 and 95 Jewel Dec. Speed bumps are obstructions across the public right of way and are generally considered hazardous and must have warnings of their presence by being painted safety yellow as required by MUTCD. The gaps in speed bumps are either created so that bicyclists can travel safely through them or if the gaps are created for purposes of water diversion, the gaps are very frequently used by bicyclist to cross the obstructions of speed bumps safely. CP 92 and 107-108 See Rutherford Dec., Exhibit A, page 4-5 and Couch Dec. pg. 2-3. Speed bumps are particularly hazardous to bicyclists. CP 81 See Rutherford Declaration Exhibit C Engineer Steven’s report.

As appellant Steven Jewels approached the second speed bump he did not want to make the same mistake going over it so it looked for an access gap as there had been in the first speed bump. There appeared to be gap to his right near the curb. He looked, but particularly under the shade on that sunny day, the unpainted water diverter was dark and appeared to be part of a flat pavement. 92 Jewels Dec. ¶ 9. Mr. Jewels was deceived into believing that there was no obstruction to his travel between the speed bump and the curb. 92 and 107-108 Jewels Dec. ¶ 9 and 15; Couch Declaration pg. 2-3. The fact that the speed bumps were painted yellow and the extension was not, further support plaintiff's contention that the hazard created by defendant was latent and not easily seen. Respondent's statement against interest in fact supports that the dangerous hidden extension could not be seen. The work order stated unequivocally "Please paint entire speed bump and make it visible." CP 76. If this dangerous extension was in fact obvious to the traveling wheeled public there would have been no need for the city to subsequently paint the extension; but the City did in fact paint for specific purpose to "make it visible" thus emphasizing that the dangerous extension could not be seen.

The yellow paint on the rest of the speed bump attracted the eyes of a viewer to it and away from the unpainted extension, further obstructing the hazard. Just because an object is exposed to the open air, does not make it obvious. There were taller objects on either side of the water diverter that obscured it from sight, the curb and the speed bump.

The question is whether the injury-causing condition - not the specific risk it poses - is readily apparent to the ordinary recreational user." *Ravenscroft II*, 136 Wn.2d 911, 925,969 P.2d 71 (1998). The issue of whether or not a condition is latent is generally one for a jury. *Cultee v. City of Tacoma*, 95 Wn.App. 505, 977 P.2d 15 (Div. 2 1998).

I. City of Bellingham Breached its Duty to the Traveling Public and Seeks to Hide behind the Recreational Land Use Statute

A governmental entity has a duty to eliminate an inherently dangerous or misleading condition as part of its overarching duty to provide reasonably safe roads for the people of this state to travel upon. *Owen v. Burlington N. & Santa Fe R.R. Co.*, 153 Wn.2d 780, 788, 108 P.3d 1220 (2005) citing *Keller v. City of Spokane*, 146 Wn.2d 237, 249, 44 P.3d 845 (2002). In this case, a bicyclist, Steven Jewels was misled by the deceptive condition of the hidden speed bump extension that it was safe for him to travel through what appeared to be a gap between the speed bump and the curb. CP 91-92 Notably only a few yards away, on Indiana Street, the City of Bellingham correctly installed speed humps that are compliant with MUTCD standards while in Cornwall Park, speed bumps were installed contrary to known minimum safety standards. CP 141. Motion for Consideration Exhibit A. Additionally, contrary to the other speed bumps in this park which had gaps to allow bicyclists and motorcyclists to safely travel through, this particular speed bump did not have such a gap, but rather had, without any warning of any sort, an obstruction to catch bicyclists like Steven Jewels unaware. Nonetheless

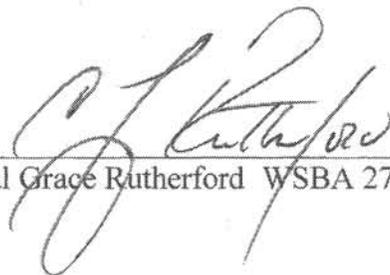
both Indiana Street and Cornwall Park need to comply with minimum safety standards as required by federal and state law. Both Indiana Street and Cornwall Park are open to public travel and need to meet national standards. 2003 MUTCD §1A.07, page 1A-2. MUTCD requires that within two years that non-compliant devices on existing highways and bikeways be brought into compliance as part of the systematic upgrading of substandard traffic control devices. 2003 MUTCD Page I-3. The only difference between the two pavements of Indiana Street and Cornwall Park, is the Recreational Land Use Statute, which the City of Bellingham is using to hide behind and avoid the safety standards that also apply to the City's roadways in Cornwall Park.

IV. CONCLUSION

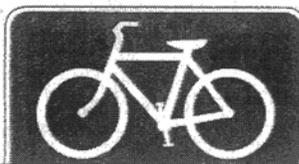
The Respondent via its own documents admits that the extension to the speed bump was **NOT VISIBLE**. This hazard was created by respondent just months prior to Mr. Jewels' encounter and is contrary to federal and state traffic control standards. Knowledge is imputed when a landowner creates an artificial hazard which by its very nature causes injury. The respondent had installed the speed bumps which are not standard practices by both the federal and state regulations. Respondent then failed to completely paint the speed bump and its extension or provide any warning to traveling bicyclists as required by state and federal law. The hidden unpainted speed bump extension to the speed bump was located off to the side and was lower than the painted part of

the speed bump and curb which made it appear to be level with surrounding road, providing a safe gap for a traveling bicyclist to pass through it. Additionally, the shady road and the curve hid the dangerous speed bump extension from sight of traveling bicyclists. It is the traveling cyclists who are the intended users of this roadway and non-standard traffic control device of the speed bumps. This unpainted speed bump extension fulfills all the criteria for falling under the exception of the Recreational Land Use State RCW 4.24.210(4)(a). This was a known, dangerous, artificial, latent, condition created by defendant contrary to standard state and federal practices. We ask that this case be remanded for trial.

DATED this 29th day of March, 2013.


Crystal Grace Rutherford WSBA 27202

APPENDIX A

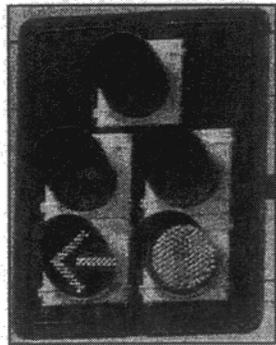
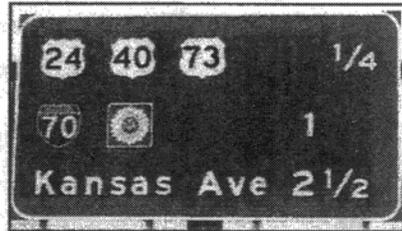
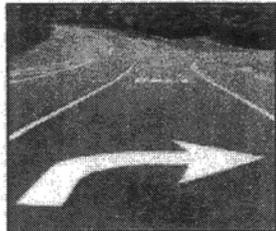


Manual on Uniform Traffic Control Devices

for Streets and Highways

2003 EDITION

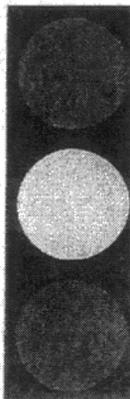
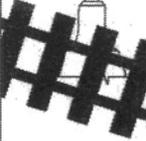
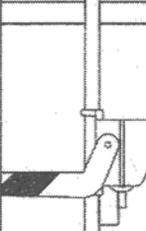
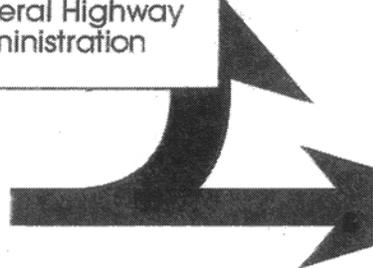
Including Revision 1 dated November 2004



U.S. Department of Transportation
Federal Highway Administration



SCHOOL



MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES

INTRODUCTION

Standard:

Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or bikeway by authority of a public agency having jurisdiction.

The Manual on Uniform Traffic Control Devices (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F.

Any traffic control device design or application provision contained in this Manual shall be considered to be in the public domain. Traffic control devices contained in this Manual shall not be protected by a patent, trademark, or copyright, except for the Interstate Shield and any other items owned by FHWA.

Support:

The need for uniform standards was recognized long ago. The American Association of State Highway Officials (AASHO), now known as the American Association of State Highway and Transportation Officials (AASHTO), published a manual for rural highways in 1927, and the National Conference on Street and Highway Safety (NCSHS) published a manual for urban streets in 1930. In the early years, the necessity for unification of the standards applicable to the different classes of road and street systems was obvious. To meet this need, a joint committee of AASHO and NCSHS developed and published the original edition of this Manual on Uniform Traffic Control Devices (MUTCD) in 1935. That committee, now called the National Committee on Uniform Traffic Control Devices (NCUTCD), though changed from time to time in name, organization, and personnel, has been in continuous existence and has contributed to periodic revisions of this Manual. The FHWA has administered the MUTCD since the 1971 edition. The FHWA and its predecessor organizations have participated in the development and publishing of the previous editions. There were eight previous editions of the MUTCD, and several of those editions were revised one or more times. Table I-1 traces the evolution of the MUTCD, including the two manuals developed by AASHO and NCSHS.

Standard:

The U.S. Secretary of Transportation, under authority granted by the Highway Safety Act of 1966, decreed that traffic control devices on all streets and highways open to public travel in accordance with 23 U.S.C. 109(d) and 402(a) in each State shall be in substantial conformance with the Standards issued or endorsed by the FHWA.

Support:

23 CFR 655.603 adopts the MUTCD as the national standard for any street, highway, or bicycle trail open to public travel in accordance with 23 U.S.C. 109(d) and 402(a). The "Uniform Vehicle Code (UVC)" is one of the publications referenced in the MUTCD. The UVC contains a model set of motor vehicle codes and traffic laws for use throughout the United States. The States are encouraged to adopt Section 15-116 of the UVC, which states that, "No person shall install or maintain in any area of private property used by the public any sign, signal, marking, or other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104."

The Standard, Guidance, Option, and Support material described in this edition of the MUTCD provide the transportation professional with the information needed to make appropriate decisions regarding the use of traffic control devices on streets and highways. The material in this edition is organized to better differentiate between Standards that must be satisfied for the particular circumstances of a situation, Guidances that should be followed for the particular circumstances of a situation, and Options that may be applicable for the particular circumstances of a situation.

Throughout this Manual the headings Standard, Guidance, Option, and Support are used to classify the nature of the text that follows. Figures, tables, and illustrations supplement the text and might constitute a Standard, Guidance, Option, or Support. The user needs to refer to the appropriate text to classify the nature of the figure, table, or illustration.

Standard:

When used in this Manual, the text headings shall be defined as follows:

1. **Standard**—a statement of required, mandatory, or specifically prohibitive practice regarding a traffic control device. All standards are labeled, and the text appears in bold type. The verb shall be typically used. Standards are sometimes modified by Options.

Table I-1. Evolution of the MUTCD

Year	Name	Month / Year Revised
1927	Manual and Specifications for the Manufacture, Display, and Erection of U.S. Standard Road Markers and Signs (for rural roads)	4/29, 12/31
1930	Manual on Street Traffic Signs, Signals, and Markings (for urban streets)	No revisions
1935	Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)	2/39
1942	Manual on Uniform Traffic Control Devices for Streets and Highways — War Emergency Edition	No revisions
1948	Manual on Uniform Traffic Control Devices for Streets and Highways	9/54
1961	Manual on Uniform Traffic Control Devices for Streets and Highways	No revisions
1971	Manual on Uniform Traffic Control Devices for Streets and Highways	11/71, 4/72, 3/73, 10/73, 6/74, 6/75, 9/76, 12/77
1978	Manual on Uniform Traffic Control Devices for Streets and Highways	12/79, 12/83, 9/84, 3/86
1988	Manual on Uniform Traffic Control Devices for Streets and Highways	1/90, 3/92, 9/93, 11/94, 12/96, 6/98, 1/00
2000	Manual on Uniform Traffic Control Devices for Streets and Highways — Millennium Edition	7/02
2003	Manual on Uniform Traffic Control Devices for Streets and Highways	

2. **Guidance**—a statement of recommended, but not mandatory, practice in typical situations, with deviations allowed if engineering judgment or engineering study indicates the deviation to be appropriate. All Guidance statements are labeled, and the text appears in unbold type. The verb *should* is typically used. Guidance statements are sometimes modified by Options.
3. **Option**—a statement of practice that is a permissive condition and carries no requirement or recommendation. Options may contain allowable modifications to a Standard or Guidance. All Option statements are labeled, and the text appears in unbold type. The verb *may* is typically used.
4. **Support**—an informational statement that does not convey any degree of mandate, recommendation, authorization, prohibition, or enforceable condition. Support statements are labeled, and the text appears in unbold type. The verbs *shall*, *should*, and *may* are not used in Support statements.

Support:

Throughout this Manual all dimensions and distances are provided in the International System of Units, a modernized version of the Metric system, and their English equivalent units are shown in parentheses.

Guidance:

Before laying out distances or determining sign sizes, the public agency should decide whether to use the International System of Units (Metric) or the English equivalent units. The chosen units should be specified on plan drawings. The chosen unit of measurement should be made known to those responsible for designing, installing, or maintaining traffic control devices.

Except when a specific numeral is required by the text of a Section of this Manual, numerals shown on the sign images in the figures that specify quantities such as times, distances, speed limits, and weights should be regarded as examples only. When installing any of these signs, the numerals should be appropriately altered to fit the specific signing situation.

Support:

The following information will be useful when reference is being made to a specific portion of text in this Manual.

There are ten Parts in this Manual and each Part is comprised of one or more Chapters. Each Chapter is comprised of one or more Sections. Parts are given a numerical identification, such as Part 2-Signs. Chapters are identified by the Part number and a letter, such as Chapter 2B-Regulatory Signs. Sections are identified by the Chapter number and letter followed by a decimal point and a number, such as Section 2B.03-Size of Regulatory Signs.

Each Section is comprised of one or more paragraphs. The paragraphs are indented but are not identified by a number or letter. Paragraphs are counted from the beginning of each Section without regard to the intervening text headings (Standard, Guidance, Option, or Support). Some paragraphs have lettered or numbered items. As an example of how to cite this Manual, the phrase "Not less than 12 m (40 ft) beyond the stop line" that appears on Page 4D-12 of this Manual would be referenced in writing as "Section 4D.15, P7, D1(a)," and would be verbally referenced as "Item D1(a) of Paragraph 7 of Section 4D.15."

Standard:

In accordance with 23 CFR 655.603(b)(1), States or other Federal agencies that have their own MUTCDs or Supplements shall revise these MUTCDs or Supplements to be in substantial conformance with changes to the National MUTCD within 2 years of issuance of the changes. Unless a particular device is no longer serviceable, non-compliant devices on existing highways and bikeways shall be brought into compliance with the current edition of the National MUTCD as part of the systematic upgrading of substandard traffic control devices (and installation of new required traffic control devices) required pursuant to the Highway Safety Program, 23 U.S.C. § 402(a). In cases involving Federal-aid projects for new highway or bikeway construction or reconstruction, the traffic control devices installed (temporary or permanent) shall be in conformance with the most recent edition of the National MUTCD before that highway is opened or re-opened to the public for unrestricted travel [23 CFR 655.603(d)(2)]. The FHWA has the authority to establish other target compliance dates for implementation of particular changes to the MUTCD [23 CFR 655.603(d)(4)]. These target compliance dates established by the FHWA shall be as follows:

Section 2A.19 Lateral Offset—crashworthiness of sign supports—January 17, 2013 for roads with posted speed limit of 80 km/h (50 mph) or higher.

Section 2B.03 Size of Regulatory Signs—increased sign sizes and other changes to Table 2B-1—10 years from the effective date of the Final Rule for the 2003 MUTCD.

Section 2B.04 STOP Sign (R1-1)—4-WAY plaque requirement—January 17, 2004.

Section 2B.06 STOP Sign Placement—signs mounted on back of STOP sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.

- Section 2B.09 YIELD Sign Applications—changes in YIELD sign application criteria from the 1988 MUTCD—January 17, 2011.
- Section 2B.10 YIELD Sign Placement—signs mounted on back of YIELD sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.11 Yield Here to Pedestrians Signs (R1-5, R1-5a)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.13 Speed Limit Sign (R2-1)—color of changeable message legend of YOUR SPEED—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.25 Reversible Lane Control Signs (R3-9d, R3-9f through R3-9i)—removal of R3-9c and R3-9e signs—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.26 Preferential Only Lane Signs (R3-10 through R3-15)—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.27 Preferential Only Lanes for High-Occupancy Vehicles (HOVs)—new section in Millennium Edition—January 17, 2007.
- Section 2B.28 Preferential Only Lane Sign Applications and Placement—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.37 ONE WAY Signs (R6-1, R6-2)—placement requirement at intersecting alleys—January 17, 2008.
- Section 2B.46 Photo Enforced Signs (R10-18, R10-19)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2B.52 Hazardous Material Signs (R14-2, R14-3)—change in sign legend—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.04 Size of Warning Signs—increased sizes of W4-1, W5-2, W6-3, and W12-1 signs—January 17, 2008.
- Section 2C.04 Size of Warning Signs—sizes of W1 Series Arrows signs, W7 Series truck runaway signs, W12-2p low clearance signs, and W10-1 advance grade crossing sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.11 Truck Rollover Warning Signs (W1-13, W1-13a)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.16 NARROW BRIDGE Sign (W5-2)—elimination of symbol sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.25 PAVEMENT ENDS Sign (W8-3)—removal of symbol sign—January 17, 2011.
- Section 2C.26 Shoulder Signs (W8-4, W8-9, and W8-9a)—removal of symbol signs—January 17, 2011.
- Section 2C.30 Speed Reduction Signs (W3-5, W3-5a)—removal of R2-5 Series Reduced Speed Ahead signs and use of W3-5 or W3-5a warning signs instead—15 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.31 Merge Signs (W4-1, W4-5)—Entering Roadway Merge sign (W4-1a)—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.32 Added Lane Signs (W4-3, W4-6)—Entering Roadway Added Lane sign (W4-3a)—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.33 Lane Ends Signs (W4-2, W9-1, W9-2)—new design of W4-2 sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.34 Two-Way Traffic Sign (W6-3)—transition from one-way street—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.37 Intersection Warning Signs (W2-1 through W2-6)—new design of Circular Intersection (W2-6) sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.40 Vehicular Traffic Signs (W8-6, W11-1, W11-5, W11-5a, W11-6, W11-8, W11-10, W11-11, W11-12, W11-14)—new symbol signs W11-1, W11-5, W11-5a, W11-6, W11-11, and W11-14—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2C.41 Nonvehicular Signs (W11-2, W11-3, W11-4, W11-7, W11-9)—elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing—January 17, 2011.
- Section 2C.53 PHOTO ENFORCED Plaque (W16-10)—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD.

- Section 2D.38 Street Name Sign (D3-1)—symbol sizes, 150 mm (6 in) letter sizes for lettering on ground-mounted Street Name signs on roads that are not multi-lane streets with speed limits greater than 60 km/h (40 mph), other new provisions of Millennium Edition—January 9, 2012.
- Section 2D.38 Street Name Sign (D3-1)—letter sizes on ground-mounted signs on multi-lane streets with speed limits greater than 60 km/h (40 mph) and letter sizes on overhead-mounted signs—15 years from the effective date of the Final Rule of the 2003 MUTCD.
- Section 2D.39 Advance Street Name Signs (D3-2)—new section in 2000 MUTCD and revisions in 2003 MUTCD—15 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2D.45 General Service Signs (D9 Series)—Traveler Info Call 511 (D12-5) sign, Channel 9 Monitored (D12-3) sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2D.46 Reference Location Signs (D10-1 through D10-3) and Intermediate Reference Location Signs (D10-1a through D10-3a)—location and spacing of Reference Location signs and design of Intermediate Reference Location signs—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2E.28 Interchange Exit Numbering—size of exit number plaque—January 17, 2008.
- Section 2E.28 Interchange Exit Numbering—LEFT on exit number plaques for left exits—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2E.30 Advance Guide Signs—advance placement distance—January 17, 2008.
- Section 2E.54 Reference Location Signs and Enhanced Reference Location Signs (D10-4, D10-5)—design of Enhanced Reference Location signs and Intermediate Enhanced Reference Location signs—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2E.59 Preferential Only Lane Signs—new section in 2003 Edition—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 2E.05 Size of Lettering—minimum height of letters and numerals on specific service signs—January 17, 2011.
- Section 2I.03 EVACUATION ROUTE Sign (EM-1)—new design and size of EM-1 sign—15 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 3B.01 Yellow Centerline Pavement Markings and Warrants—new section in Millennium Edition—January 3, 2003.
- Section 3B.03 Other Yellow Longitudinal Pavement Markings—spacing requirements for pavement marking arrows in two-way left-turn lanes—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 3B.07 Warrants for Use of Edge Lines—new section in Millennium Edition—January 3, 2003.
- Section 3B.17 Crosswalk Markings—gap between transverse lines of a crosswalk—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 3B.19 Pavement Word and Symbol Markings—typical spacing of lane-use arrows in two-way left-turn lanes shown in Figure 3B-7—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 3C.01 Object Marker Design and Placement Height—width of stripes on Type 3 striped marker—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 4D.01 General—location of signalized midblock crosswalks—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 4D.05 Application of Steady Signal Indications—Item B.4 in STANDARD—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 4D.12 Flashing Operation of Traffic Control Signals—duration of steady red clearance interval in change from red-red flashing mode to steady (stop-and-go) mode—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 4E.06 Accessible Pedestrian Signals—new section in Millennium Edition—January 17, 2005.
- Section 4E.07 Countdown Pedestrian Signals—new section—10 years from the effective date of the Final Rule for the 2003 MUTCD for countdown pedestrian signal hardware; 3 years from the effective date of the Final Rule for the 2003 MUTCD for operational requirements of countdown pedestrian signals.
- Section 4E.09 Accessible Pedestrian Signal Detectors—new section in Millennium Edition—January 17, 2005.
- Section 4E.10 Pedestrian Intervals and Signal Phases—pedestrian clearance time sufficient to travel to far side of the traveled way—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 5C.05 NARROW BRIDGE Sign (W5-2)—elimination of symbol sign—10 years from the effective date of the Final Rule for the 2003 MUTCD.

- Section 6D.01 Pedestrian Considerations—all new provisions for pedestrian accessibility—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 6D.02 Accessibility Considerations—5 years from the effective date of the Final Rule for the MUTCD.
- Section 6D.03 Worker Safety Considerations—high-visibility apparel requirements—3 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 6E.02 High-Visibility Safety Apparel—high-visibility apparel requirements for flaggers—3 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 6F.03 Sign Placement—crashworthiness of sign supports—January 17, 2005.
- Section 6F.58 Channelizing Devices—crashworthiness—January 17, 2005.
- Section 6F.59 Cones—width of retroreflective stripes—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 6F.63 Type I, II, or III Barricades—crashworthiness—January 17, 2005.
- Section 6F.66 Longitudinal Channelizing Barricades—crashworthiness—January 17, 2005.
- Section 6F.82 Crash Cushions—crashworthiness—January 17, 2005.
- Section 7B.08 School Advance Warning Assembly (S1-1 with Supplemental Plaque)—use of AHEAD plaque (W16-9p) or distance plaque (W16-2 or W16-2a)—January 17, 2011.
- Section 7B.09 School Crosswalk Warning Assembly (S1-1 with Diagonal Arrow)—elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7)—January 17, 2011.
- Section 7B.12 Reduced Speed School Zone Ahead Sign (S4-5, S4-5a)—15 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 7E.04 Uniform of Adult Crossing Guards and Student Patrols—requirement for high-visibility apparel for adult crossing guards—5 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 8B.03 Highway-Rail Grade Crossing (Crossbuck) Sign (R15-1) and Number of Tracks Sign (R15-2)—retroreflective strip on crossbuck support—January 17, 2011.
- Section 8B.04 Highway-Rail Grade Crossing Advance Warning Signs (W10 Series)—removal of existing W10-6 series signs—January 17, 2006.
- Section 8D.07 Traffic Control Signals at or Near Highway-Rail Grade Crossings—pre-signals—10 years from the effective date of the Final Rule for the 2003 MUTCD.
- Section 9B.04 Bicycle Lane Signs (R3-17, R3-17a, R3-17b)—deletion of preferential lane symbol (diamond) for bicycle lane signs—January 17, 2006.
- Section 9B.17 Bicycle Warning Sign (W11-1)—elimination of crosswalk lines from crossing signs and use of diagonal downward pointing arrow supplemental plaque (W16-7) if at the crossing—January 17, 2011.
- Chapter 9C Markings—deletion of preferential lane symbol (diamond) for bicycle pavement markings—January 17, 2007.
- Part 10 Traffic Controls for Highway-Light Rail Transit Grade Crossings—automatic gates, flashing-light signals, and blank-out signs—January 17, 2011.
- Section 10C.15 Highway-Rail Grade Crossing Advance Warning Signs (W10 Series)—removal of existing W10-6 series signs—January 17, 2006.

Option:

In order for maintenance personnel to understand what to do when replacing a damaged non-compliant traffic control device, agencies may establish a policy regarding whether to replace the device in kind or to replace it with a compliant device.

Support:

Often it is desirable to upgrade to a compliant device at the time of this maintenance of a damaged device. However, it might be appropriate to replace the damaged non-compliant device in kind at the time of this maintenance activity if engineering judgment indicates that:

- A. One compliant device in the midst of a series of adjacent non-compliant devices could potentially be confusing to road users; and/or
- B. The anticipated schedule for replacement of the whole series of non-compliant devices will result in achieving timely compliance with the MUTCD.

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES**TABLE OF CONTENTS****INTRODUCTION****PART 1. GENERAL**

Chapter 1A. General

PART 2. SIGNS

Chapter 2A. General

Chapter 2B. Regulatory Signs

Chapter 2C. Warning Signs

Chapter 2D. Guide Signs — Conventional Roads

Chapter 2E. Guide Signs — Freeways and Expressways

Chapter 2F. Specific Service Signs

Chapter 2G. Tourist-Oriented Directional Signs

Chapter 2H. Recreational and Cultural Interest Area Signs

Chapter 2I. Emergency Management Signing

PART 3. MARKINGS

Chapter 3A. General

Chapter 3B. Pavement and Curb Markings

Chapter 3C. Object Markers

Chapter 3D. Delineators

Chapter 3E. Colored Pavements

Chapter 3F. Barricades and Channelizing Devices

Chapter 3G. Islands

PART 4. HIGHWAY TRAFFIC SIGNALS

Chapter 4A. General

Chapter 4B. Traffic Control Signals — General

Chapter 4C. Traffic Control Signal Needs Studies

Chapter 4D. Traffic Control Signal Features

Chapter 4E. Pedestrian Control Features

Chapter 4F. Traffic Control Signals for Emergency Vehicle Access

Chapter 4G. Traffic Control Signals for One-Lane, Two-Way Facilities

Chapter 4H. Traffic Control Signals for Freeway Entrance Ramps

Chapter 4I. Traffic Control for Movable Bridges

Chapter 4J. Lane-Use Control Signals

Chapter 4K. Flashing Beacons

Chapter 4L. In-Roadway Lights

PART 5. TRAFFIC CONTROL DEVICES FOR LOW-VOLUME ROADS

Chapter 5A. General

Chapter 5B. Regulatory Signs

Chapter 5C. Warning Signs

Chapter 5D. Guide Signs

Chapter 5E. Markings

Chapter 5F. Traffic Control for Highway-Rail Grade Crossings

Chapter 5G. Temporary Traffic Control Zones

PART 6. TEMPORARY TRAFFIC CONTROL

- Chapter 6A. General
- Chapter 6B. Fundamental Principles
- Chapter 6C. Temporary Traffic Control Elements
- Chapter 6D. Pedestrian and Worker Safety
- Chapter 6E. Flagger Control
- Chapter 6F. Temporary Traffic Control Zone Devices
- Chapter 6G. Temporary Traffic Control Zone Activities
- Chapter 6H. Typical Applications
- Chapter 6I. Control of Traffic Through Traffic Incident Management Areas

PART 7. TRAFFIC CONTROLS FOR SCHOOL AREAS

- Chapter 7A. General
- Chapter 7B. Signs
- Chapter 7C. Markings
- Chapter 7D. Signals
- Chapter 7E. Crossing Supervision
- Chapter 7F. Grade-Separated Crossings

PART 8. TRAFFIC CONTROLS FOR HIGHWAY-RAIL GRADE CROSSINGS

- Chapter 8A. General
- Chapter 8B. Signs and Markings
- Chapter 8C. Illumination
- Chapter 8D. Flashing-Light Signals, Gates, and Traffic Control Signals

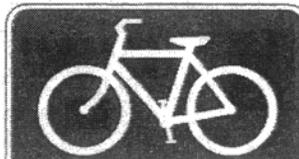
PART 9. TRAFFIC CONTROLS FOR BICYCLE FACILITIES

- Chapter 9A. General
- Chapter 9B. Signs
- Chapter 9C. Markings
- Chapter 9D. Signals

PART 10. TRAFFIC CONTROLS FOR HIGHWAY-LIGHT RAIL TRANSIT GRADE CROSSINGS

- Chapter 10A. General
- Chapter 10B. Highway-Light Rail Transit Grade Crossing Control Systems
- Chapter 10C. Signs, Illumination, and Markings
- Chapter 10D. Highway-Light Rail Transit Active Traffic Control Grade Crossing Systems

APPENDIX A1. CONGRESSIONAL LEGISLATION

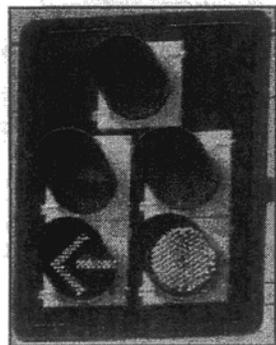
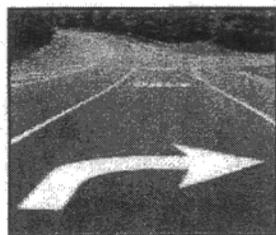


Manual on Uniform Traffic Control Devices

for Streets and Highways

2003 EDITION

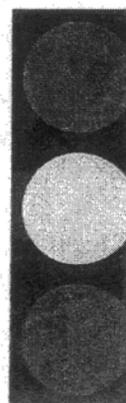
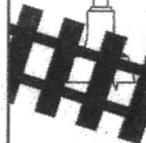
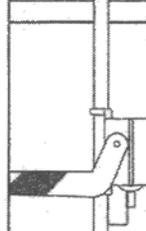
Part 1 General



U.S. Department of Transportation
Federal Highway Administration



SCHOOL



CHAPTER 1A. GENERAL

Section 1A.01 Purpose of Traffic Control Devices

Support:

The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety and efficiency by providing for the orderly movement of all road users on streets and highways throughout the Nation.

Traffic control devices notify road users of regulations and provide warning and guidance needed for the reasonably safe, uniform, and efficient operation of all elements of the traffic stream.

Standard:

Traffic control devices or their supports shall not bear any advertising message or any other message that is not related to traffic control.

Support:

Tourist-oriented directional signs and Specific Service signs are not considered advertising; rather, they are classified as motorist service signs.

Section 1A.02 Principles of Traffic Control Devices

Support:

This Manual contains the basic principles that govern the design and use of traffic control devices for all streets and highways open to public travel regardless of type or class or the public agency having jurisdiction. This Manual's text specifies the restriction on the use of a device if it is intended for limited application or for a specific system. It is important that these principles be given primary consideration in the selection and application of each device.

Guidance:

To be effective, a traffic control device should meet five basic requirements:

- A. Fulfill a need;
- B. Command attention;
- C. Convey a clear, simple meaning;
- D. Command respect from road users; and
- E. Give adequate time for proper response.

Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered in order to maximize the ability of a traffic control device to meet the five requirements listed in the previous paragraph. Vehicle speed should be carefully considered as an element that governs the design, operation, placement, and location of various traffic control devices.

Support:

The definition of the word "speed" varies depending on its use. The definitions of specific speed terms are contained in Section 1A.13.

Guidance:

The actions required of road users to obey regulatory devices should be specified by State statute, or in cases not covered by State statute, by local ordinance or resolution consistent with the "Uniform Vehicle Code."

The proper use of traffic control devices should provide the reasonable and prudent road user with the information necessary to reasonably safely and lawfully use the streets, highways, pedestrian facilities, and bikeways.

Support:

Uniformity of the meaning of traffic control devices is vital to their effectiveness. The meanings ascribed to devices in this Manual are in general accord with the publications mentioned in Section 1A.11.

Section 1A.03 Design of Traffic Control Devices

Guidance:

Devices should be designed so that features such as size, shape, color, composition, lighting or retroreflection, and contrast are combined to draw attention to the devices; that size, shape, color, and simplicity of message combine to produce a clear meaning; that legibility and size combine with placement to permit adequate time for response; and that uniformity, size, legibility, and reasonableness of the message combine to command respect.

Standard:

All symbols shall be unmistakably similar to or mirror images of the adopted symbol signs, all of which are shown in the "Standard Highway Signs" book (see Section 1A.11). Symbols and colors shall not be modified unless otherwise stated herein. All symbols and colors for signs not shown in the "Standard Highway Signs" book shall follow the procedures for experimentation and change described in Section 1A.10.

Guidance:

Aspects of a device's design should be modified only if there is a demonstrated need.

Support:

An example of modifying a device's design would be to modify the Side Road (W2-2) sign to show a second offset intersecting road.

Option:

Highway agencies may develop word message signs to notify road users of special regulations or to warn road users of a situation that might not be readily apparent. Unlike symbol signs and colors, new word message signs may be used without the need for experimentation. With the exception of symbols and colors, minor modifications in the specific design elements of a device may be made provided the essential appearance characteristics are preserved. Although the standard design of symbol signs cannot be modified, it may be appropriate to change the orientation of the symbol to better reflect the direction of travel.

Section 1A.04 Placement and Operation of Traffic Control Devices**Guidance:**

Placement of a traffic control device should be within the road user's view so that adequate visibility is provided. To aid in conveying the proper meaning, the traffic control device should be appropriately positioned with respect to the location, object, or situation to which it applies. The location and legibility of the traffic control device should be such that a road user has adequate time to make the proper response in both day and night conditions.

Traffic control devices should be placed and operated in a uniform and consistent manner.

Unnecessary traffic control devices should be removed. The fact that a device is in good physical condition should not be a basis for deferring needed removal or change.

Section 1A.05 Maintenance of Traffic Control Devices**Guidance:**

Functional maintenance of traffic control devices should be used to determine if certain devices need to be changed to meet current traffic conditions.

Physical maintenance of traffic control devices should be performed to retain the legibility and visibility of the device, and to retain the proper functioning of the device.

Support:

Clean, legible, properly mounted devices in good working condition command the respect of road users.

Section 1A.06 Uniformity of Traffic Control Devices**Support:**

Uniformity of devices simplifies the task of the road user because it aids in recognition and understanding, thereby reducing perception/reaction time. Uniformity assists road users, law enforcement officers, and traffic courts by giving everyone the same interpretation. Uniformity assists public highway officials through efficiency in manufacture, installation, maintenance, and administration. Uniformity means treating similar situations in a similar way. The use of uniform traffic control devices does not, in itself, constitute uniformity. A standard device used where it is not appropriate is as objectionable as a nonstandard device; in fact, this might be worse, because such misuse might result in disrespect at those locations where the device is needed and appropriate.

Section 1A.07 Responsibility for Traffic Control Devices**Standard:**

The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency or the official having jurisdiction. 23 CFR 655.603 adopts the Manual on Uniform Traffic Control Devices as the national standard for all traffic control devices installed on any street, highway, or bicycle trail open to public travel. When a State or other Federal agency

manual or supplement is required, that manual or supplement shall be in substantial conformance with the national Manual on Uniform Traffic Control Devices.

23 CFR 655.603 also states that traffic control devices on all streets and highways open to public travel in each State shall be in substantial conformance with standards issued or endorsed by the Federal Highway Administrator.

Support:

The "Uniform Vehicle Code" (see Section 1A.11) has the following provision in Section 15-104 for the adoption of a uniform Manual:

"(a)The [State Highway Agency] shall adopt a manual and specification for a uniform system of traffic control devices consistent with the provisions of this code for use upon highways within this State. Such uniform system shall correlate with and so far as possible conform to the system set forth in the most recent edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, and other standards issued or endorsed by the Federal Highway Administrator."

"(b) The Manual adopted pursuant to subsection (a) shall have the force and effect of law."

Additionally, States are encouraged to adopt Section 15-116 of the "Uniform Vehicle Code," which states that, "No person shall install or maintain in any area of private property used by the public any sign, signal, marking or other device intended to regulate, warn, or guide traffic unless it conforms with the State manual and specifications adopted under Section 15-104."

Section 1A.08 Authority for Placement of Traffic Control Devices

Standard:

Traffic control devices, advertisements, announcements, and other signs or messages within the highway right-of-way shall be placed only as authorized by a public authority or the official having jurisdiction, for the purpose of regulating, warning, or guiding traffic.

When the public agency or the official having jurisdiction over a street or highway has granted proper authority, others such as contractors and public utility companies shall be permitted to install temporary traffic control devices in temporary traffic control zones. Such traffic control devices shall conform with the Standards of this Manual.

Guidance:

Any unauthorized traffic control device or other sign or message placed on the highway right-of-way by a private organization or individual constitutes a public nuisance and should be removed. All unofficial or nonessential traffic control devices, signs, or messages should be removed.

Standard:

All regulatory traffic control devices shall be supported by laws, ordinances, or regulations.

Support:

Provisions of this Manual are based upon the concept that effective traffic control depends upon both appropriate application of the devices and reasonable enforcement of the regulations.

Section 1A.09 Engineering Study and Engineering Judgment

Standard:

This Manual describes the application of traffic control devices, but shall not be a legal requirement for their installation.

Guidance:

The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment. Thus, while this Manual provides Standards, Guidance, and Options for design and application of traffic control devices, this Manual should not be considered a substitute for engineering judgment.

Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of the roads and streets that the devices complement. Jurisdictions with responsibility for traffic control that do not have engineers on their staffs should seek engineering assistance from others, such as the State transportation agency, their County, a nearby large City, or a traffic engineering consultant.

Section 1A.10 Interpretations, Experimentations, Changes, and Interim Approvals

Standard:

Design, application, and placement of traffic control devices other than those adopted in this Manual shall be prohibited unless the provisions of this Section are followed.

Support:

Continuing advances in technology will produce changes in the highway, vehicle, and road user proficiency; therefore, portions of the system of traffic control devices in this Manual will require updating. In addition, unique situations often arise for device applications that might require interpretation or clarification of this Manual. It is important to have a procedure for recognizing these developments and for introducing new ideas and modifications into the system.

Standard:

Requests for any interpretation, permission to experiment, interim approval, or change shall be sent to the Federal Highway Administration (FHWA), Office of Transportation Operations, 400 Seventh Street, SW, HOTO, Washington, DC 20590.

Support:

An interpretation includes a consideration of the application and operation of standard traffic control devices, official meanings of standard traffic control devices, or the variations from standard device designs.

Guidance:

Requests for an interpretation of this Manual should contain the following information:

- A. A concise statement of the interpretation being sought;
- B. A description of the condition that provoked the need for an interpretation;
- C. Any illustration that would be helpful to understand the request; and
- D. Any supporting research data that is pertinent to the item to be interpreted.

Support:

Requests to experiment include consideration of field deployment for the purpose of testing or evaluating a new traffic control device, its application or manner of use, or a provision not specifically described in this Manual.

A request for permission to experiment will be considered only when submitted by the public agency or private toll facility responsible for the operation of the road or street on which the experiment is to take place.

A diagram indicating the process for experimenting with traffic control devices is shown in Figure 1A-1.

Guidance:

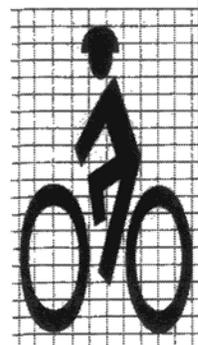
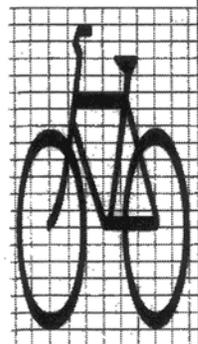
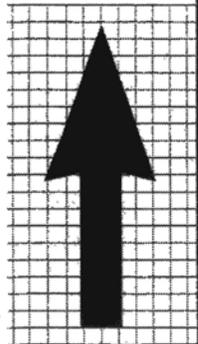
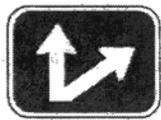
The request for permission to experiment should contain the following:

- A. A statement indicating the nature of the problem.
- B. A description of the proposed change to the traffic control device or application of the traffic control device, how it was developed, the manner in which it deviates from the standard, and how it is expected to be an improvement over existing standards.
- C. Any illustration that would be helpful to understand the traffic control device or use of the traffic control device.
- D. Any supporting data explaining how the traffic control device was developed, if it has been tried, in what ways it was found to be adequate or inadequate, and how this choice of device or application was derived.
- E. A legally binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright. (An example of a traffic control device concept would be countdown pedestrian signals in general. Ordinarily an entire general concept would not be patented or copyrighted, but if it were it would not be acceptable for experimentation unless the patent or copyright owner signs a waiver of rights acceptable to the FHWA. An example of a patented or copyrighted specific device within the general concept of countdown pedestrian signals would be a manufacturer's design for its specific brand of countdown signal, including the design details of the housing or electronics that are unique to that manufacturer's product. As long as the general concept is not patented or copyrighted, it is acceptable for experimentation to incorporate the use of one or more patented devices of one or several manufacturers.)
- F. The time period and location(s) of the experiment.
- G. A detailed research or evaluation plan that must provide for close monitoring of the experimentation, especially in the early stages of its field implementation. The evaluation plan should include before and after studies as well as quantitative data describing the performance of the experimental device.

DEPART
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YIELD TO



Manual on Uniform Traffic Control Devices

for Streets and Highways

2003 EDITION

Part 9 Traffic Controls for Bicycle Facilities



U.S. Department of Transportation
Federal Highway
Administration



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PART 9. TRAFFIC CONTROLS FOR BICYCLE FACILITIES

TABLE OF CONTENTS

	<u>Page</u>
CHAPTER 9A. GENERAL	
Section 9A.01	Requirements for Bicyclist Traffic Control Devices.....9A-1
Section 9A.02	Scope9A-1
Section 9A.03	Definitions Relating to Bicycles.....9A-1
Section 9A.04	Maintenance9A-1
Section 9A.05	Relation to Other Documents9A-1
Section 9A.06	Placement Authority9A-2
Section 9A.07	Meaning of Standard, Guidance, Option, and Support.....9A-2
Section 9A.08	Colors9A-2
CHAPTER 9B. SIGNS	
Section 9B.01	Application and Placement of Signs9B-1
Section 9B.02	Design of Bicycle Signs9B-1
Section 9B.03	STOP and YIELD Signs (R1-1, R1-2)9B-1
Section 9B.04	Bicycle Lane Signs (R3-17, R3-17a, R3-17b)9B-2
Section 9B.05	BEGIN RIGHT TURN LANE YIELD TO BIKES Sign (R4-4)9B-2
Section 9B.06	Bicycle WRONG WAY sign and RIDE WITH TRAFFIC Plaque (R5-1b, R9-3c)9B-6
Section 9B.07	NO MOTOR VEHICLES Sign (R5-3).....9B-6
Section 9B.08	No Bicycles Sign (R5-6)9B-6
Section 9B.09	No Parking BIKE LANE Signs (R7-9, R7-9a)9B-6
Section 9B.10	Bicycle Regulatory Signs (R9-5, R9-6, R10-3)9B-6
Section 9B.11	Shared-Use Path Restriction Sign (R9-7).....9B-6
Section 9B.12	Bicycle Signal Actuation Sign (R10-22).....9B-6
Section 9B.13	Other Regulatory Signs9B-7
Section 9B.14	Turn or Curve Warning Signs (W1 Series)9B-7
Section 9B.15	Intersection Warning Signs (W2 Series)9B-7
Section 9B.16	Bicycle Surface Condition Warning Sign (W8-10).....9B-7
Section 9B.17	Bicycle Warning Sign (W11-1)9B-7
Section 9B.18	Other Bicycle Warning Signs9B-9
Section 9B.19	Bicycle Route Guide Signs (D11-1).....9B-9
Section 9B.20	Bicycle Route Signs (M1-8, M1-9).....9B-10
Section 9B.21	Destination Arrow and Supplemental Plaque Signs for Bicycle Route Signs9B-14
Section 9B.22	Bicycle Parking Area Sign (D4-3).....9B-14
CHAPTER 9C. MARKINGS	
Section 9C.01	Functions of Markings.....9C-1
Section 9C.02	General Principles.....9C-1
Section 9C.03	Marking Patterns and Colors on Shared-Use Paths9C-1
Section 9C.04	Markings for Bicycle Lanes9C-4
Section 9C.05	Bicycle Detector Symbol.....9C-4
Section 9C.06	Pavement Markings for Obstructions9C-4
CHAPTER 9D. SIGNALS	
Section 9D.01	Application9D-1
Section 9D.02	Signal Operations for Bicycles.....9D-1

FIGURES**CHAPTER 9B. SIGNS**

Figure 9B-1	Sign Placement on Shared-Use Paths.....	9B-2
Figure 9B-2	Regulatory Signs for Bicycle Facilities.....	9B-5
Figure 9B-3	Warning Signs for Bicycle Facilities.....	9B-9
Figure 9B-4	Guide Signs for Bicycle Facilities.....	9B-10
Figure 9B-5	Example of Signing for the Beginning and End of a Designated Bicycle Route on a Shared-Use Path.....	9B-11
Figure 9B-6	Example of Signing for an On-Roadway Bicycle Route.....	9B-12
Figure 9B-7	Examples of Signing and Markings for Shared-Use Paths.....	9B-13

CHAPTER 9C. MARKINGS

Figure 9C-1	Example of Intersection Pavement Markings—Designated Bicycle Lane with Left-Turn Area, Heavy Turn Volumes, Parking, One-Way Traffic, or Divided Highway.....	9C-2
Figure 9C-2	Examples of Centerline Markings for Shared-Use Paths.....	9C-3
Figure 9C-3	Example of Bicycle Lane Treatment at a Right Turn Only Lane.....	9C-5
Figure 9C-4	Example of Bicycle Lane Treatment at Parking Lane into a Right Turn Only Lane.....	9C-6
Figure 9C-5	Example of Pavement Markings for Bicycle Lanes on a Two-Way Street.....	9C-7
Figure 9C-6	Example of Optional Word and Symbol Pavement Markings for Bicycle Lanes.....	9C-8
Figure 9C-7	Example of Bicycle Detector Pavement Marking.....	9C-9
Figure 9C-8	Example of Obstruction Pavement Marking.....	9C-10

TABLES**CHAPTER 9B. SIGNS**

Table 9B-1	Minimum Sign Sizes for Bicycle Facilities.....	9B-3
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CHAPTER 9A. GENERAL

Section 9A.01 Requirements for Bicyclist Traffic Control Devices

Support:

General information and definitions concerning traffic control devices are found in Part 1.

Section 9A.02 Scope

Support:

Part 9 covers signs, pavement markings, and highway traffic signals specifically related to bicycle operation on both roadways and shared-use paths.

Guidance:

Parts 1, 2, 3, and 4 should be reviewed for general provisions, signs, pavement markings, and signals.

Standard:

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.

Section 9A.03 Definitions Relating to Bicycles

Standard:

The following terms shall be defined as follows when used in Part 9:

1. **Bicycle Facilities**—a general term denoting improvements and provisions that accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically defined for bicycle use.
2. **Bicycle Lane**—a portion of a roadway that has been designated by signs and pavement markings for preferential or exclusive use by bicyclists.
3. **Bikeway**—a generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.
4. **Designated Bicycle Route**—a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, with or without specific bicycle route numbers. Bicycle routes, which might be a combination of various types of bikeways, should establish a continuous routing.
5. **Shared-Use Path**—a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users.

Section 9A.04 Maintenance

Guidance:

All signs, signals, and markings, including those on bicycle facilities, should be properly maintained to command respect from both the motorist and the bicyclist. When installing signs and markings on bicycle facilities, an agency should be designated to maintain these devices.

Section 9A.05 Relation to Other Documents

Support:

“The Uniform Vehicle Code and Model Traffic Ordinance” published by the National Committee on Uniform Traffic Laws and Ordinances (see Section 1A.11) has provisions for bicycles and is the basis for the traffic control devices included herein.

Informational documents used during the development of the signing and marking recommendations in Part 9 include the following:

- A. “Guide for Development of Bicycle Facilities,” which is available from the American Association of State Highway and Transportation Officials (see Page i for the address);
- B. State and local government design guides; and
- C. “Selecting Roadway Design Treatments to Accommodate Bicycles,” FHWA Publication No. FHWA-RD-92-073, which is available from the FHWA Research and Technology Report Center, 9701 Philadelphia Court, Unit Q, Lanham, MD 20106.

Other publications that relate to the application of traffic control devices in general are listed in Section 1A.11.

Section 9A.06 Placement Authority

Support:

Section 1A.08 contains information regarding placement authority for traffic control devices.

Section 9A.07 Meaning of Standard, Guidance, Option, and Support

Support:

The introduction to this Manual contains information regarding the meaning of the headings Standard, Guidance, Option, and Support, and the use of the words shall, should, and may.

Section 9A.08 Colors

Support:

Section 1A.12 contains information regarding the color codes.

CHAPTER 9B. SIGNS

Section 9B.01 Application and Placement of Signs

Standard:

Bicycle signs shall be standard in shape, legend, and color.

All signs shall be retroreflectorized for use on bikeways, including shared-use paths and bicycle lane facilities.

Where signs serve both bicyclists and other road users, vertical mounting height and lateral placement shall be as specified in Part 2.

On shared-use paths, lateral sign clearance shall be a minimum of 0.9 m (3 ft) and a maximum of 1.8 m (6 ft) from the near edge of the sign to the near edge of the path (see Figure 9B-1).

Mounting height for ground-mounted signs on shared-use paths shall be a minimum of 1.2 m (4 ft) and a maximum of 1.5 m (5 ft), measured from the bottom edge of the sign to the near edge of the path surface (see Figure 9B-1).

When overhead signs are used on shared-use paths, 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).

Guidance:

Signs for the exclusive use of bicyclists should be located so that other road users are not confused by them.

The clearance for overhead signs on shared-use paths should be adjusted when appropriate to accommodate typical maintenance vehicles.

Section 9B.02 Design of Bicycle Signs

Standard:

If the sign applies to motorists and bicyclists, then the size shall be as shown for conventional roads in Table 2B-1.

The minimum sign sizes for shared-use paths shall be those shown in Table 9B-1, and shall be used only for signs installed specifically for bicycle traffic applications. The minimum sign sizes for bicycle facilities shall not be used for signs that are placed in a location that would have any application to other vehicles.

Option:

Larger size signs may be used on bicycle facilities when appropriate.

Guidance:

Except for size, the design of signs for bicycle facilities should be identical to that specified in this Manual for vehicular travel.

Support:

Uniformity in design includes shape, color, symbols, wording, lettering, and illumination or retroreflectorization.

Section 9B.03 STOP and YIELD Signs (R1-1, R1-2)

Standard:

STOP (R1-1) signs (see Figure 9B-2) shall be installed on shared-use paths at points where bicyclists are required to stop.

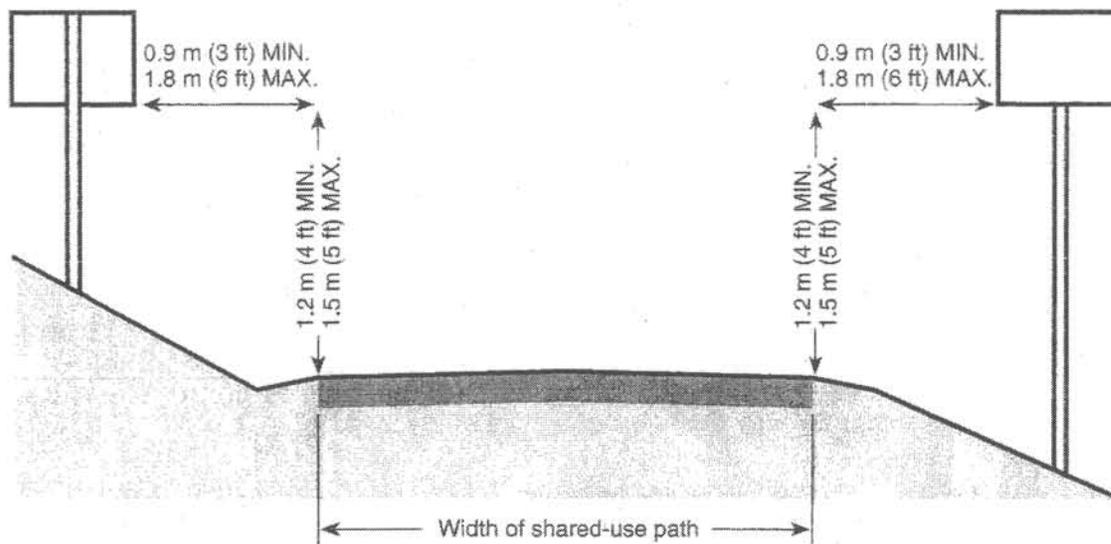
YIELD (R1-2) signs (see Figure 9B-2) shall be installed on shared-use paths at points where bicyclists have an adequate view of conflicting traffic as they approach the sign, and where bicyclists are required to yield the right-of-way to that conflicting traffic.

Option:

A 750 x 750 mm (30 x 30 in) STOP sign or a 900 x 900 x 900 mm (36 x 36 x 36 in) YIELD sign may be used on shared-use paths for added emphasis.

Guidance:

Where conditions require path users, but not roadway users, to stop or yield, the STOP sign or YIELD sign should be placed or shielded so that it is not readily visible to road users.

Figure 9B-1. Sign Placement on Shared-Use Paths

When placement of STOP or YIELD signs is considered, priority at a shared-use path/roadway intersection should be assigned with consideration of the following:

- A. Relative speeds of shared-use path and roadway users;
- B. Relative volumes of shared-use path and roadway traffic; and
- C. Relative importance of shared-use path and roadway.

Speed should not be the sole factor used to determine priority, as it is sometimes appropriate to give priority to a high-volume shared-use path crossing a low-volume street, or to a regional shared-use path crossing a minor collector street.

When priority is assigned, the least restrictive control that is appropriate should be placed on the lower priority approaches. STOP signs should not be used where YIELD signs would be acceptable.

Section 9B.04 Bicycle Lane Signs (R3-17, R3-17a, R3-17b)

Standard:

The BIKE LANE (R3-17) sign (see Figure 9B-2) shall be used only in conjunction with marked bicycle lanes as described in Section 9C.04, and shall be placed at periodic intervals along the bicycle lanes.

Guidance:

The BIKE LANE (R3-17) sign spacing should be determined by engineering judgment based on prevailing speed of bicycle and other traffic, block length, distances from adjacent intersections, and other considerations.

The AHEAD (R3-17a) sign (see Figure 9B-2) should be mounted directly below a R3-17 sign in advance of the beginning of a marked bicycle lane.

The ENDS (R3-17b) sign (see Figure 9B-2) should be mounted directly below a R3-17 sign at the end of a marked bicycle lane.

Section 9B.05 BEGIN RIGHT TURN LANE YIELD TO BIKES Sign (R4-4)

Option:

Where motor vehicles entering an exclusive right-turn lane must weave across bicycle traffic in bicycle lanes, the BEGIN RIGHT TURN LANE YIELD TO BIKES (R4-4) sign (see Figure 9B-2) may be used to inform both the motorist and the bicyclist of this weaving maneuver.

Guidance:

The R4-4 sign should not be used when bicyclists need to move left because of a right-turn lane drop situation.

Table 9B-1. Minimum Sign Sizes for Bicycle Facilities (Sheet 1 of 2)

Sign	MUTCD Code	Minimum Sign Size - mm (in)	
		Shared-Use Path	Roadway
Stop	R1-1	450 x 450 (18 x 18)	750 x 750 (30 x 30)
Yield	R1-2	450 x 450 x 450 (18 x 18 x 18)	750 x 750 x 750 (30 x 30 x 30)
Bike Lane	R3-17	—	750 x 600 (30 x 24)
Bicycle Lane Supplemental Plaques	R3-17a,b	—	750 x 300 (30 x 12)
Movement Restriction	R4-1,2,3,7	300 x 450 (12 x 18)	450 x 600 (18 x 24)
Begin Right Turn Lane Yield to Bikes	R4-4	—	900 x 750 (36 x 30)
Bicycle Wrong Way	R5-1b	300 x 450 (12 x 18)	300 x 450 (12 x 18)
No Motor Vehicles	R5-3	600 x 600 (24 x 24)	600 x 600 (24 x 24)
No Bicycles	R5-6	600 x 600 (24 x 24)	600 x 600 (24 x 24)
No Parking Bike Lane	R7-9,9a	—	300 x 450 (12 x 18)
Pedestrians Prohibited	R9-3a	450 x 450 (18 x 18)	450 x 450 (18 x 18)
Ride With Traffic Plaque	R9-3c	300 x 300 (12 x 12)	300 x 300 (12 x 12)
Bicycle Regulatory	R9-5,6	300 x 450 (12 x 18)	300 x 450 (12 x 18)
Shared-Use Path Restriction	R9-7	300 x 450 (12 x 18)	—
Push Button for Green Light	R10-3	225 x 300 (9 x 12)	225 x 300 (9 x 12)
To Request Green Wait on Symbol	R10-22	300 x 450 (12 x 18)	300 x 450 (12 x 18)
Railroad Crossbuck	R15-1	600 x 112 (24 x 4.5)	1200 x 225 (48 x 9)
Turn and Curve Warning	W1-1,2,3,4,5	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Arrow Warning	W1-6,7	600 x 300 (24 x 12)	900 x 450 (36 x 18)
Intersection Warning	W2-1,2,3,4,5	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Stop, Yield, Signal Ahead	W3-1,2,3	450 x 450 (18 x 18)	750 x 750 (30 x 30)
Narrow Bridge	W5-2	450 x 450 (18 x 18)	750 x 750 (30 x 30)
Bikeway Narrows	W5-4a	450 x 450 (18 x 18)	750 x 750 (30 x 30)

Table 9B-1. Minimum Sign Sizes for Bicycle Facilities (Sheet 2 of 2)

Sign	MUTCD Code	Minimum Sign Size - mm (in)	
		Shared-Use Path	Roadway
Hill	W7-5	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Bump or Dip	W8-1,2	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Bicycle Surface Condition	W8-10	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Bicycle Surface Condition Plaque	W8-10p	300 x 225 (12 x 9)	300 x 225 (12 x 9)
Advance Grade Crossing	W10-1	375 Dia. (15 Dia.)	375 Dia. (15 Dia.)
Bicycle Warning	W11-1	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Pedestrian Crossing	W11-2	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Low Clearance	W12-2	450 x 450 (18 x 18)	750 x 750 (30 x 30)
Playground	W15-1	450 x 450 (18 x 18)	600 x 600 (24 x 24)
Share the Road Plaque	W16-1	—	450 x 600 (18 x 24)
Diagonal Arrow Plaque	W16-7p	—	600 x 300 (24 x 12)
Bicycle Guide	D1-1b	600 x 150 (24 x 6)	600 x 150 (24 x 6)
Street Name	D1-1c	450 x 150 (18 x 6)	450 x 150 (18 x 6)
Bicycle Parking	D4-3	300 x 450 (12 x 18)	300 x 450 (12 x 18)
Bike Route	D11-1	600 x 450 (24 x 18)	600 x 450 (24 x 18)
Bicycle Route Sign	M1-8	300 x 450 (12 x 18)	300 x 450 (12 x 18)
Interstate Bicycle Route Sign	M1-9	450 x 600 (18 x 24)	450 x 600 (18 x 24)
Bicycle Route Supplemental Plaques	M4-11,12,13	300 x 100 (12 x 4)	300 x 100 (12 x 4)
Route Sign Supplemental Plaques	M7-1,2,3,4,5,6,7	300 x 225 (12 x 9)	300 x 225 (12 x 9)

Figure 9B-2. Regulatory Signs for Bicycle Facilities



R1-1



R1-2



R3-17



R3-17a



R3-17b



R4-1



R4-2



R4-3



R4-4



R4-7



R5-1b

R9-3c



R5-3



R5-6



R7-9



R7-9a



R9-3a



R9-5



R9-6



R9-7



R10-3



R10-22



R15-1

Section 9B.06 Bicycle WRONG WAY Sign and RIDE WITH TRAFFIC Plaque (R5-1b, R9-3c)**Option:**

The Bicycle WRONG WAY (R5-1b) sign and RIDE WITH TRAFFIC (R9-3c) plaque (see Figure 9B-2) may be placed facing wrong-way bicycle traffic, such as on the left side of a roadway.

This sign and plaque may be mounted back-to-back with other signs to minimize visibility to other traffic.

Guidance:

The RIDE WITH TRAFFIC plaque should be used only in conjunction with the Bicycle WRONG WAY sign, and should be mounted directly below the Bicycle WRONG WAY sign.

Section 9B.07 NO MOTOR VEHICLES Sign (R5-3)**Option:**

The NO MOTOR VEHICLES (R5-3) sign (see Figure 9B-2) may be installed at the entrance to a shared-use path.

Section 9B.08 No Bicycles Sign (R5-6)**Guidance:**

Where bicyclists are prohibited, the No Bicycles (R5-6) sign (see Figure 9B-2) should be installed at the entrance to the facility.

Option:

Where pedestrians and motor-driven cycles are also prohibited, it may be more desirable to use the R5-10a word message sign that is described in Section 2B.36.

Section 9B.09 No Parking Bike Lane Signs (R7-9, R7-9a)**Standard:**

If the installation of signs is necessary to restrict parking, standing, or stopping in a bicycle lane, appropriate signs as described in Sections 2B.39 through 2B.41, or the No Parking Bike Lane (R7-9 or R7-9a) signs (see Figure 9B-2) shall be installed.

Section 9B.10 Bicycle Regulatory Signs (R9-5, R9-6, R10-3)**Option:**

The R9-5 sign (see Figure 9B-2) may be used where the crossing of a street by bicyclists is controlled by pedestrian signal indications.

Where it is not intended for bicyclists to be controlled by pedestrian signal indications, the R10-3 sign (see Figure 9B-2 and Section 2B.45) may be used.

The R9-6 sign (see Figure 9B-2) may be used where a bicyclist is required to cross or share a facility used by pedestrians and is required to yield to the pedestrians.

Guidance:

If used, the R9-5 or R10-3 signs should be installed near the edge of the sidewalk in the vicinity of where bicyclists will be crossing the street.

Section 9B.11 Shared-Use Path Restriction Sign (R9-7)**Option:**

The Shared-Use Path Restriction (R9-7) sign (see Figure 9B-2) may be installed on facilities that are to be shared by pedestrians and bicyclists. The symbols may be switched as appropriate.

A designated pavement area may be provided for each mode of travel (see Section 9C.03).

Section 9B.12 Bicycle Signal Actuation Sign (R10-22)**Option:**

The Bicycle Signal Actuation (R10-22) sign (see Figure 9B-2) may be installed at signalized intersections where markings are used to indicate the location where a bicyclist is to be positioned to actuate the signal (see Section 9C.05).

Guidance:

If the Bicycle Signal Actuation sign is installed, it should be placed at the roadside adjacent to the marking to emphasize the connection between the marking and the sign.

Section 9B.13 Other Regulatory Signs

Option:

Other regulatory signs described in Chapter 2B may be installed on bicycle facilities as appropriate.

Section 9B.14 Turn or Curve Warning Signs (W1 Series)

Guidance:

To warn bicyclists of unexpected changes in shared-use path direction, appropriate turn or curve (W1-1 through W1-7) signs (see Figure 9B-3) should be used.

The W1-1 through W1-5 signs should be installed no less than 15 m (50 ft) in advance of the beginning of the change of alignment.

Section 9B.15 Intersection Warning Signs (W2 Series)

Option:

Intersection Warning (W2-1 through W2-5) signs (see Figure 9B-3) may be used on a roadway, street, or shared-use path in advance of an intersection to indicate the presence of an intersection and the possibility of turning or entering traffic.

Guidance:

When engineering judgment determines that the visibility of the intersection is limited on the shared-use path approach, Intersection Warning signs should be used.

Intersection Warning signs should not be used where the shared-use path approach to the intersection is controlled by a STOP sign, YIELD sign, or a traffic control signal.

Section 9B.16 Bicycle Surface Condition Warning Sign (W8-10)

Option:

The Bicycle Surface Condition Warning (W8-10) sign (see Figure 9B-3) may be installed where roadway or shared-use path conditions could cause a bicyclist to lose control of the bicycle.

Signs warning of other conditions that might be of concern to bicyclists, including BUMP (W8-1), DIP (W8-2), PAVEMENT ENDS (W8-3), and any other word message that describes conditions that are of concern to bicyclists, may also be used.

A supplemental plaque may be used to clarify the specific type of surface condition.

Section 9B.17 Bicycle Warning Sign (W11-1)

Support:

The Bicycle Warning (W11-1) sign (see Figure 9B-3) alerts the road user to unexpected entries into the roadway by bicyclists, and other crossing activities that might cause conflicts. These conflicts might be relatively confined, or might occur randomly over a segment of roadway.

Option:

A supplemental plaque with the legend AHEAD or XXX METERS (XXX FEET) may be used with the Bicycle Warning sign.

Guidance:

If used in advance of a specific crossing point, the Bicycle Warning sign should be placed at a distance in advance of the crossing location that conforms with the guidance given in Table 2C-4.

Standard:

Bicycle Warning signs, when used at the location of the crossing, shall be supplemented with a diagonal downward pointing arrow (W16-7p) plaque (see Figure 9B-3) to show the location of the crossing.

Option:

A fluorescent yellow-green background color with a black legend and border may be used for Bicycle Warning signs and supplemental plaques.

Guidance:

When the fluorescent yellow-green background color is used, a systematic approach featuring one background color within a zone or area should be used. The mixing of standard yellow and fluorescent yellow-green backgrounds within a zone or area should be avoided.

Figure 9B-3. Warning Signs for Bicycle Facilities (Sheet 1 of 2)



W1-1



W1-2



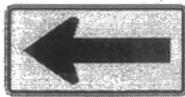
W1-3



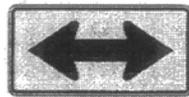
W1-4



W1-5



W1-6



W1-7



W2-1



W2-2



W2-3



W2-4



W2-5



W3-1



W3-2



W3-3



W5-2



W5-4a



W7-5



W8-1



W8-2



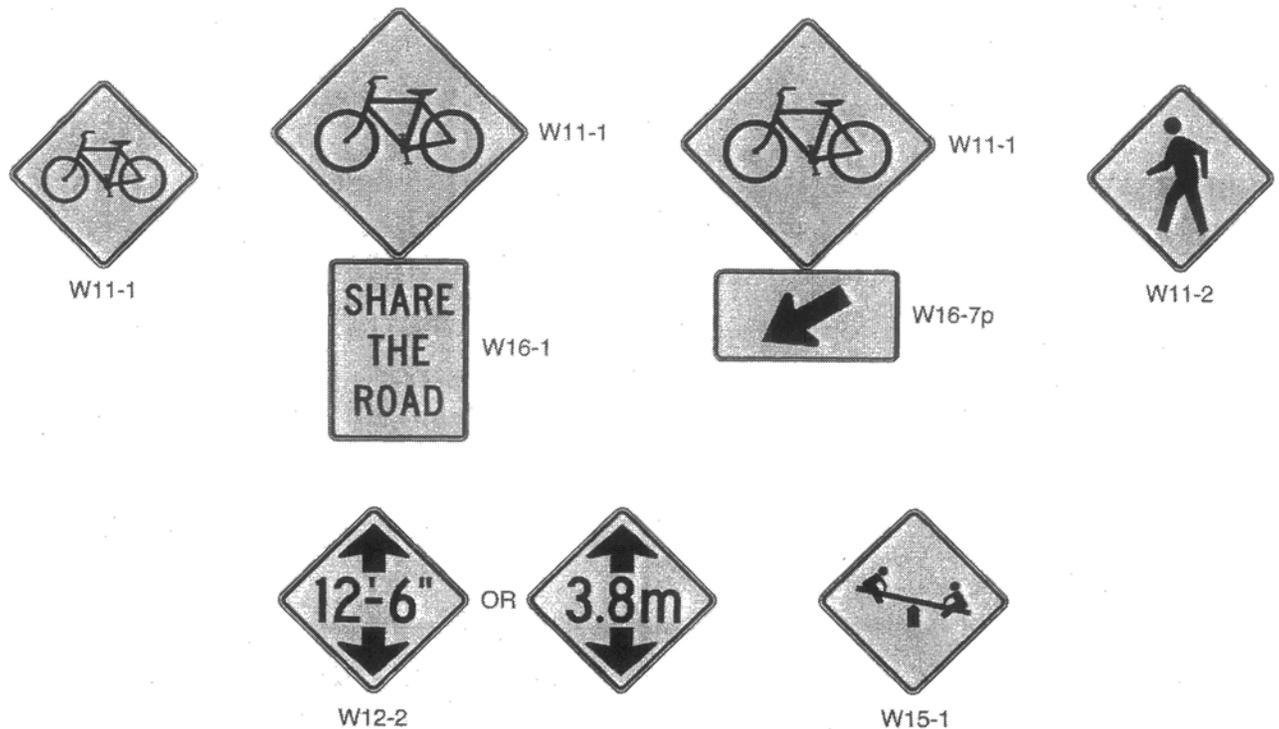
W8-10



W8-10p



W10-1

Figure 9B-3. Warning Signs for Bicycle Facilities (Sheet 2 of 2)**Section 9B.18 Other Bicycle Warning Signs****Option:**

Other bicycle warning signs (see Figure 9B-3) such as BIKEWAY NARROWS (W5-4a) and Hill (W7-5) may be installed on bicycle facilities to warn bicyclists of conditions not readily apparent.

In situations where there is a need to warn motorists to watch for bicyclists traveling along the highway, the SHARE THE ROAD (W16-1) plaque (see Figure 9B-3) may be used in conjunction with the W11-1 sign.

Guidance:

If used, other advance bicycle warning signs should be installed no less than 15 m (50 ft) in advance of the beginning of the condition.

Where temporary traffic control zones are present on bikeways, appropriate signs from Part 6 should be used.

Option:

Other warning signs described in Chapter 2C may be installed on bicycle facilities as appropriate.

Section 9B.19 Bicycle Route Guide Signs (D11-1)**Guidance:**

If used, Bicycle Route Guide (D11-1) signs (see Figure 9B-4) should be provided at decision points along designated bicycle routes, including signs to inform bicyclists of bicycle route direction changes and confirmation signs for route direction, distance, and destination.

If used, Bicycle Route Guide signs should be repeated at regular intervals so that bicyclists entering from side streets will have an opportunity to know that they are on a bicycle route. Similar guide signing should be used for shared roadways with intermediate signs placed for bicyclist guidance.

Support:

Figure 9B-5 shows an example of the signing for the beginning and end of a designated bicycle route on a shared-use path. Figure 9B-6 shows an example of signing for an on-roadway bicycle route. Figure 9B-7 shows examples of signing and markings for shared-use paths.

Figure 9B-4. Guide Signs for Bicycle Facilities



Section 9B.20 Bicycle Route Signs (M1-8, M1-9)

Option:

To establish a unique identification (route designation) for a State or local bicycle route, the Bicycle Route (M1-8) sign (see Figure 9B-4) may be used.

Standard:

The Bicycle Route sign shall contain a route designation and shall have a green background with a retroreflectorized white legend and border.

Option:

Where a designated bicycle route extends for long distances through two or more States, a coordinated submittal by the affected States for an assignment of an Interstate Bicycle Route number designation may be sent to the American Association of State Highway and Transportation Officials (see Page i for the address).

Standard:

The Interstate Bicycle Route (M1-9) sign (see Figure 9B-4) shall contain the assigned route number designation and have a black legend and border with a retroreflectorized white background.

Guidance:

If used, the Bicycle Route or Interstate Bicycle Route signs should be placed at intervals frequent enough to keep bicyclists informed of changes in route direction and to remind motorists of the presence of bicyclists.

Figure 9B-5. Example of Signing for the Beginning and End of a Designated Bicycle Route on a Shared-Use Path

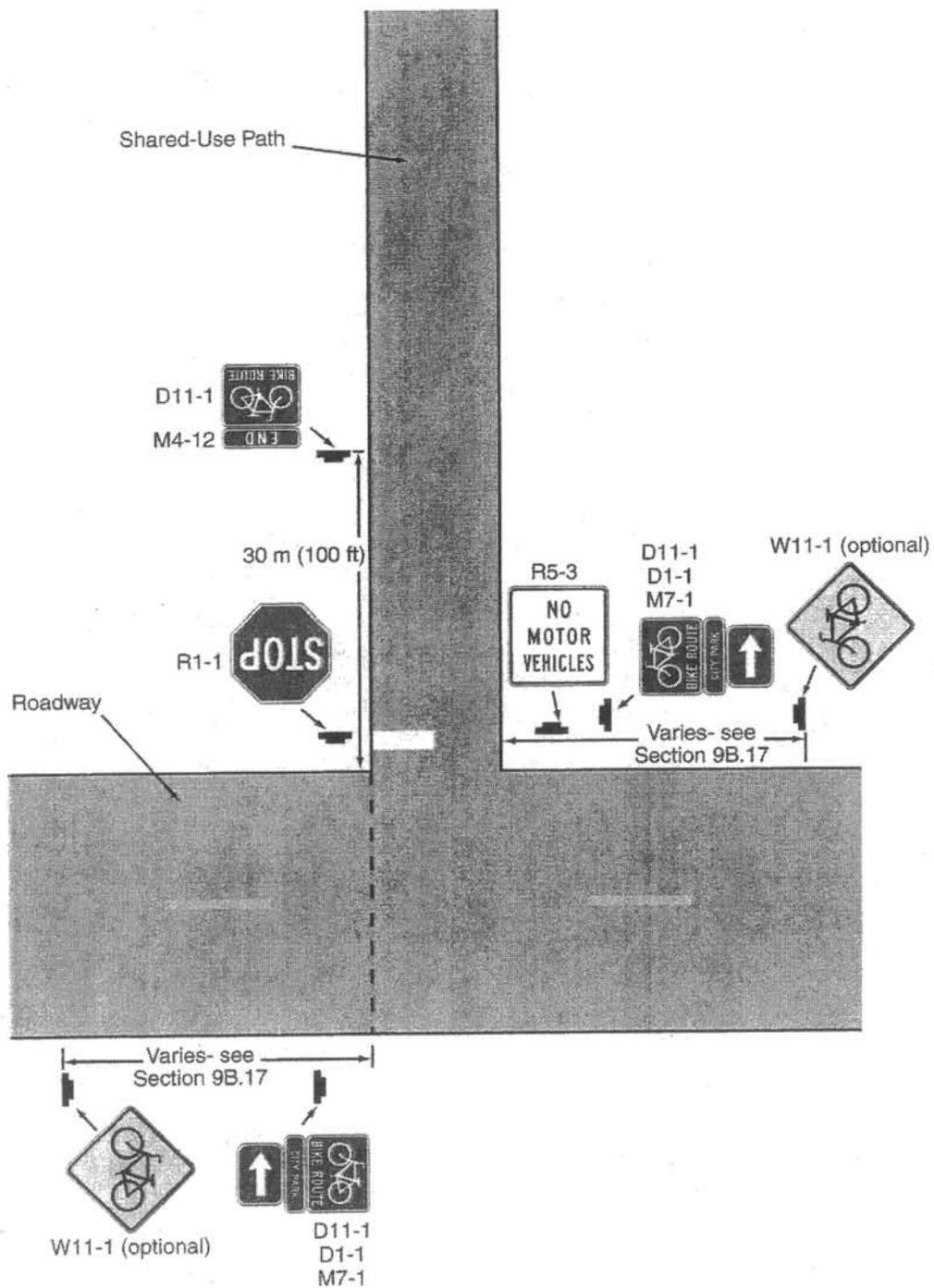
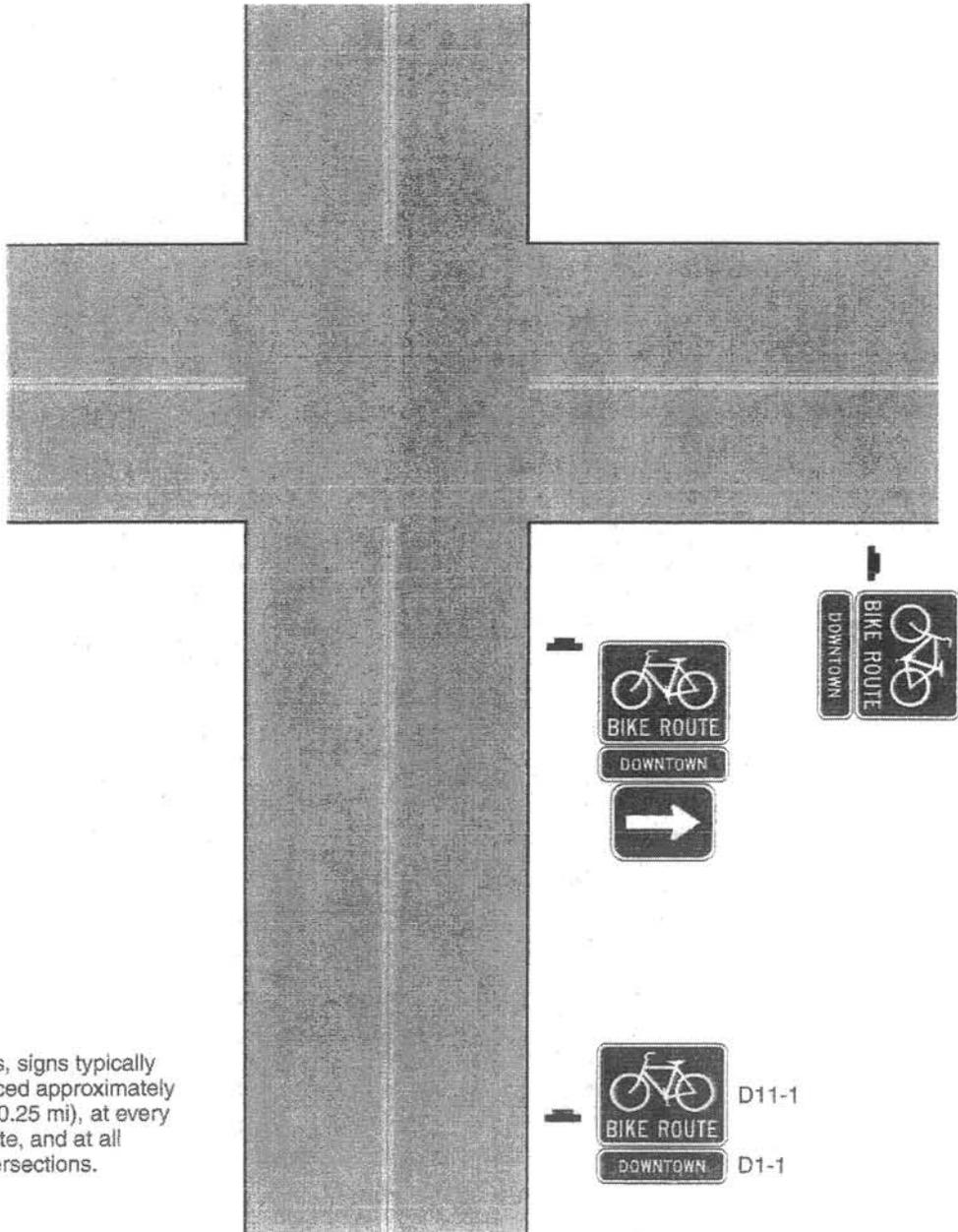
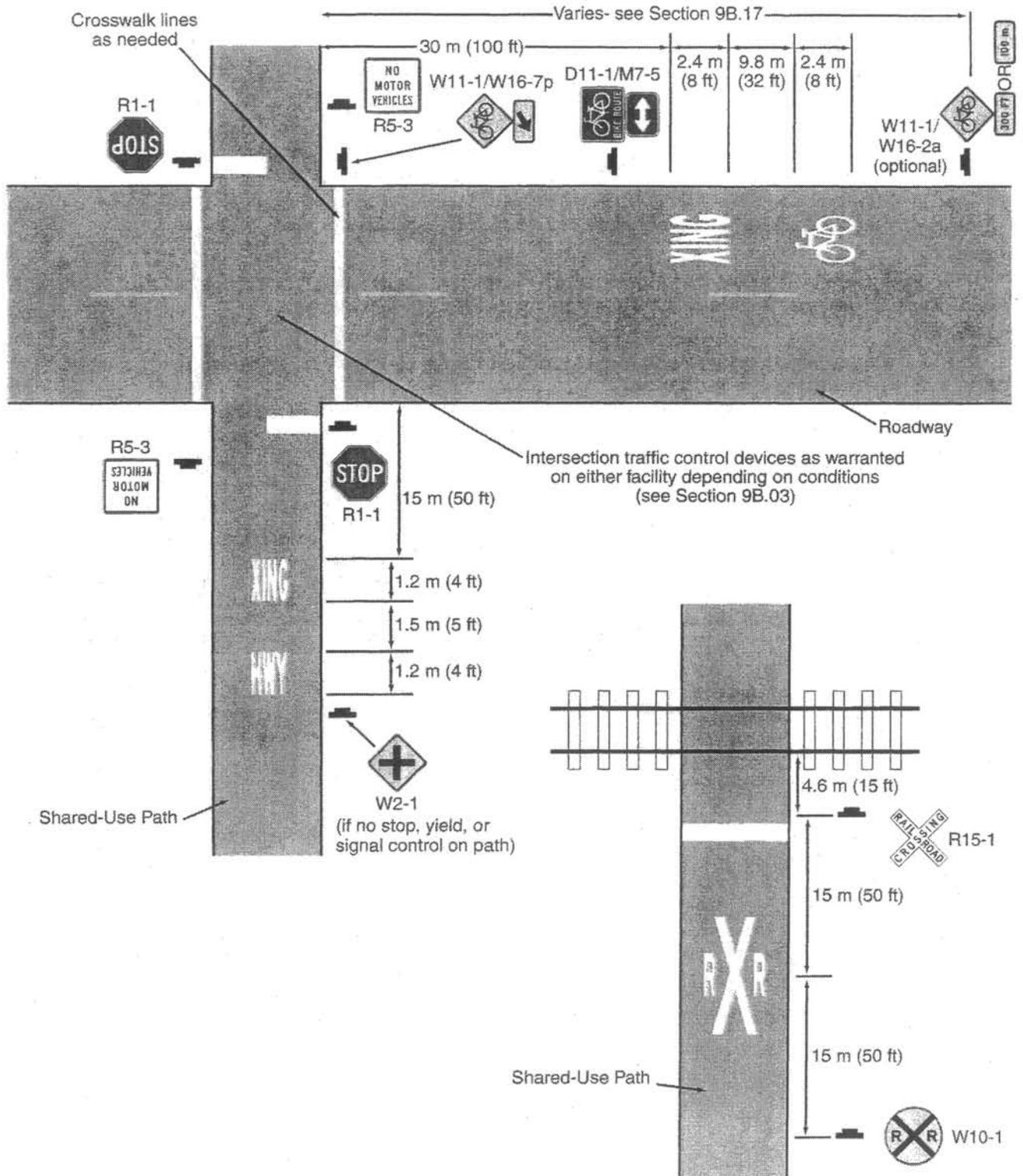


Figure 9B-6. Example of Signing for an On-Roadway Bicycle Route



In urban areas, signs typically should be placed approximately every 400 m (0.25 mi), at every turn in the route, and at all signalized intersections.

Figure 9B-7. Examples of Signing and Markings for Shared-Use Paths



Option:

Bicycle Route or Interstate Bicycle Route signs may be installed on shared roadways or on shared-use paths to provide guidance for bicyclists.

The Bicycle Route Guide (D11-1) sign (see Figure 9B-4) may be installed where no unique designation of routes is desired.

Section 9B.21 Destination Arrow and Supplemental Plaque Signs for Bicycle Route Signs**Option:**

Destination (D1-1b and D1-1c) signs (see Figure 9B-4) may be mounted below Bicycle Route Guide signs, Bicycle Route signs, or Interstate Bicycle Route signs to furnish additional information, such as directional changes in the route, or intermittent distance and destination information.

The M4-11 through M4-13 supplemental plaques (see Figure 9B-4) may be mounted above the appropriate Bicycle Route Guide signs, Bicycle Route signs, or Interstate Bicycle Route signs.

Guidance:

If used, the appropriate arrow (M7-1 through M7-7) sign (see Figure 9B-4) should be placed below the Bicycle Route Guide sign, Bicycle Route sign, or Interstate Bicycle Route sign.

Standard:

The arrow signs and supplemental plaques used with the D11-1 or M1-8 signs shall have a white legend and border on a green background.

The arrow signs and supplemental plaques used with the M1-9 sign shall have a white legend and border on a black background.

Section 9B.22 Bicycle Parking Area Sign (D4-3)**Option:**

The Bicycle Parking Area (D4-3) sign (see Figure 9B-4) may be installed where it is desirable to show the direction to a designated bicycle parking area. The arrow may be reversed as appropriate.

Standard:

The legend and border of the Bicycle Parking Area sign shall be green on a retroreflectorized white background.

CHAPTER 9C. MARKINGS

Section 9C.01 Functions of Markings

Support:

Markings indicate the separation of the lanes for road users, assist the bicyclist by indicating assigned travel paths, indicate correct position for traffic control signal actuation, and provide advance information for turning and crossing maneuvers.

Section 9C.02 General Principles

Guidance:

Bikeway design guides should be used when designing markings for bicycle facilities (see Section 9A.05).

Standard:

Markings used on bikeways shall be retroreflectorized.

Guidance:

Pavement marking symbols and/or word messages should be used in bikeways where appropriate. Consideration should be given to selecting pavement marking materials that will minimize loss of traction for bicycles under wet conditions.

Standard:

The colors, width of lines, patterns of lines, and symbols used for marking bicycle facilities shall be as defined in Sections 3A.04, 3A.05, and 3B.22.

Support:

Figures 9B-7 and 9C-1 through 9C-8 show examples of the application of lines, word messages, and symbols on designated bikeways.

Option:

A dotted line may be used to define a specific path for a bicyclist crossing an intersection (see Figure 9C-1) as described in Sections 3A.05 and 3B.08.

Section 9C.03 Marking Patterns and Colors on Shared-Use Paths

Option:

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 (see Figure 9C-2).

Guidance:

Broken lines used on shared-use paths should have the usual 1-to-3 segment-to-gap ratio. A nominal 0.9 m (3 ft) segment with a 2.7 m (9 ft) gap should be used.

If conditions make it desirable to separate two directions of travel on shared-use paths at particular locations, a solid yellow line should be used to indicate no passing and no traveling to the left of the line.

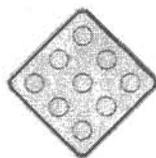
Markings as shown in Figure 9C-2 should be used at the location of obstructions in the center of the path, including vertical elements intended to physically prevent unauthorized motor vehicles from entering the path.

Option:

A solid white line may be used on shared-use paths to separate different types of users. The R9-7 sign (see Figure 9B-2) may be used to supplement the solid white line.

Smaller size letters and symbols may be used on shared-use paths. Where arrows are needed on shared-use paths, half-size layouts of the arrows may be used (see Section 3B.19).

Fixed objects adjacent to shared-use paths may be marked with object markers (Type 1, 2, or 3).



Type 1



Type 2



Type 3

Figure 9C-1. Example of Intersection Pavement Markings—Designated Bicycle Lane with Left-Turn Area, Heavy Turn Volumes, Parking, One-Way Traffic, or Divided Highway

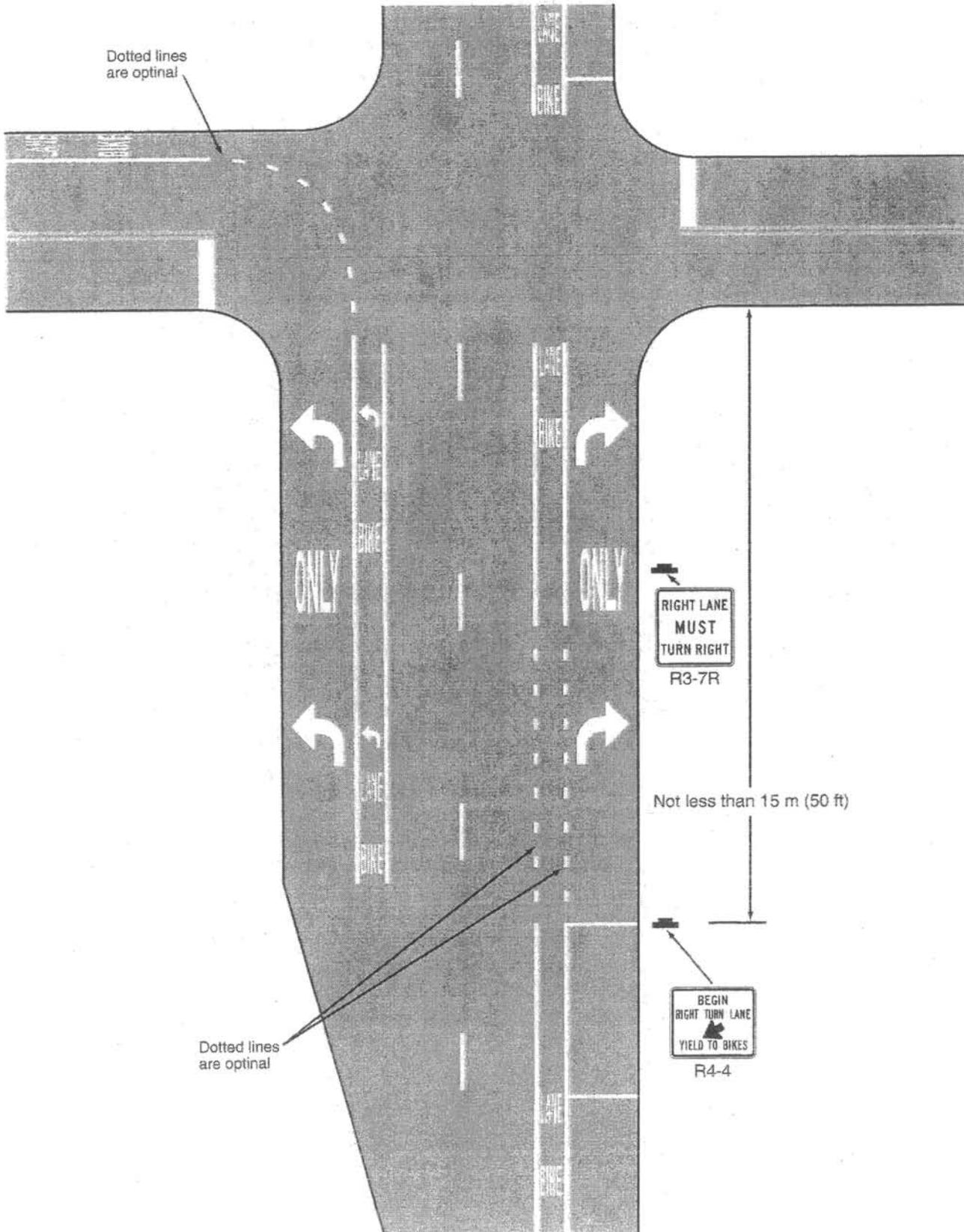
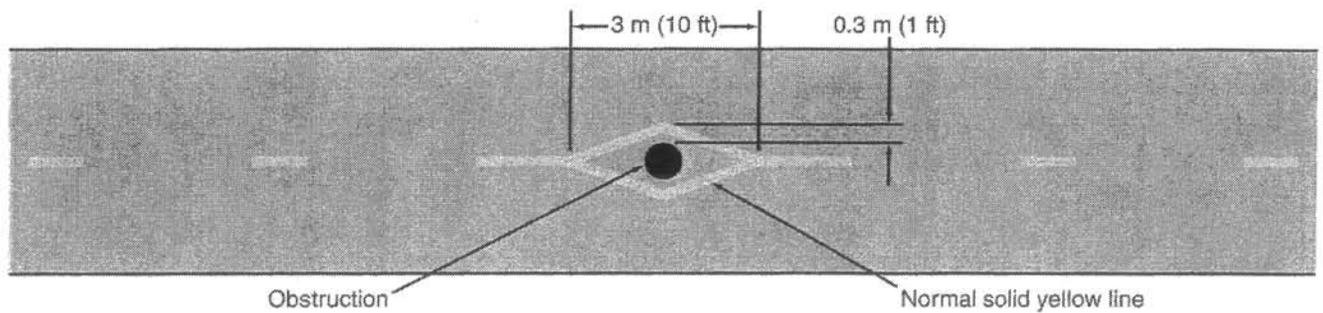
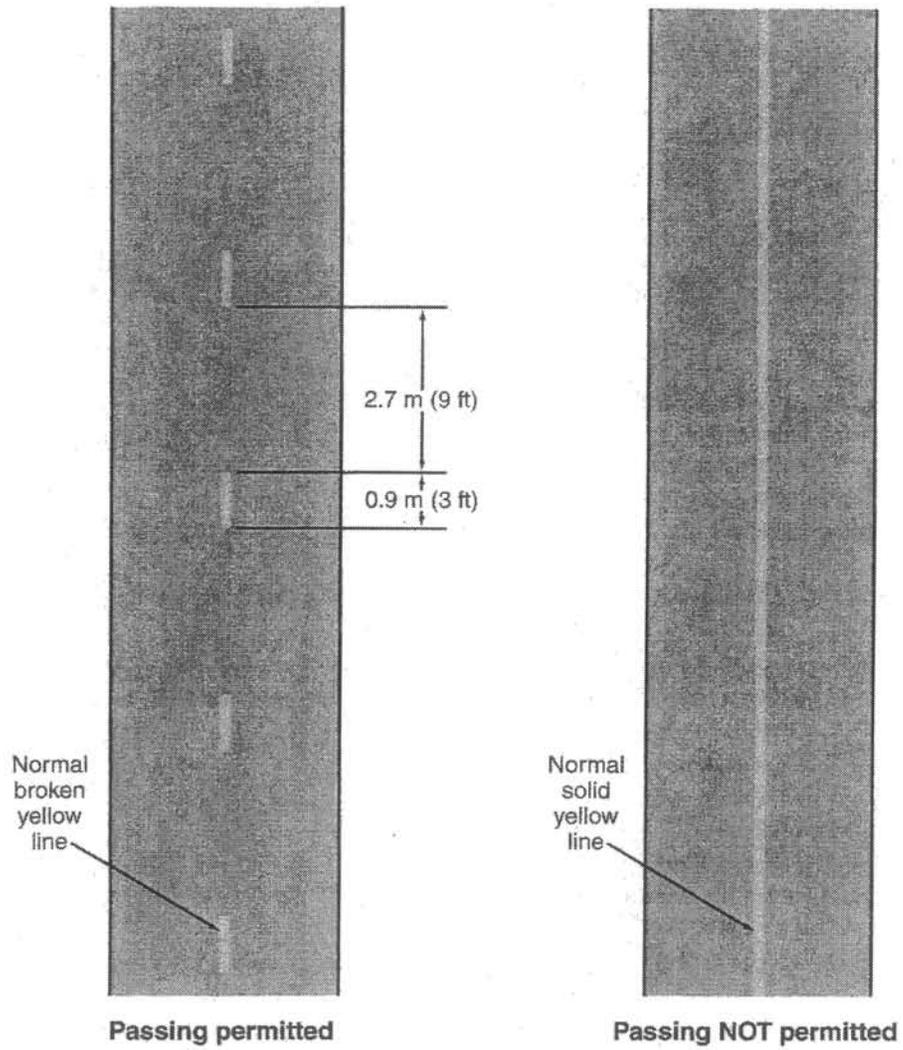


Figure 9C-2. Examples of Centerline Markings for Shared-Use Paths



Standard:

All object markers shall be retroreflective.

Markers such as those described in Section 3C.01 shall also be used on shared-use paths, if needed.

Obstructions in the traveled way of a shared-use path shall be marked with retroreflectorized material or appropriate object markers.

On Type 3 markers, the alternating black and retroreflective yellow stripes shall be sloped down at an angle of 45 degrees toward the side on which traffic is to pass the obstruction.

Section 9C.04 Markings For Bicycle Lanes**Guidance:**

Longitudinal pavement markings should be used to define bicycle lanes.

Support:

Pavement markings designate that portion of the roadway for preferential use by bicyclists. Markings inform all road users of the restricted nature of the bicycle lane.

Examples of bicycle lane markings at right-turn lanes are shown in Figures 9C-1, 9C-3, and 9C-4. Examples of pavement markings for bicycle lanes on a two-way street are shown in Figure 9C-5. Pavement symbols and markings for bicycle lanes are shown in Figure 9C-6.

Standard:

If used, the bicycle lane symbol marking (see Figure 9C-6) shall be placed immediately after an intersection and at other locations as needed. The bicycle lane symbol marking shall be white. If the bicycle lane symbol marking is used in conjunction with other word or symbol messages, it shall precede them.

If the word or symbol pavement markings shown in Figure 9C-6 are used, Bicycle Lane signs (see Section 9B.04) shall also be used, but the signs need not be adjacent to every symbol to avoid overuse of the signs.

A through bicycle lane shall not be positioned to the right of a right turn only lane.

Support:

A bicyclist continuing straight through an intersection from the right of a right turn lane would be inconsistent with normal traffic behavior and would violate the expectations of right-turning motorists.

Guidance:

When the right through lane is dropped to become a right turn only lane, the bicycle lane markings should stop at least 100 feet before the beginning of the right turn lane. Through bicycle lane markings should resume to the left of the right turn only lane.

An optional through-right turn lane next to a right turn only lane should not be used where there is a through bicycle lane. If a capacity analysis indicates the need for an optional through-right turn lane, the bicycle lane should be discontinued at the intersection approach.

Posts or raised pavement markers should not be used to separate bicycle lanes from adjacent travel lanes.

Support:

Using raised devices creates a collision potential for bicyclists by placing fixed objects immediately adjacent to the travel path of the bicyclist. In addition, raised devices can prevent vehicles turning right from merging with the bicycle lane, which is the preferred method for making the right turn. Raised devices used to define a bicycle lane can also cause problems in cleaning and maintaining the bicycle lane.

Standard:

Bicycle lanes shall not be provided on the circular roadway of a roundabout intersection.

Section 9C.05 Bicycle Detector Symbol**Option:**

A symbol (see Figure 9C-7) may be placed on the pavement indicating the optimum position for a bicyclist to actuate the signal.

An R10-22 sign (see Section 9B.12 and Figure 9B-2) may be installed to supplement the pavement marking.

Section 9C.06 Pavement Markings for Obstructions**Guidance:**

In roadway situations where it is not practical to eliminate a drain grate or other roadway obstruction that is inappropriate for bicycle travel, white markings applied as shown in Figure 9C-8 should be used.

Figure 9C-3. Example of Bicycle Lane Treatment at a Right Turn Only Lane

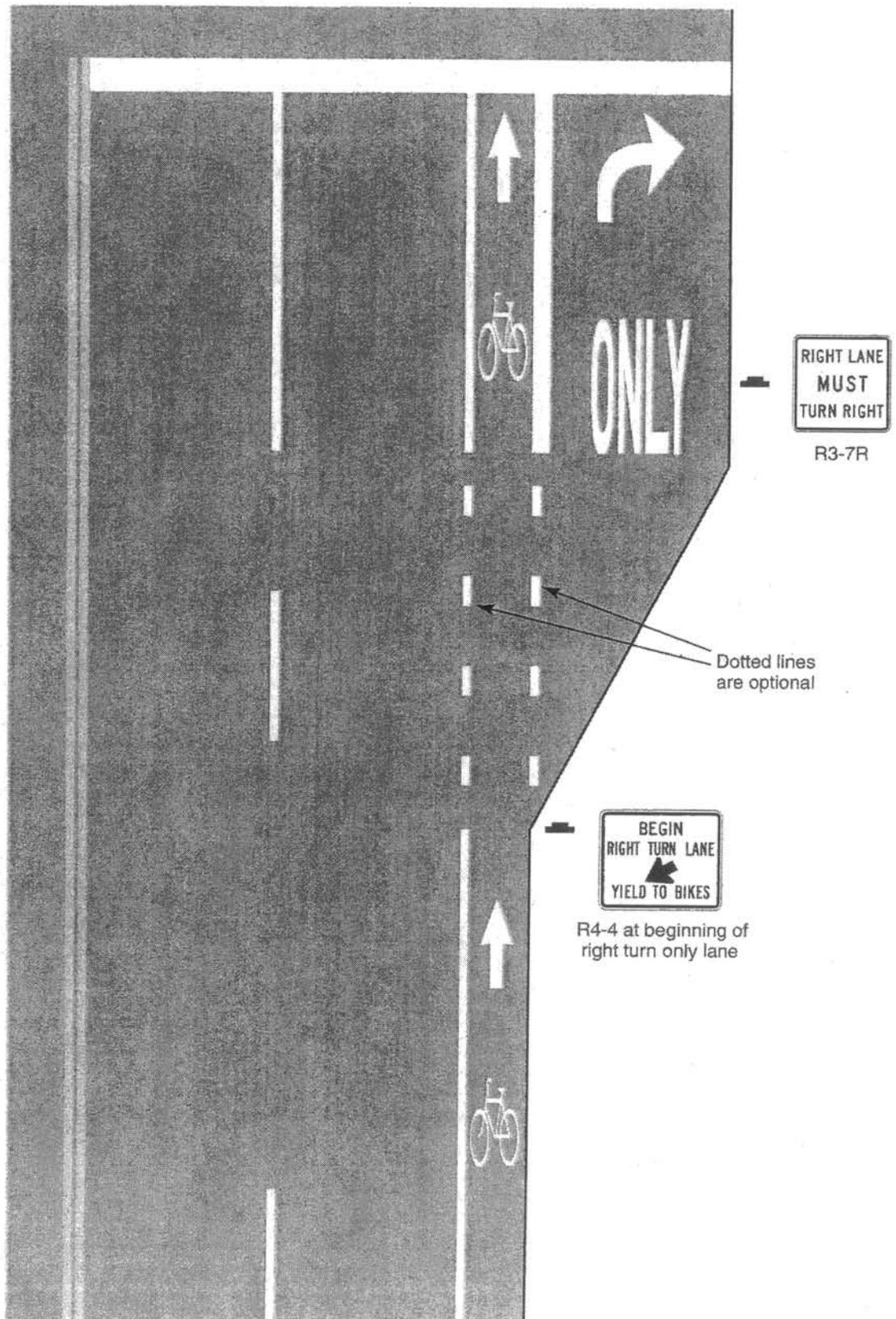


Figure 9C-4. Example of Bicycle Lane Treatment at Parking Lane into a Right Turn Only Lane

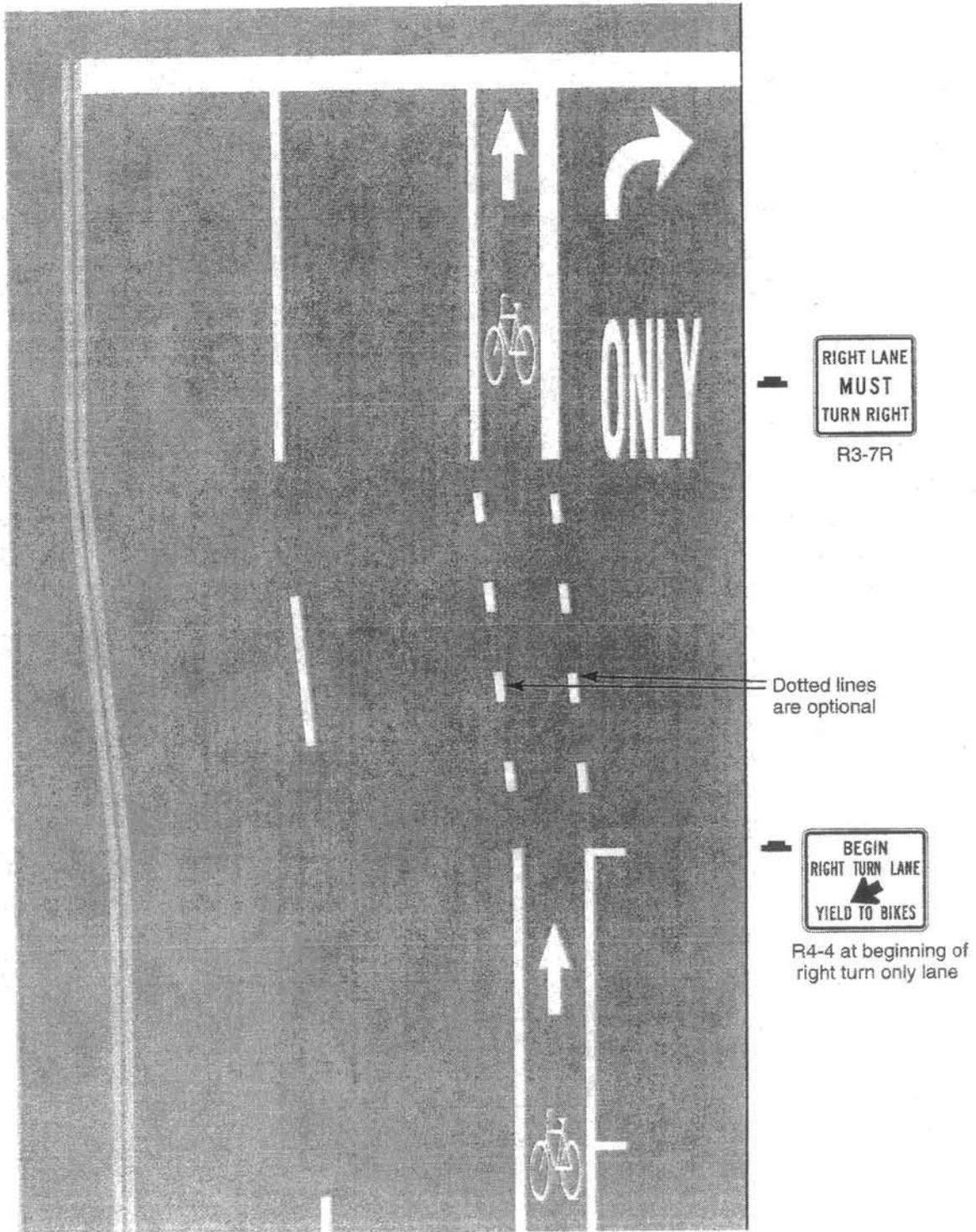


Figure 9C-5. Example of Pavement Markings for Bicycle Lanes on a Two-Way Street

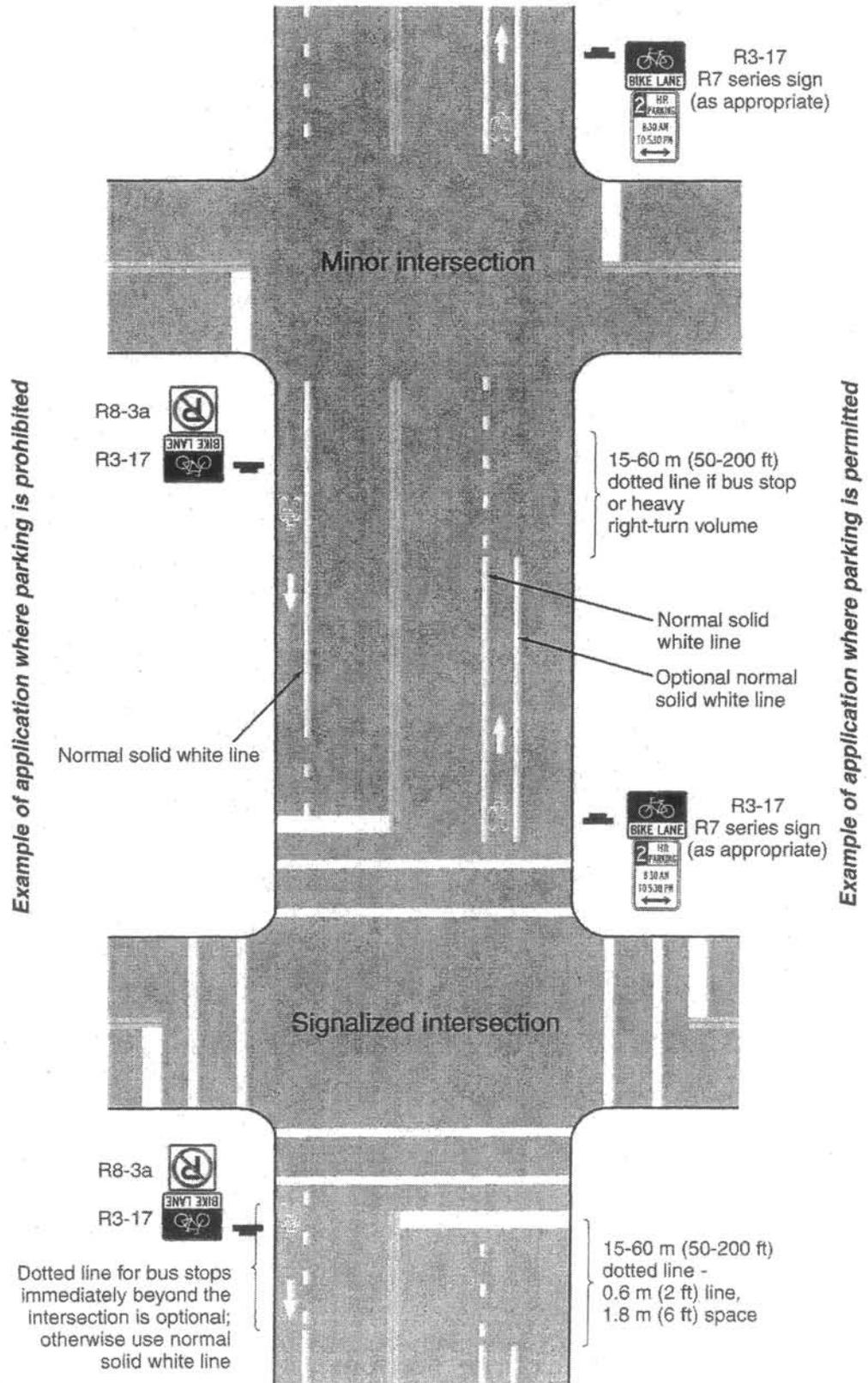


Figure 9C-6. Example of Optional Word and Symbol Pavement Markings for Bicycle Lanes

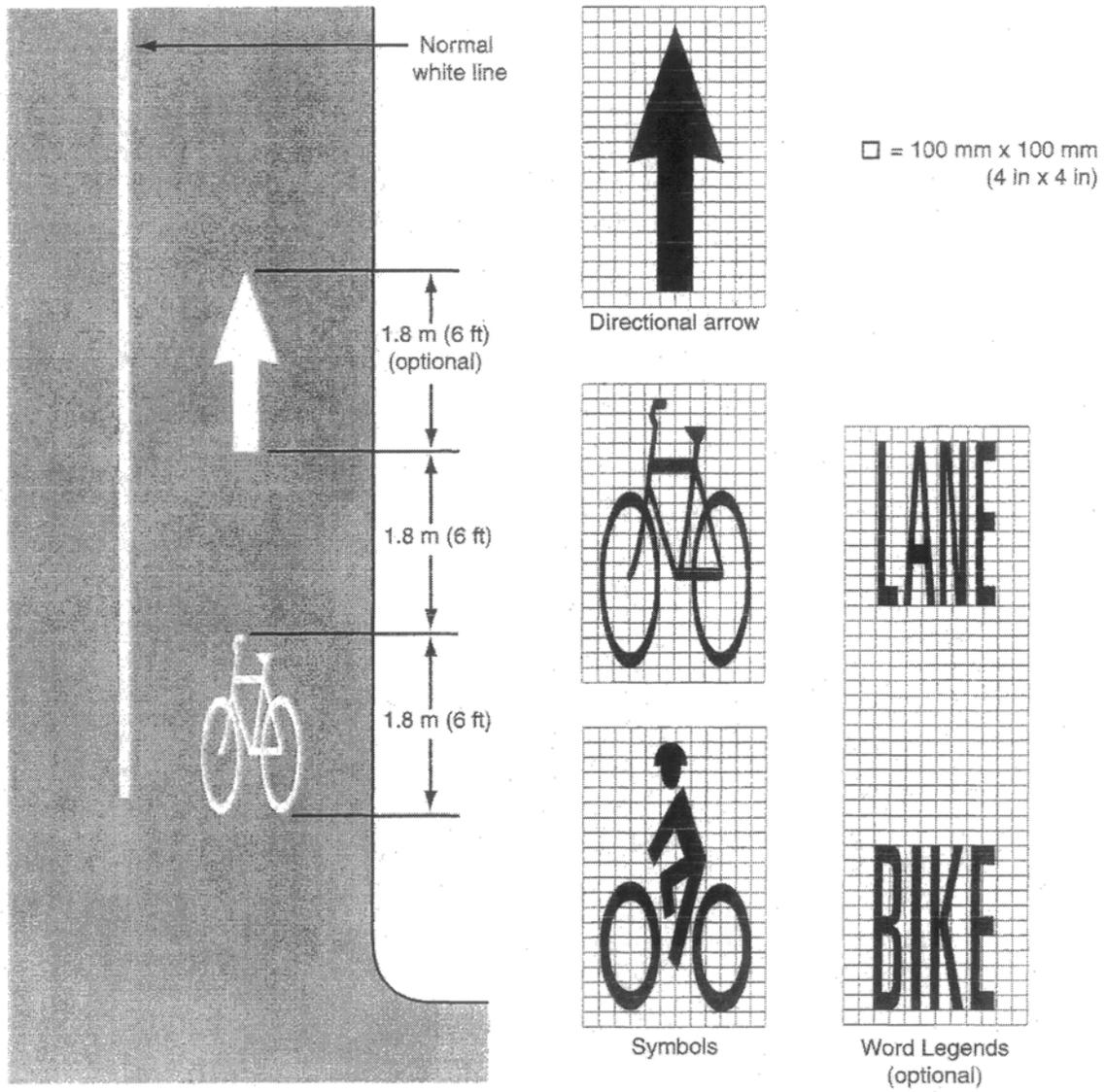


Figure 9C-7. Example of Bicycle Detector Pavement Marking

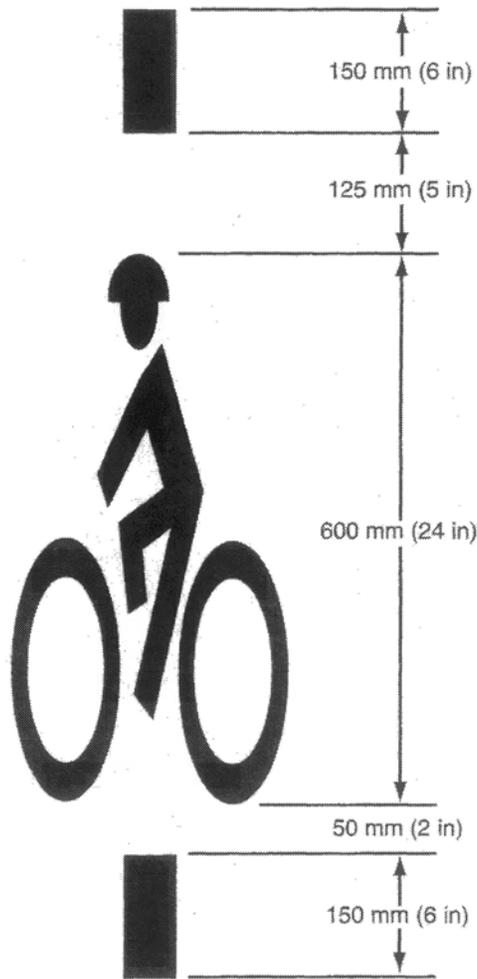
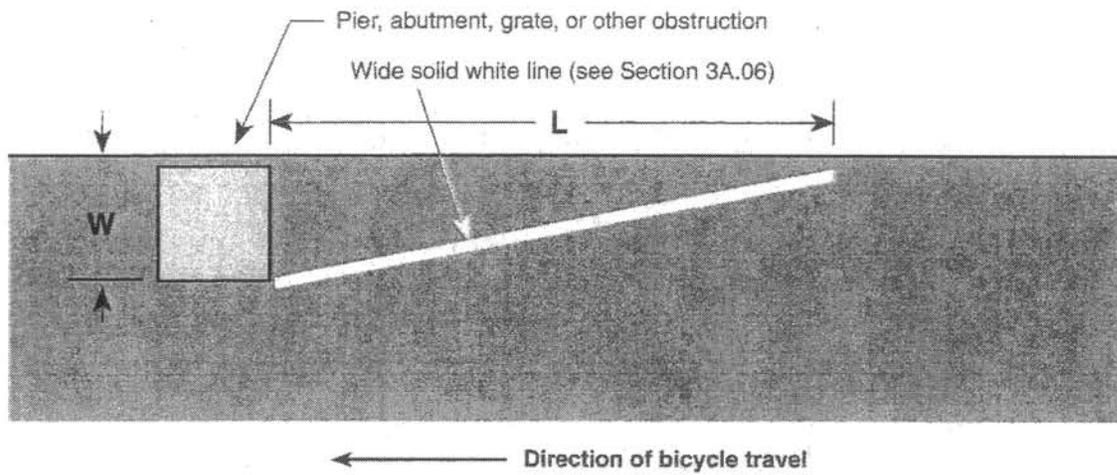


Figure 9C-8. Example of Obstruction Pavement Marking



For metric units:

$L = 0.6 WS$, where S is bicycle approach speed in kilometers per hour

For English units:

$L = WS$, where S is bicycle approach speed in miles per hour

CHAPTER 9D. SIGNALS

Section 9D.01 Application

Support:

Part 4 contains information regarding signal warrants and other requirements relating to signal installations.

Option:

For purposes of signal warrant evaluation, bicyclists may be counted as either vehicles or pedestrians.

Section 9D.02 Signal Operations for Bicycles

Standard:

At installations where visibility-limited signal faces are used, signal faces shall be adjusted so bicyclists for whom the indications are intended can see the signal indications. If the visibility-limited signal faces cannot be aimed to serve the bicyclist, then separate signal faces shall be provided for the bicyclist.

On bikeways, signal timing and actuation shall be reviewed and adjusted to consider the needs of bicyclists.

APPENDIX B



Washington State
Department of Transportation

Design Manual

Volume 1 – Procedures

M 22-01.09

July 2012

Division 1 – General Information
Division 2 – Hearings, Environmental, and Permits
Division 3 – Project Documentation
Division 4 – Surveying
Division 5 – Right of Way and Access Control
Division 6 – Soils and Paving
Division 7 – Structures
Division 8 – Hydraulics
Division 9 – Roadside Development
Division 10 – Traffic Safety Elements

Engineering and Regional Operations

Development Division, Design Office

3. Signing

Provide sign type, size, and location in accordance with the MUTCD. Place path STOP signs as close to the intended stopping point as feasible. Do not place the shared-use path signs where they may confuse motorists or place roadway signs where they may confuse shared-use path users. For additional information on signing, see the MUTCD and Chapter 1020.

4. Approach Treatments

Design shared-use path and roadway intersections with level grades, and provide sight distances. Provide advance warning signs and pavement markings that alert and direct path users that there is a crossing (see the MUTCD). Do not use speed bumps or other similar surface obstructions intended to cause bicyclists to slow down. Consider some slowing features such as horizontal curves (see Exhibits 1515-2 and 1515-8). Avoid locating a crossing where there is a steep downgrade where bike speeds could be high.

5. Sight Distance

Sight distance is a principal element of roadway and path intersection design. At a minimum, provide stopping sight distance for both the roadway and the path at the crossing. Decision sight distance is desirable for the roadway traffic. Refer to Chapter 1260 for stopping sight distance for the roadway and 1515.04(5) for shared-use path stopping sight distance.

6. Curb Ramp Widths

Design curb ramps with a width equal to the shared-use path. Curb ramps and barrier-free passageways are to provide a smooth transition between the shared-use path and the roadway or sidewalk (for pedestrians). Curb ramps at path/roadway intersections must meet the requirements for curb ramps at a crosswalk. For design requirements, see Chapter 1510, and for curb ramp treatments at roundabouts, see Chapter 1320.

7. Refuge Islands

Consider refuge islands where a shared-use path crosses a roadway when one or more of the following applies:

- High motor vehicle traffic volumes and speeds
- Wide roadways
- Use by the elderly, children, the disabled, or other slow-moving users

The refuge area may either be designed with the storage aligned perpendicularly across the island or be aligned diagonal (as shown in Exhibit 1515-10). The diagonal storage area has the added benefit of directing attention toward oncoming traffic since it is angled toward the direction from which traffic is approaching.

(2) At-Grade Railroad Crossings

Wherever possible, design the crossing at right angles to the rails. For signing and pavement marking for a shared-use path crossing a railroad track, see the MUTCD and the *Standard Plans*. Also, see Chapter 1510 for design of at-grade pedestrian railroad crossings.

- 1515.01 General
- 1515.02 References
- 1515.03 Definitions
- 1515.04 Shared-Use Path Design – The Basics
- 1515.05 Intersections and Crossings Design
- 1515.06 Grade Separation Structures
- 1515.07 Signing, Pavement Markings, and Illumination
- 1515.08 Restricted Use Controls
- 1515.09 Documentation

1515.01 General

Shared-use paths are designed for both transportation and recreation purposes and are used by pedestrians, bicyclists, skaters, equestrians, and other users. Some common locations for shared-use paths are along rivers, streams, ocean beachfronts, canals, utility rights of way, and abandoned railroad rights of way; within college campuses; and within and between parks as well as within existing roadway corridors. A common application is to use shared-use paths to close gaps in bicycle networks. There might also be situations where such facilities can be provided as part of planned developments. Where a shared-use path is designed to parallel a roadway, provide a separation between the path and the vehicular traveled way in accordance with this chapter.

As with any roadway project, shared-use path projects need to fit into the context of a multimodal community. Exhibits are provided throughout this chapter to illustrate possible design solutions, which should be treated with appropriate flexibility as long as doing so complies with corresponding laws, regulations, standards, and guidance. Engage various discipline experts, including landscape architects, soil and pavement engineers, maintenance staff, traffic control experts, ADA and bicycle coordinators, and others. Additionally, when designing such facilities, consider way-finding.

This chapter includes technical provisions for making shared-use paths accessible to persons with disabilities. Design shared-use paths and roadway crossings in consultation with your region's ADA Coordinator, Bicycle Coordinator, and State Bicycle and Pedestrian Coordinator. For additional information on pedestrian and bicycle facilities, see Chapters 1510 and 1520, respectively.

1515.02 References

(1) Federal/State Laws and Codes

Americans with Disabilities Act of 1990 (ADA)

ADA (28 CFR Part 35, as revised September 15, 2010)

23 CFR Part 652, Pedestrian and Bicycle Accommodations and Projects

49 CFR Part 27, Nondiscrimination on the Basis of Disability in Programs or Activities Receiving Federal Financial Assistance (Section 504 of the Rehabilitation Act of 1973 implementing regulations)

