Wisconsin Manual on Uniform Traffic Control Devices

11th Edition Overview

Part 9 – Traffic Control for Bicycle Facilities

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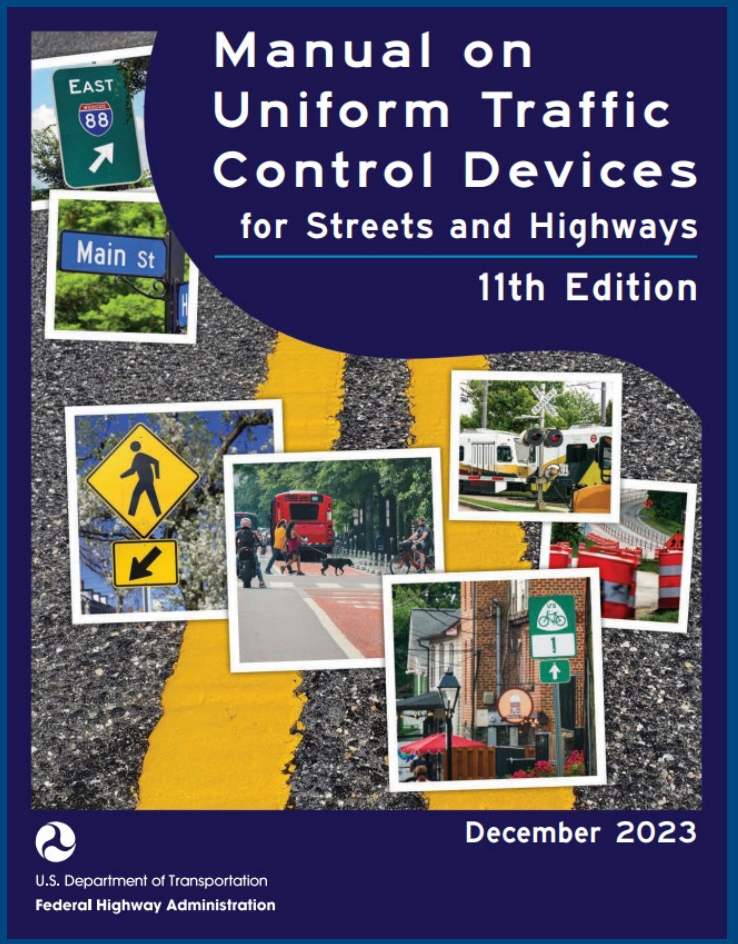
May 14th, 2026

WISCONSIN DEPARTMENT OF TRANSPORTATION

Manual on Uniform Traffic Control Devices

MUTCD \'em-yü-ˌtē-sē-dē\[1] *n* (ca. 1935): the national standard for traffic control devices on all roads open to public travel in the United States.

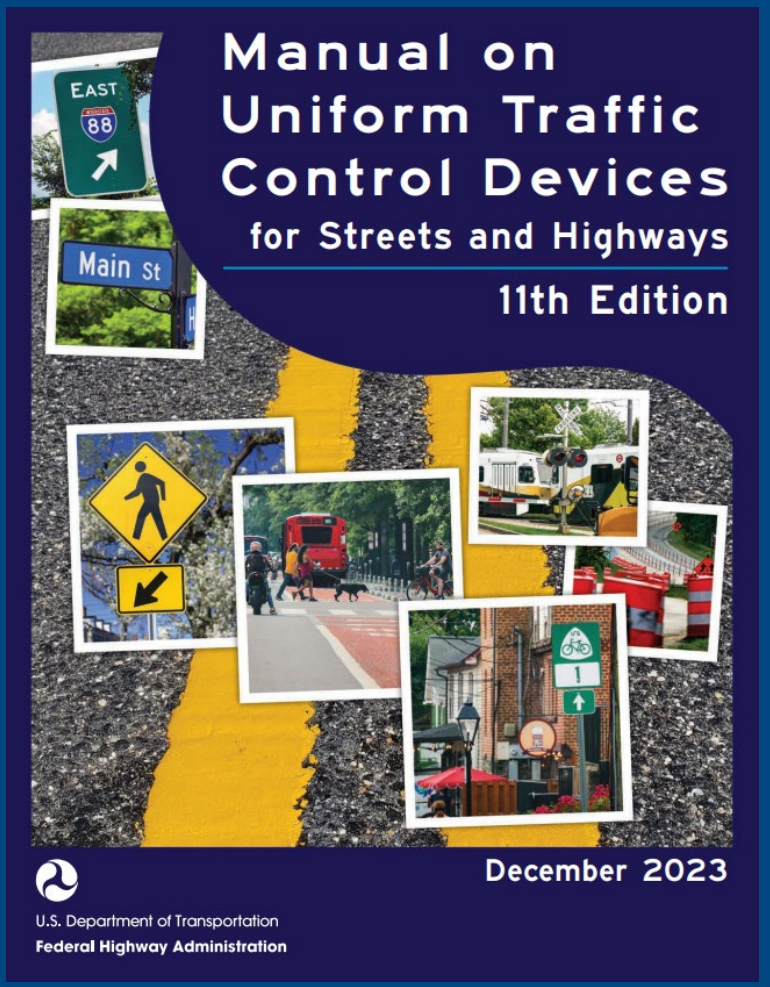
- Contains Standards and Guidelines for Traffic Control Devices
- Required for all Roadways Open to Public Travel – U.S. Code of Federal Regulations
- Essential to have nationwide consistency in traffic control standards



11th Edition of the MUTCD

- Wisconsin must adopt a state manual per State Statute 84.02(4).
- Local Units of Government must follow the manual, per State Statute 349.065
- Wisconsin Develops a State MUTCD (WMUTCD)

* State Supplements and State MUTCDs must be in **Substantial Conformance** w/ the National MUTCD



Development of the WMUTCD

Why Wisconsin Develops a State MUTCD

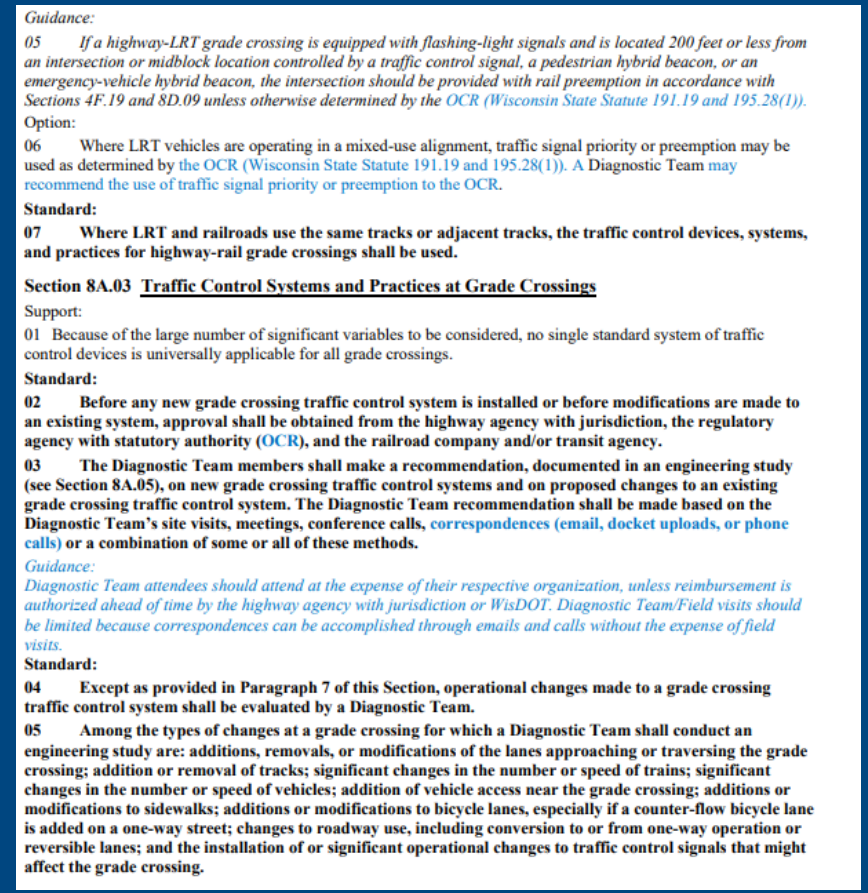
- Combines State Specific Standards, Guidelines and Statutory references with the Federal MUTCD language.
- Provide additional supporting information.
- Utilizing two separate documents (MUTCD and Supplement) is cumbersome for the practitioner.
- WisDOT officially combined the supplement and 2009 MUTCD in 2017.

Manual on Uniform Traffic Control Devices

Definitions of Headings

- **Standard:** required, mandatory, or specifically prohibited practice; “shall”; **bold text**
- **Guidance:** recommended practice, deviations allowed; “should”; *italicized*
- **Option:** statement of practice with no requirement or recommendation; “may”
- **Support:** informational statement, no degree of mandate

*WMUTCD-specific text is in blue



Guidance:

05 If a highway-LRT grade crossing is equipped with flashing-light signals and is located 200 feet or less from an intersection or midblock location controlled by a traffic control signal, a pedestrian hybrid beacon, or an emergency-vehicle hybrid beacon, the intersection should be provided with rail preemption in accordance with Sections 4F.19 and 8D.09 unless otherwise determined by the OCR (Wisconsin State Statute 191.19 and 195.28(1)).

Option:

06 Where LRT vehicles are operating in a mixed-use alignment, traffic signal priority or preemption may be used as determined by the OCR (Wisconsin State Statute 191.19 and 195.28(1)). A Diagnostic Team may recommend the use of traffic signal priority or preemption to the OCR.

Standard:

07 Where LRT and railroads use the same tracks or adjacent tracks, the traffic control devices, systems, and practices for highway-rail grade crossings shall be used.

Section 8A.03 Traffic Control Systems and Practices at Grade Crossings

Support:

01 Because of the large number of significant variables to be considered, no single standard system of traffic control devices is universally applicable for all grade crossings.

Standard:

02 Before any new grade crossing traffic control system is installed or before modifications are made to an existing system, approval shall be obtained from the highway agency with jurisdiction, the regulatory agency with statutory authority (OCR), and the railroad company and/or transit agency.

03 The Diagnostic Team members shall make a recommendation, documented in an engineering study (see Section 8A.05), on new grade crossing traffic control systems and on proposed changes to an existing grade crossing traffic control system. The Diagnostic Team recommendation shall be made based on the Diagnostic Team’s site visits, meetings, conference calls, correspondences (email, docket uploads, or phone calls) or a combination of some or all of these methods.

Guidance:

Diagnostic Team attendees should attend at the expense of their respective organization, unless reimbursement is authorized ahead of time by the highway agency with jurisdiction or WisDOT. Diagnostic Team/Field visits should be limited because correspondences can be accomplished through emails and calls without the expense of field visits.

Standard:

04 Except as provided in Paragraph 7 of this Section, operational changes made to a grade crossing traffic control system shall be evaluated by a Diagnostic Team.

05 Among the types of changes at a grade crossing for which a Diagnostic Team shall conduct an engineering study are: additions, removals, or modifications of the lanes approaching or traversing the grade crossing; addition or removal of tracks; significant changes in the number or speed of trains; significant changes in the number or speed of vehicles; addition of vehicle access near the grade crossing; additions or modifications to sidewalks; additions or modifications to bicycle lanes, especially if a counter-flow bicycle lane is added on a one-way street; changes to roadway use, including conversion to or from one-way operation or reversible lanes; and the installation of or significant operational changes to traffic control signals that might affect the grade crossing.

Yield Markings and Signs

R9-6

- Part 3 allows for *optional* R9-6 Bicycles Yield to Pedestrian sign at yield markings for pedestrian crossings
  - Also addressed in Section 9B.12

- This allows for the use of a smaller Yield to Peds sign on bikeways

Section 3B.19 Stop and Yield Lines

Option:

01 Stop lines may be used to indicate the point behind which vehicles are required to stop in compliance with a STOP (R1-1) sign, a Stop Here for Pedestrians (R1-5b) sign, a Stop Here for School Crossing (R1-5c) sign, a Stop Here for Trail Crossing (R-5e) sign, or some other traffic control device that requires vehicles to stop, except YIELD signs that are not associated with passive grade crossings.

Option:

11 If a yield line marking is used on a bicycle facility, a Bicycles Yield to Pedestrians (R9-6) sign (see Section 9B-12) may be used.

Section 9B.12 Bicycles Yield to Peds Sign (R9-6)

Option:

01 The Bicycles Yield to Peds (R9-6) sign (see Figure 9B-1) may be used at locations where a bicyclist is required to cross or share a facility used by pedestrians and is required to yield to the pedestrians.

Standard:

02 **Where the Bicycles Yield to Peds sign is supported by a yield line pavement marking (see Section 3B.19) to establish the yielding point, the sign and the pavement marking shall be installed adjacent to each other.**

03 **The Bicycles Yield to Peds sign shall not be used in bicycle corridors to establish a programmatic regulation where no yielding point exists.**

04 **The Bicycles Yield to Peds sign shall not be used in conjunction with a STOP or YIELD sign, Yield Here to Pedestrians Sign, or a Stop Here for Pedestrians Sign.**

Yield Markings and Signs

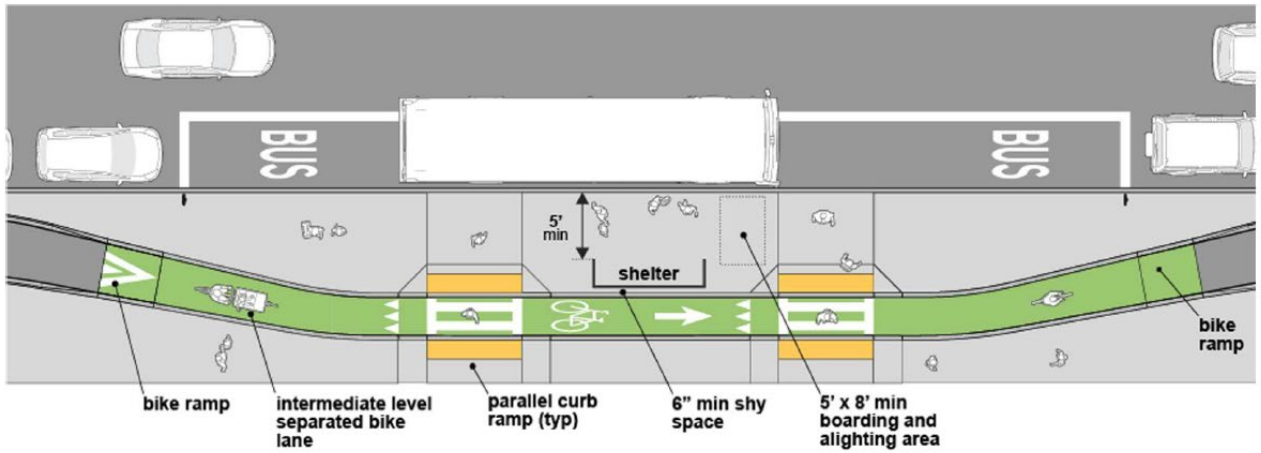
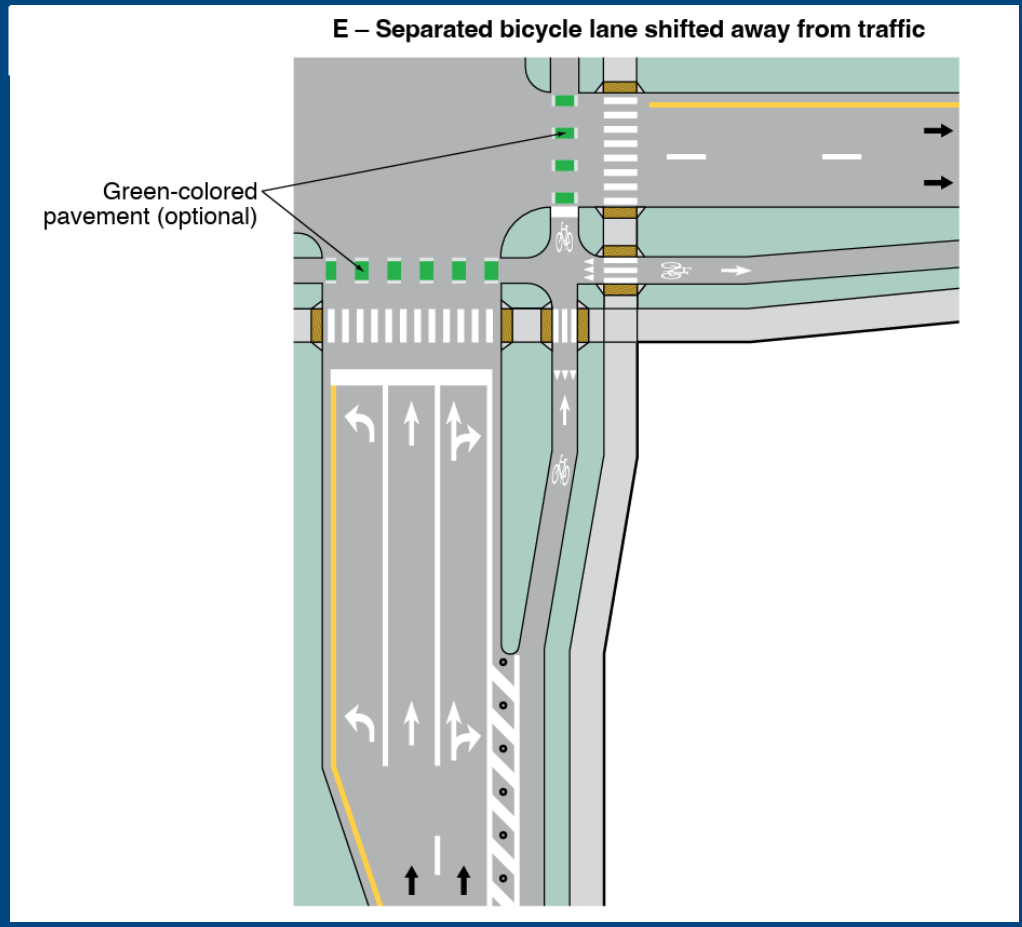


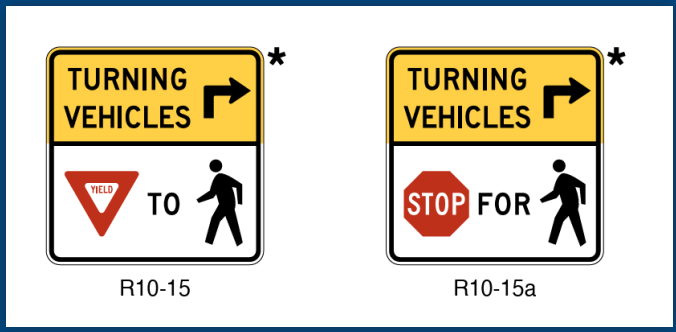
Figure 10-15: Mid-Block Floating Bus Stop with Intermediate Level Separated Bike Lane



Turning Motorists Yield to Bicyclists

- Part 2 added bike symbols to R1-5 series signs, however;
- Part 9 does not incorporate a bike symbol into the R10-15 series
  - Some agencies have used the request to experiment process to include combined bike/ped symbol
- Part 9 added a new Left Turn Yield to Bikes Sign

R1-5d



R10-15 R10-15a

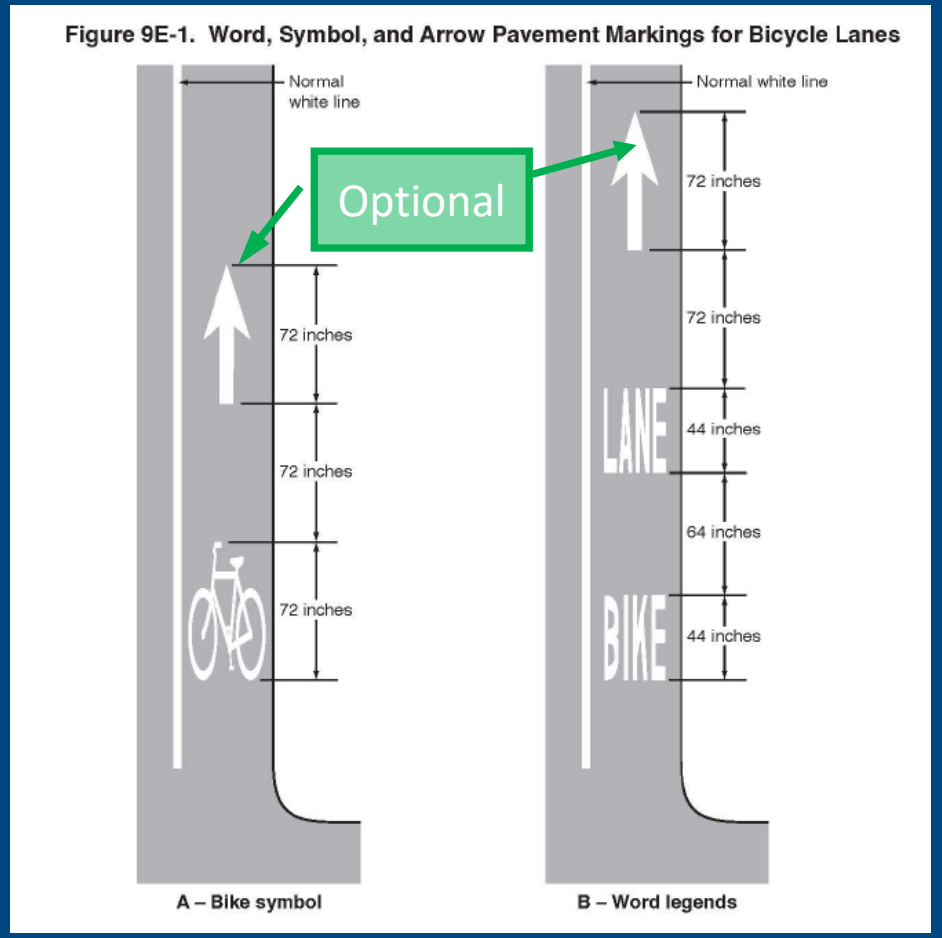
R10-12b

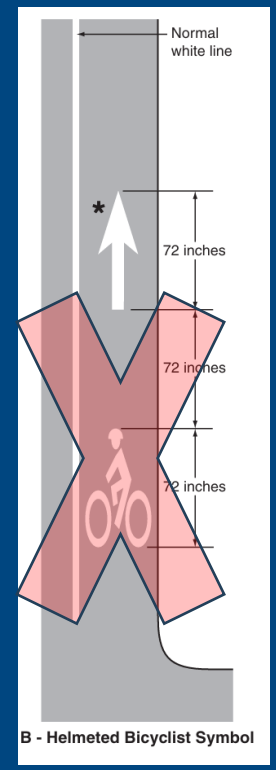
Shared Lane Signage

- W16-1P Share the Road eliminated
- See Sections 2C.67 and 9C.08
- W11-1 Bicycle Warning sign may be used with W16-1P or W16-1aP

Bike Lanes

- Bike lane markings are defined by linear markings with bike lane symbol or word markings (9E.01)
- Symbol or word should be placed at the beginning of the bike lane and after major intersections
  - Marking frequency is otherwise not prescribed
- Bike lane signs are optional





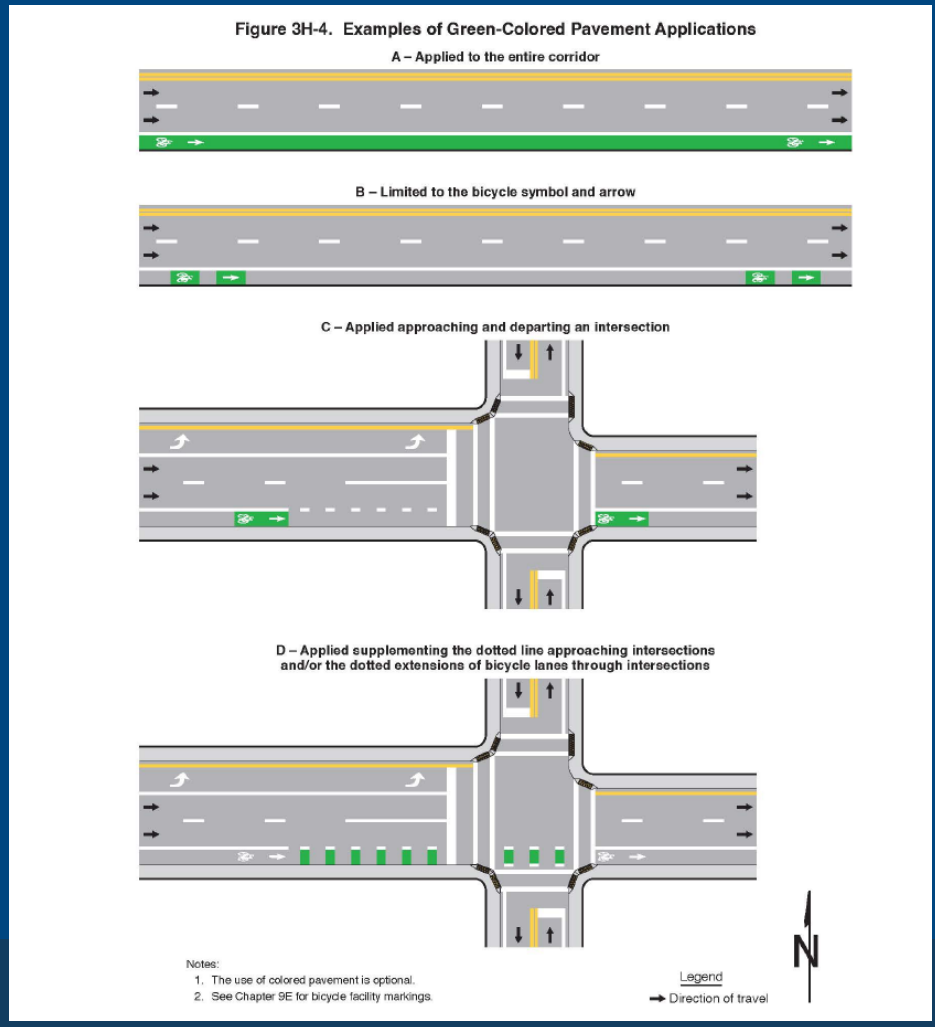
Green Pavement Markings

- No longer experimental (3H.06)
- Green markings are optional

Section 3H.06 Green-Colored Pavement for Bicycle Facilities

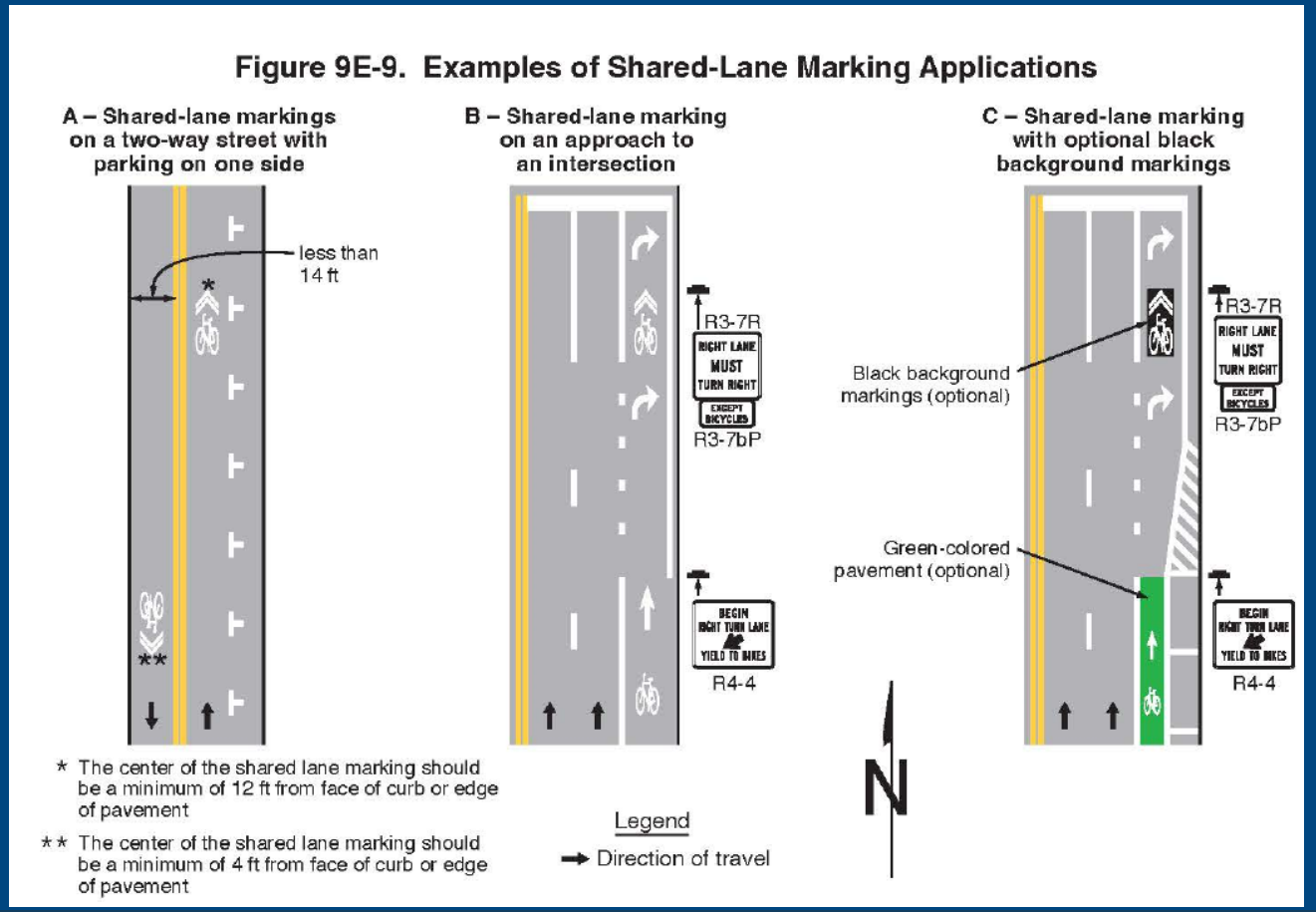
Support:

01 Green-colored pavement is used to enhance the conspicuity of locations where bicyclists are expected to operate, and areas where bicyclists and other traffic might have potentially conflicting, weaving, or crossing movements. Green-colored pavement is also used to enhance the conspicuity of word, symbol, and/or arrow pavement markings when these markings are used in certain bicycle facilities.



Green Pavement Markings – Shared Lanes

- Green-backed shared lane markings are prohibited (9E.09)
- Black background markings are permitted, but untested



Bike Lanes to the Right of Right Turn Lanes

- Part 1 defines a separated bike lane as a type of bicycle lane
- Section 9E.02 prohibits bike lanes to the right of right turn only lanes unless the bike movement is phase separated
- This was a change from the draft edition
  - NCUTCD and other agencies are aware of ambiguity – keep watch for updates

Section 1C.02 Definitions of Words and Phrases Used in this Manual

25. Bicycle Lane—a portion of a roadway that has been designated for preferential or exclusive use by bicyclists. A typical bicycle lane is delineated from the adjacent general-purpose lane(s) by longitudinal pavement markings and bicycle lane symbol or word markings and, if used, signs. Other types of bicycle lanes include:

(a) Buffer-Separated Bicycle Lane—a bicycle lane that is separated from the adjacent general-purpose lane(s) by a pattern of standard longitudinal pavement markings that is wider than a normal or wide lane line marking.

(b) Counter-Flow Bicycle Lane—a one-directional bicycle lane that provides a lawful path of travel for bicycles in the opposite direction from general traffic on a roadway that allows general traffic to travel in only one direction. Counter-flow bicycle lanes are designated by the traffic control devices used for other bicycle lanes.

(c) Separated Bicycle Lane—an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element. Separated bicycle lanes are differentiated from other bicycle lanes by a vertical element.

Section 9E.02 Bicycle Lanes at Intersection Approaches

Standard:

01 **Except as provided in Paragraph 2 of this Section, a through bicycle lane shall not be positioned to the right of a right turn only lane or to the left of a left turn only lane.**

Option:

02 A through bicycle lane may be positioned to the right of a right turn only lane or to the left of a left turn only lane provided that the bicycle lane is controlled by a traffic signal that displays bicycle signal indications (see Chapter 4H).

Support:

03 Unless controlled by a bicycle signal indication, a bicyclist continuing straight through an intersection from the right of a right turn only lane or from the left of a left turn only lane would be inconsistent with normal traffic behavior and would violate the expectations of right-turning or left-turning motorists.

Bike Lanes at Intersections

Figure 9E-3. Examples of Bicycle Lane Markings on an Approach to an Intersection
(Sheet 1 of 3)

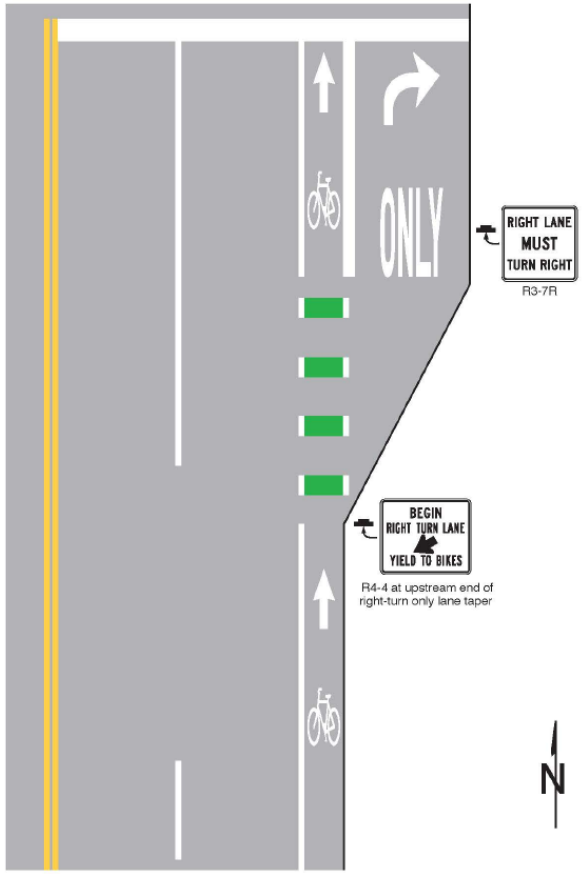


Figure 9E-3. Examples of Bicycle Lane Markings on an Approach to an Intersection
(Sheet 2 of 3)

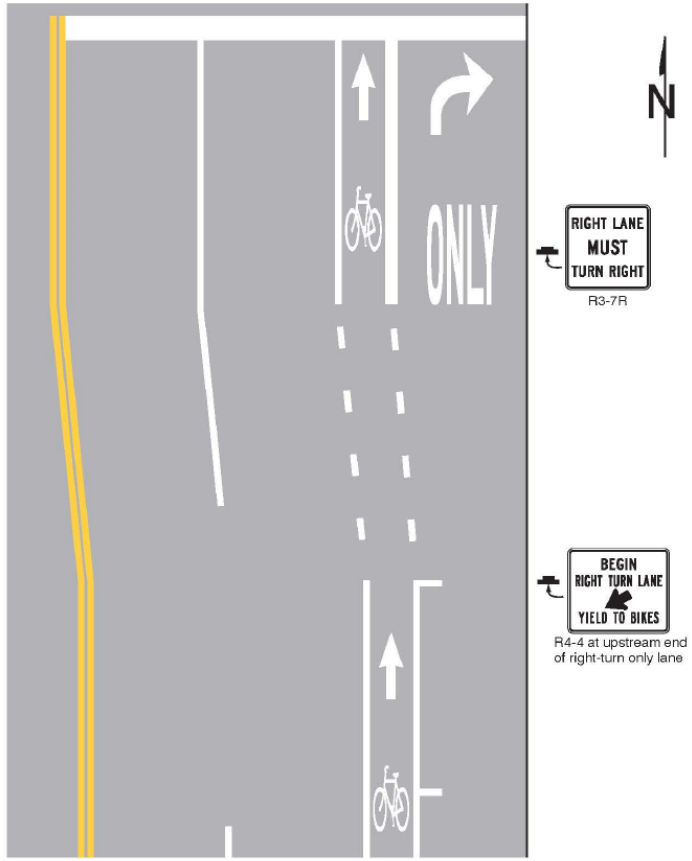
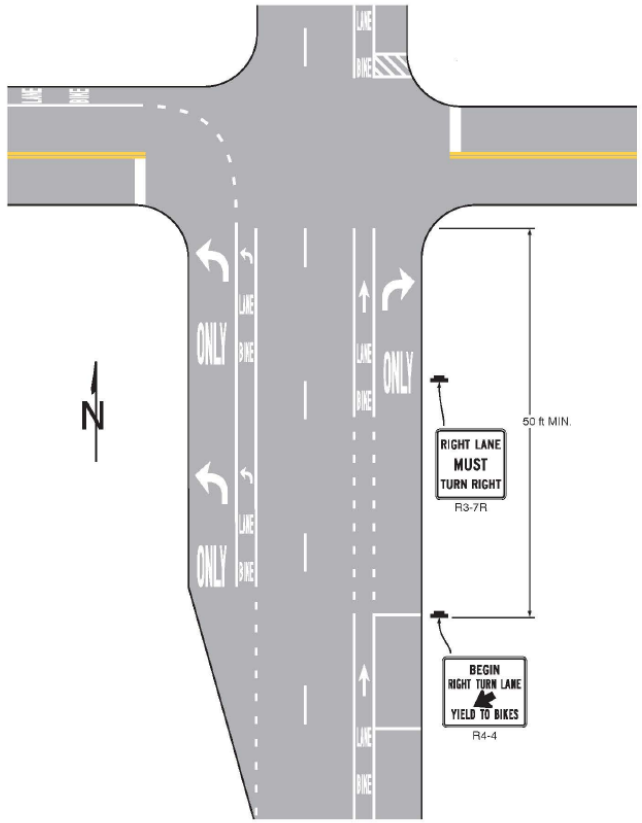


Figure 9E-3. Examples of Bicycle Lane Markings on an Approach to an Intersection
(Sheet 3 of 3)



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Bike Lanes at Intersections

- Extensions of bike lanes across intersections
  - May include any combination of the bike symbol, arrow, or word marking (9E.03.04)
  - If provided, shall used dotted line patterns (9E.03.07)

- Not allowed:
  - Solid green bike lane extensions (3E.03.5, 3H.06.4)
  - Joint cross/bike-walk – Transverse line of crosswalk shall not be used to demarcate bike lane extension (9E.03.11)

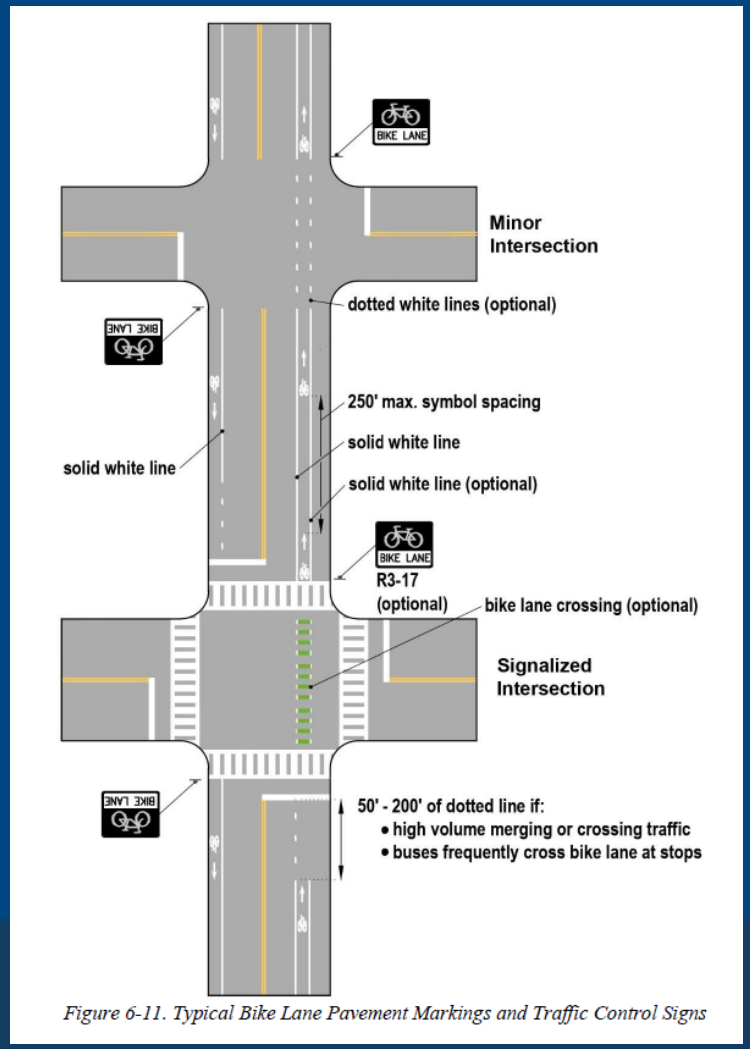


Figure 6-11. Typical Bike Lane Pavement Markings and Traffic Control Signs

Buffered Bike Lanes

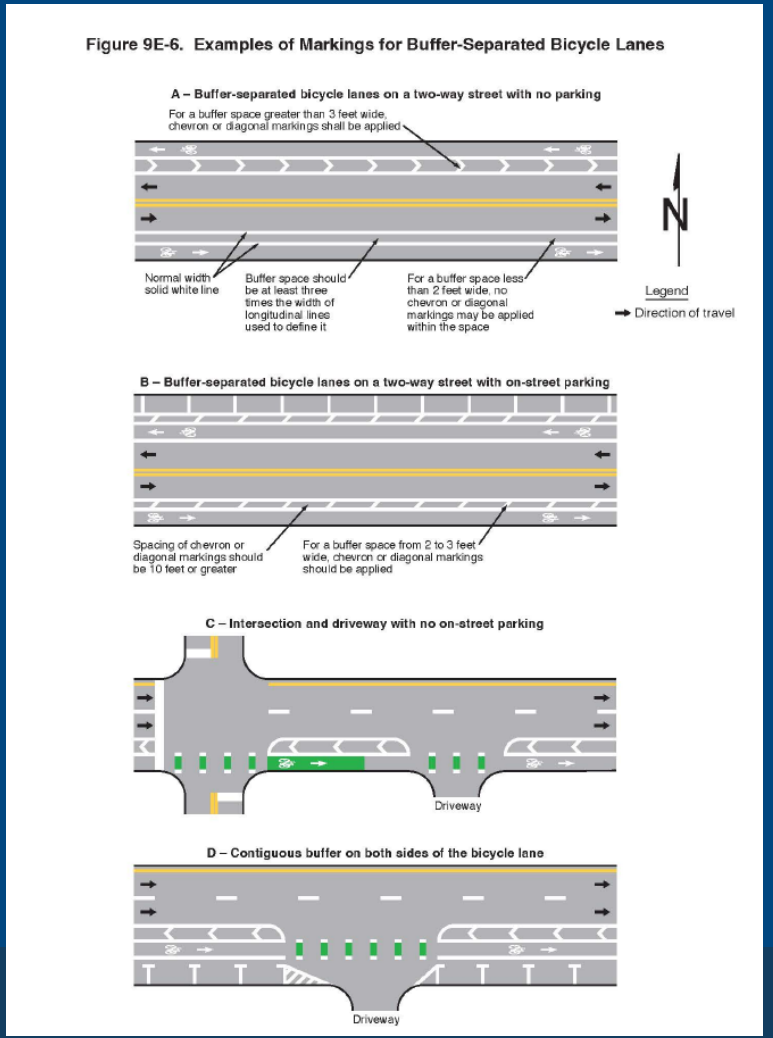
- Now included in WMUTCD (9E.06)

Section 9E.06 Buffer-Separated Bicycle Lanes

Support:

01 Buffer-separated bicycle lanes provide additional lateral separation between a bicycle lane and a general-purpose lane by a pattern of pavement markings without the presence of vertical elements. Providing a buffer space between a bicycle lane and a general-purpose lane creates more separation between motor vehicles and bicycles, can reduce vehicle encroachment into the bicycle lane, and can increase the comfort of bicyclists.

02 Providing a buffer space between a bicycle lane and a parking lane can reduce crashes involving bicycles and the opening of vehicle doors from the parking lane.



Separated Bike Lanes

- Separated from general purpose lane by vertical objects or vertical separation
  - Channelizing devices shall not incorporate the color green (9E.17.7)
  - Turns on red shall be prohibited across separated bike lanes while bicyclists are allowed to proceed through the intersection (9E.07.13)

Section 9E.07 Separated Bicycle Lanes

Support:

01 Separated bicycle lanes provide a physical separation between a general-purpose lane and a bicycle lane through the use of vertical objects or vertical separation between the general-purpose lane and bicycle lane. Providing a physical separation between a bicycle lane and a general-purpose lane can reduce vehicle encroachment into the bicycle lane beyond a marked buffer alone and can in some cases prevent that encroachment altogether.

02 Physical separation between general-purpose lanes and bicycle lanes introduces additional design considerations over buffer-separated bicycle lanes, including the awareness of a potentially unexpected conflict point for turning motor vehicles and the provision of adequate sight distance for all users at intersections and driveway crossings.

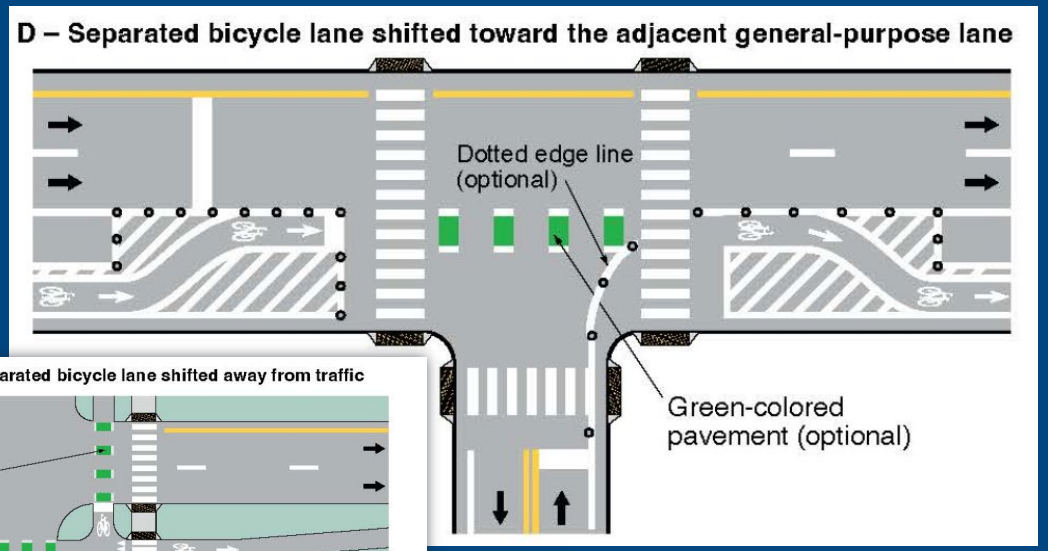
Option:

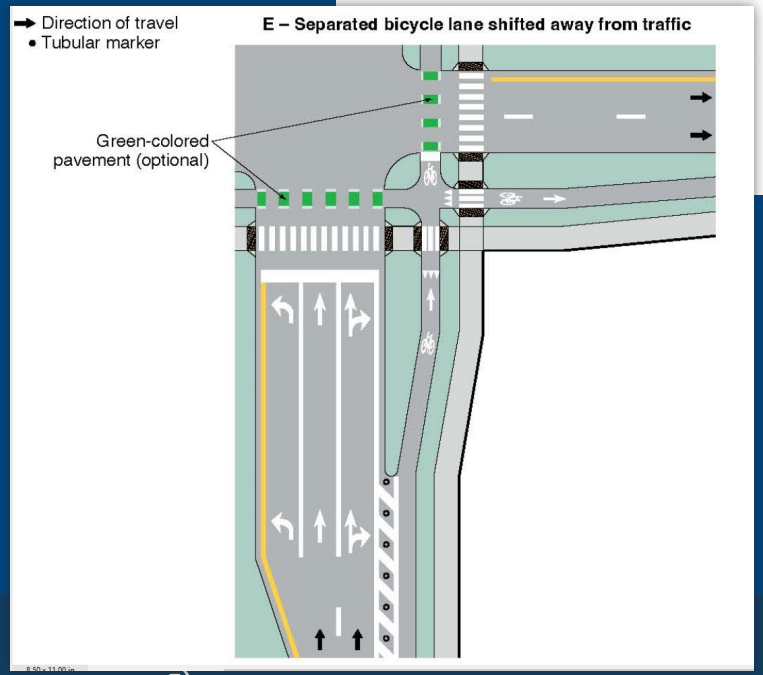
03 Vertical elements used to provide physical separation between general-purpose lanes and bicycle lanes may include, but are not limited to, tubular markers, raised islands, or parked vehicles.

Figure 9E-7. Examples of Lane Markings for Separated Bicycle Lanes (Sheet 1 of 2)

Buffered and Separated Bike Lanes at Intersections

- Bicycle Lanes at Intersection Approaches (9E.02.13)
  - A buffer-separated or separated bicycle lane may be shifted closer to, or farther away from the adjacent general-purpose lane depending on site-specific conditions (See Figure 9E-7)





Counter Flow Bike Lanes

- Shall use double yellow centerline marking, painted median island (buffer), raised median island, or some form of physical separation (9E.08.04)
  - Include more than double yellow line at higher speeds – see other design guidance

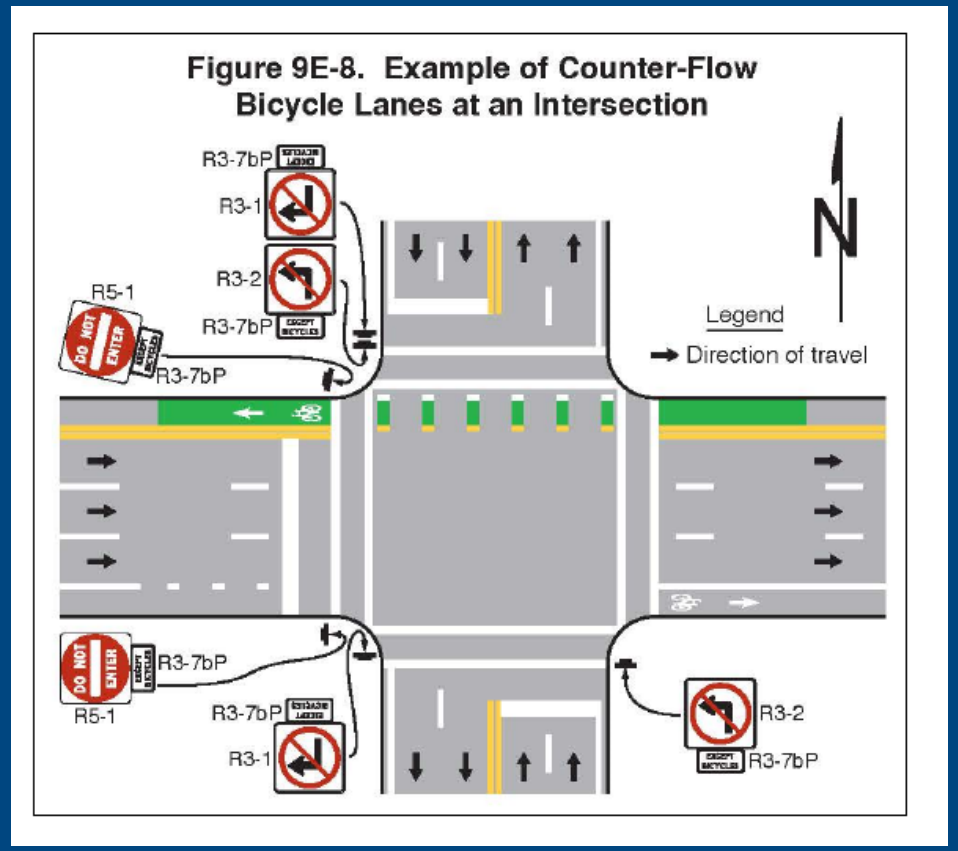
Section 9E.08 Counter-Flow Bicycle Lanes

Support:

01 Counter-flow bicycle lanes are one-directional and provide a lawful path of travel for bicycles in the opposite direction from general traffic on a roadway that allows general traffic to travel in only one direction.

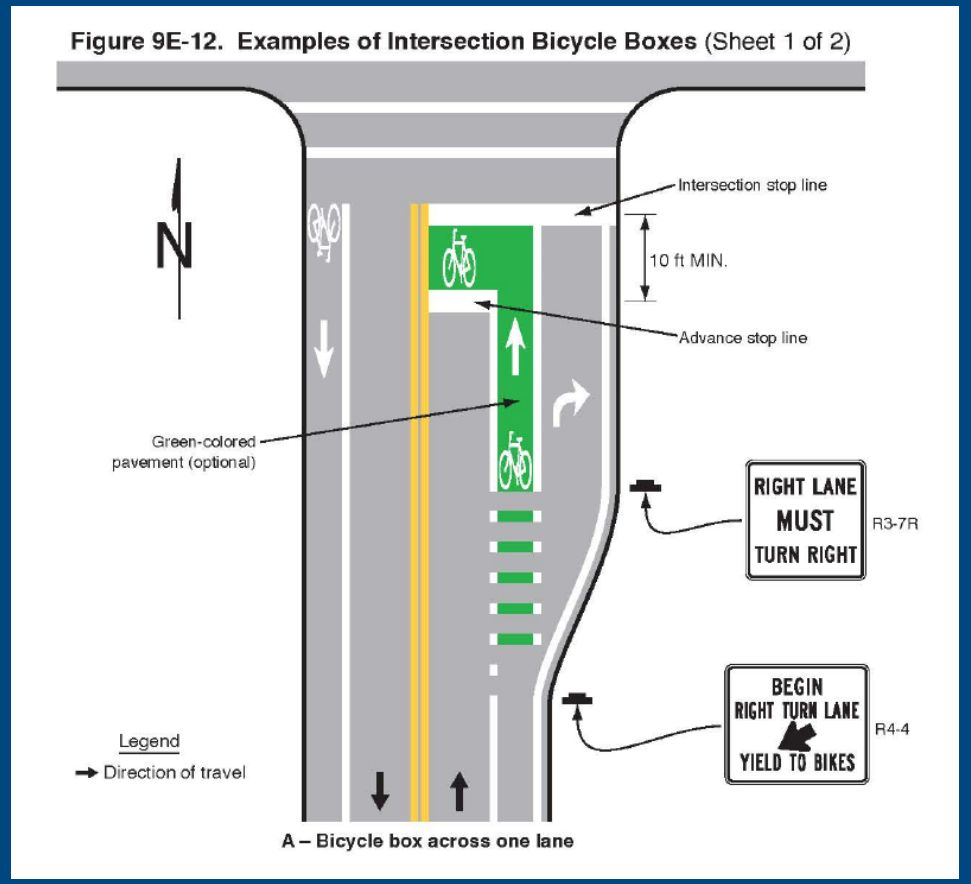
Standard:

09 Where signs are provided to regulate turns from streets or driveways that intersect with a roadway that has a counter-flow bicycle lane, ONE WAY signs (see Section 2B.49) shall not be used. Movement Prohibition signs (see Section 2B.26) with supplemental EXCEPT BICYCLES (R3-7bP) regulatory plaque(s) shall be used (see Figure 9E-8).



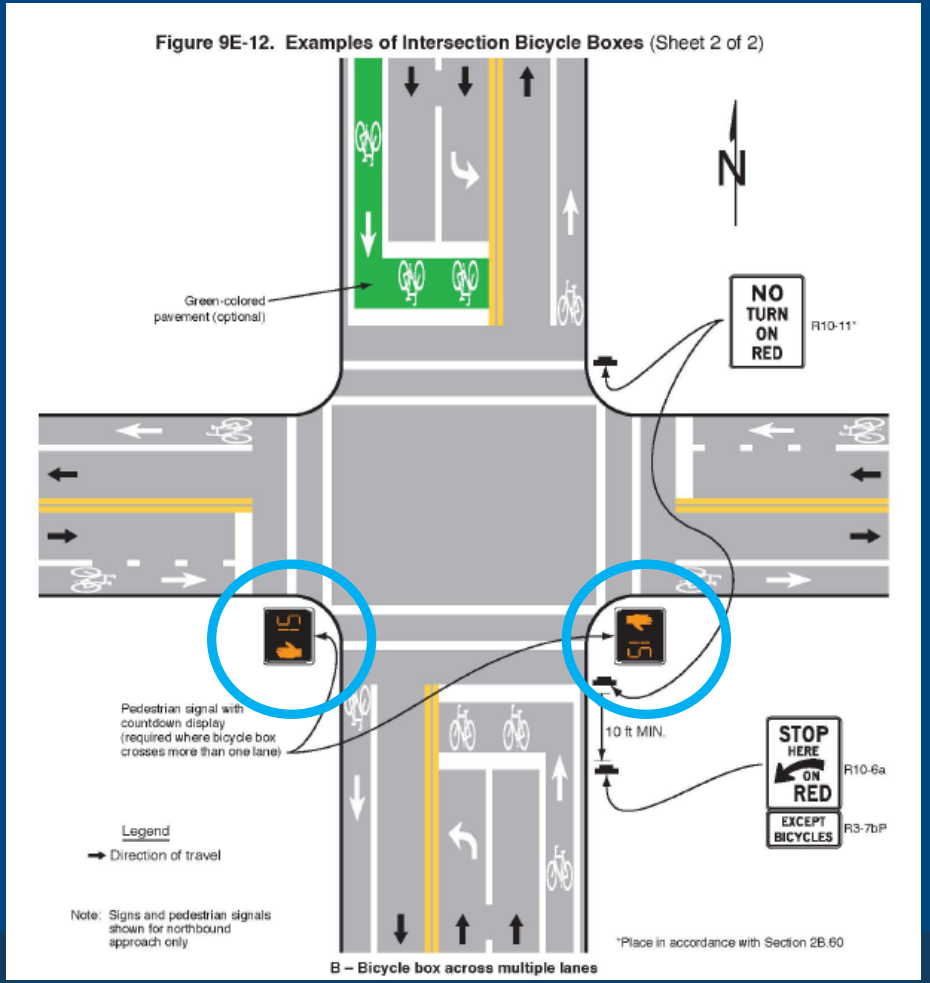
Bike Boxes

- Allowed at signalized intersections
- Shall (9E.12.6):
  - Be at least 10’ deep
  - Shall include at least one bike symbol
- No right turn on red for any lane with a bike box (9E.12.9)
- An Except Bikes plaque may be used to supplement R10-6 Stop Here on Red



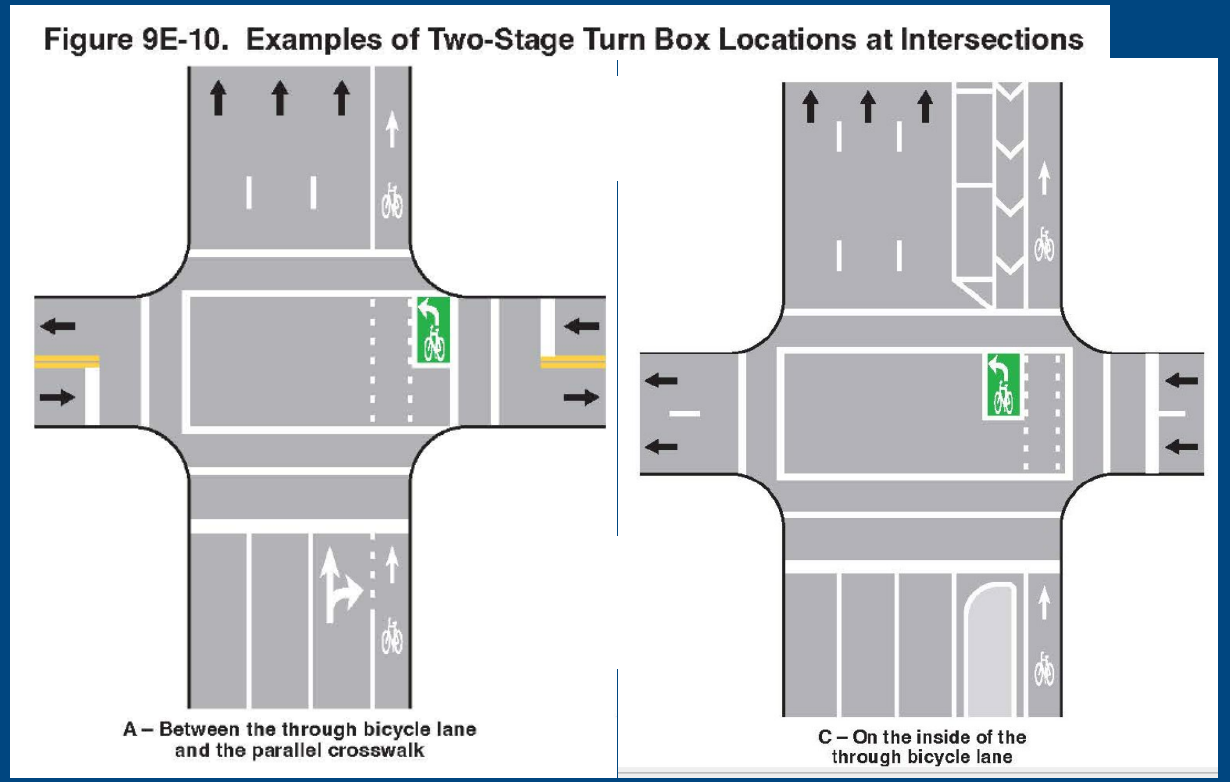
Bike Boxes

- When Bike boxes extend across multiple lanes
  - Shall include a pedestrian countdown signal without the need for actuation on the street crossing the bike lane street (9E.12.8)
  - This is for bicyclists entering the bike box



Two-Stage Turn Boxes

- Previous interim approval limited use to signalized intersections
  - 11th Edition MUTCD and WMUTCD are silent on traffic control
- Passive detection required if the signal phase to enter the 2nd stage is actuated (9E.11.09)
- No turn on red required if drivers would need to pass through the turn box (9E.11.13)
- See 9E.11 for additional details



Two-Stage Turn Boxes

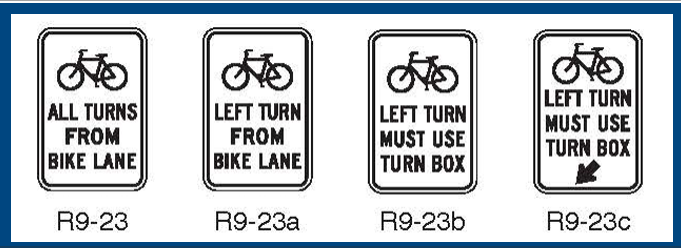
- R9-23 series signs required where bicyclists must use a turn box because general traffic cannot make the turn
  - Signs are optional when there are general travel lanes that bicyclists may use to turn

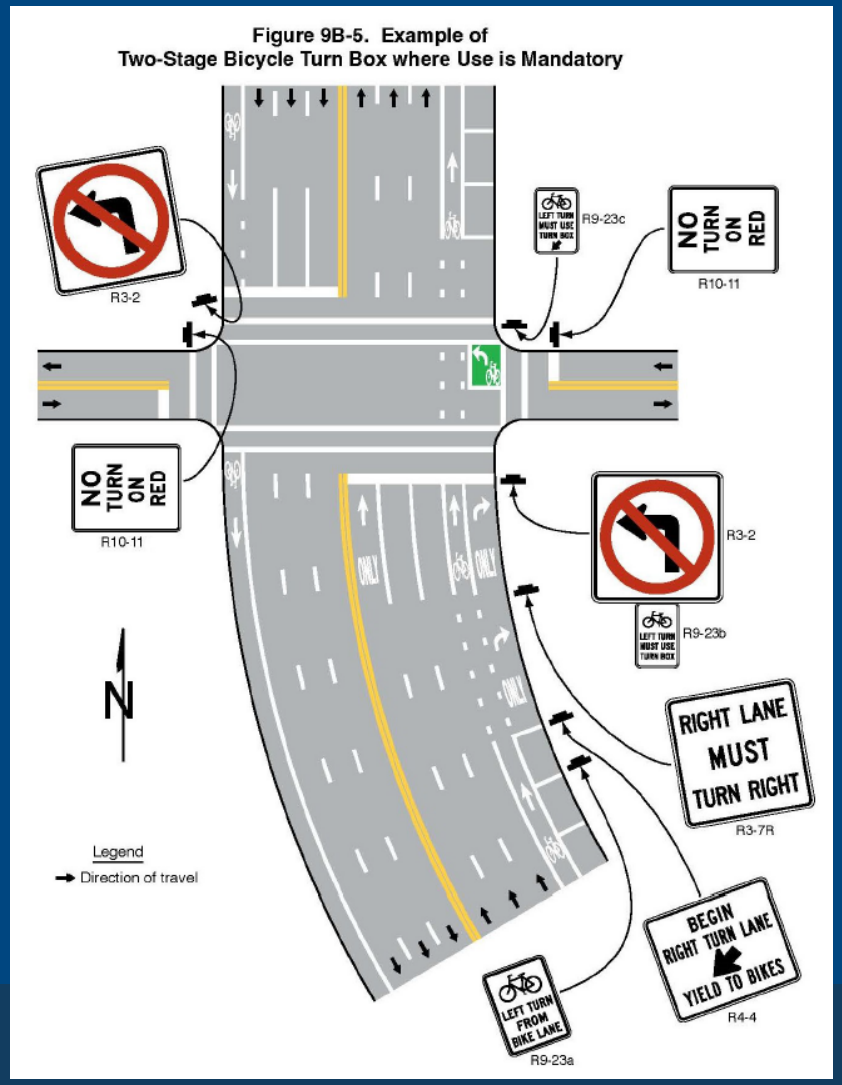
Section 9B.18 Two-Stage Bicycle Turn Box Regulatory Signing (R9-23 Series)

Support:

01 Where two-stage bicycle turn boxes are provided in an intersection, the design of an approach to that intersection will determine whether the use of a two-stage bicycle turn box is required by bicycles to facilitate a turn.

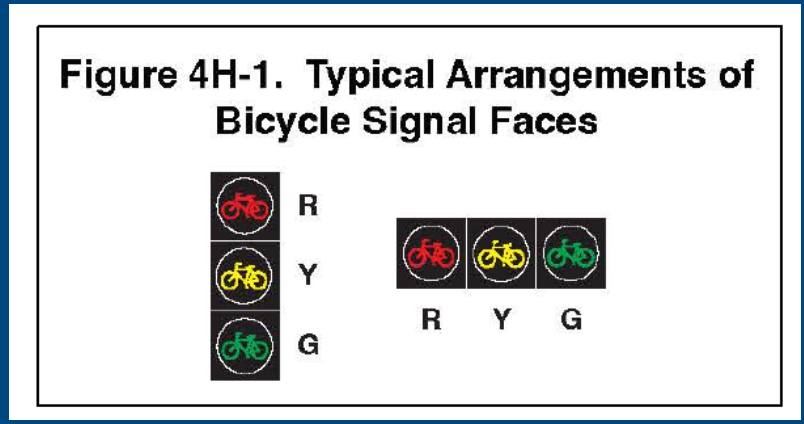
05 Where used, the Bicycle Turn Must Use Turn Box (R9-23b) sign shall be mounted at the near side of the intersection.





Bike Signals

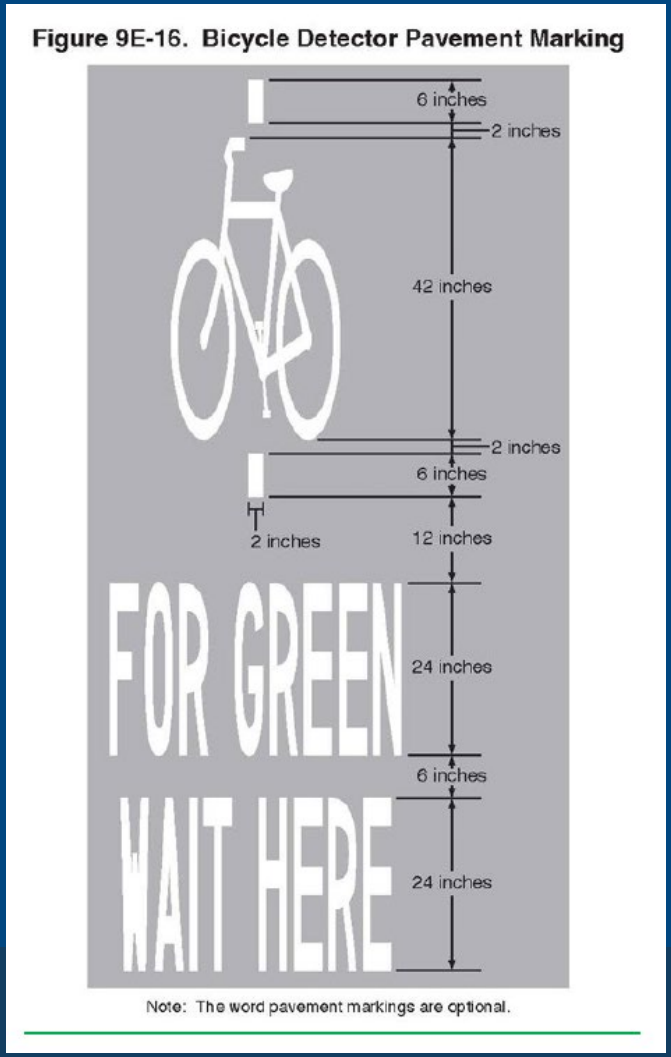
- Addressed briefly in Chapter 9F
  - For purposes of signal warrant evaluation, bicyclists may be counted as either vehicles or pedestrians (9F.01)
- See Chapter 4H for guidance on Bicycle Signal Faces
- See Chapter 9B.22 for guidance on signage at bike signals



Bike Signal Detection and Activation

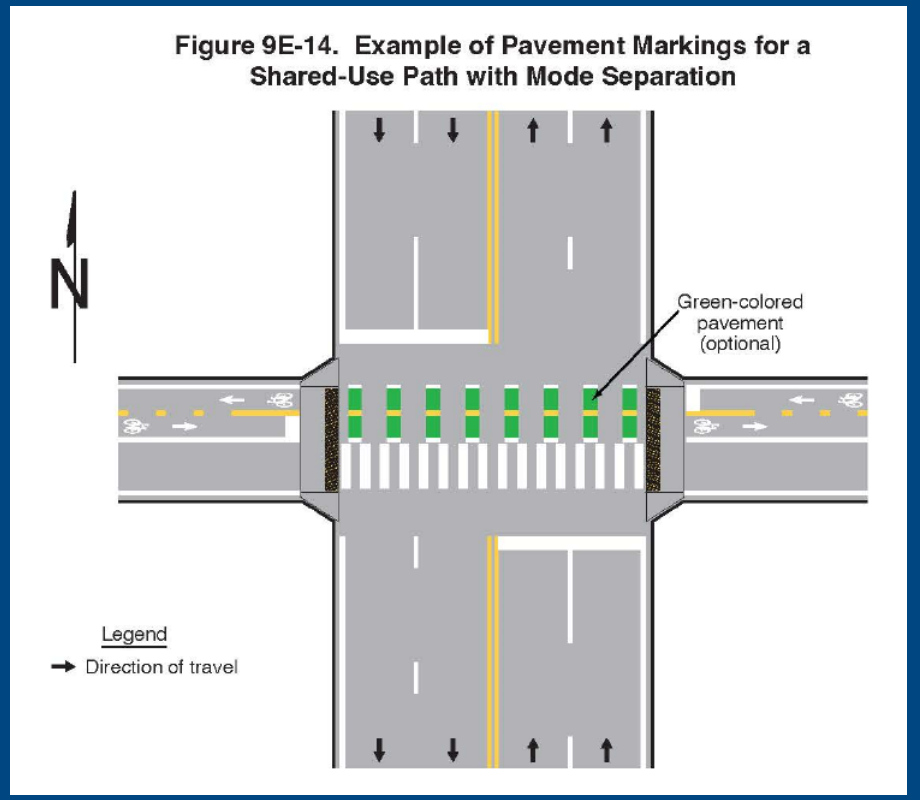
- Bicycle Detector Symbol
  - May be placed on the pavement indicating optimal position to actuate the signal (9E.15.1)
  - May use green colored-pavement as background (3H.06.2F)
  - Symbols may be accompanied by “Wait Here for Green” (9E.15.3)
  - R10-22 sign

- Bicycle Push Buttons – see 4H.12.4



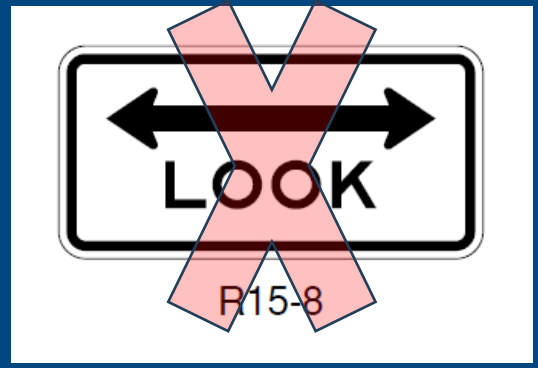
Shared Use Path Crossings

- Chapter 9E.13.5: Where a shared-use path crosses a roadway, crosswalk markings shall be used (see Chapter 3C)
  - Where pedestrian and bike movements are separated on the approach to a roadway crossing, parallel pedestrian and bike markings my be used



WMUTCD - Specific

- Chapter 9B.23 – The R15-8 LOOK sign has been removed from the WMUTCD



- Chapter 9C.04 – If used in advance of a trail crossing, a W11-15 or W11-15a sign ~~may~~ shall be supplemented with an AHEAD (W16-9P) plaque