

Bicycle Paths and Lanes

The use of bicycles for recreation, exercise, and general transportation has continued to increase both on and off public roadways. In Iowa, except where specifically prohibited, bicycles are permitted to share roads and streets with motorized vehicles. Wide variation in bicycle rider abilities and experience, slower operating speeds, and reduced visibility contribute to the challenge of providing effective signing and pavement markings for both bicycle riders and drivers who encounter bicycle traffic.

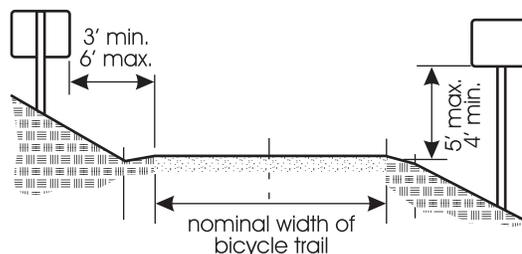
The *MUTCD* includes an entire section, Part 9, to address traffic controls for bicycle facilities in addition to references in Parts 2 and 3. Part 9 identifies several types of bicycle use facilities: bikeway, bicycle path, preferential bicycle lane, shared roadway and/or path, and designated bicycle route. Some of these are exclusive for bicycle usage; others are shared-use facilities. The *MUTCD* explains signing and marking needs for each type .

Exclusive Bicycle Facilities

Part 9 of the *MUTCD* describes required traffic control for exclusive bicycle facilities, including bicycle paths on which motorized vehicle travel is prohibited.

Signing and markings on bike paths are generally very similar to requirements for other roadways in design and application requirements including colors, lettering, symbols, retroreflectorization, and shape. Reduced sizes, in recognition of slower travel speeds and lessened right of way width, are allowed. Mounting height and lateral placement may also be reduced on exclusive bicycle facilities.

Signs. Signs are used to serve three basic purposes: regulating bicycle usage, warning of unexpected conditions, and directing riders along established routes. Overuse of signs is not recommended.



Bicycle sign placement on a trail

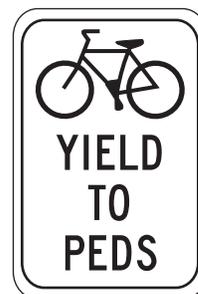
Some typical regulatory signs include Motor Vehicle Prohibition sign (R5-3) and Bicycle Restriction signs (R9-5 and R9-6). Stop (R1-1) and Yield (R1-2) signs can also be used where needed. Shared Sidewalk signs (R9-7) are suggested where bicycles and pedestrians use the same facility.



R5-3



R9-5



R9-6



R9-7



M1-8

Warning signs include the Hazardous Condition sign (W8-10), used where trail conditions could cause the rider to lose control—such as slick pavement or bridge decks, wet trail surface, or rough surface. These conditions can be further explained through the use of supplemental plaques.



W8-10 and Slippery When Wet supplemental plaque



M1-9



M4-11



M4-12

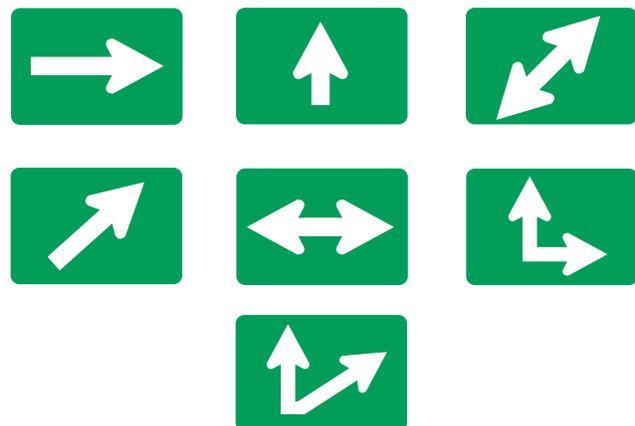


M4-13

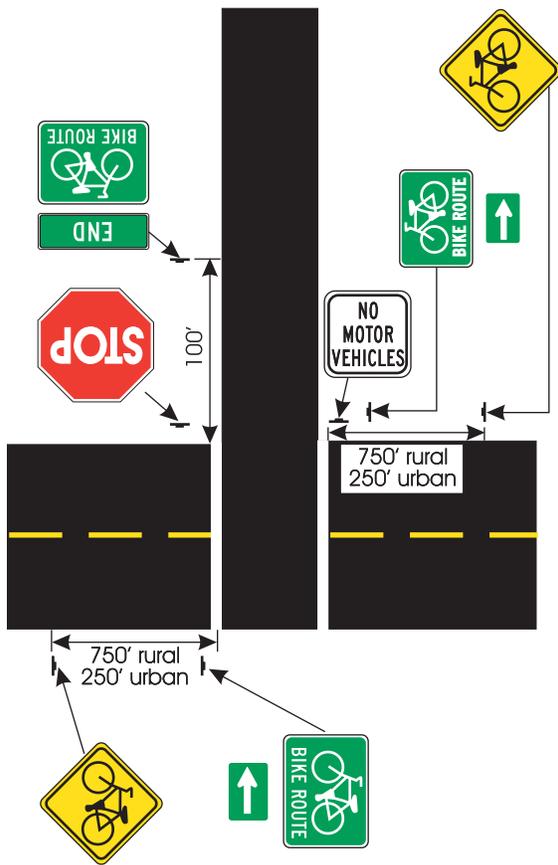
Guide signs used on bicycle trails include Bicycle Route signs (D11-1) and Bicycle Route markers (M1-8 and M1-9). These signs are green and retroreflectorized white and are placed at frequent intervals to keep riders informed of any changes in route direction. Several supplemental plaques—including Begin, End, To, and arrow designations (M7-1 through M7-7)—and specific destinations can also be effectively used.



D11-1



M7-1 through M7-7



Typical signing for beginning and ending of bicycle trail

Pavement Markings. Pavement markings can also be used effectively on exclusive bicycle facilities.

A 4-inch wide yellow center line stripe can be used to separate opposite directions of travel—broken where sight distance permits passing and solid elsewhere. This practice can be especially beneficial with heavy bicycle volumes, on curves with restricted sight distance, and on unlighted paths where nighttime riding is anticipated.

White edge lines are also beneficial where evening or night riding is expected. Even though bicycles are not equipped with strong headlights, the added visibility of retroreflectorized pavement markings can help the rider to navigate.

Shared-Use Facilities

Facilities where bicycles and motorized vehicles use the same traveled way include bikeways, designated bicycle lanes, and shared roadways. Traffic control devices on shared-use facilities must be observed by both bicycle riders and motorized vehicle operators; thus the *MUTCD* requirements for design and application described in Parts 2 and 3 are applicable.

Signs. As with exclusive bicycle facilities, signs used in shared-use facilities can be identified in three groups: regulatory, warning, and guide. Guide signing for shared-use facilities are similar to those described earlier, but dimensions should be increased to improve recognition by motorists.

Typical regulatory signs used on shared streets and roads include the Bicycle Prohibition sign (R5-6), Designated Lane signs (R3-16 and R3-17), and No Parking signs (R7-9).



R5-6



R3-16



R3-17



R7-9

The Hazardous Condition sign (W8-10) and the Hill sign (W7-1 or W7-5) are a typical warning signs on shared-use roadways where long, steep downgrades are encountered.

A Share the Road plaque (W16-1) can be used to supplement a Bicycle Crossing sign (W11-1) to advise motorists to be alert for slower moving bicycle traffic.



W7-5



W11-1 and W16-1

Bicycle Crossing Warning signs (W11-1), when installed at the actual crossing location, require the supplemental downward pointing arrow (W16-7). See Section 9B.15 of the *MUTCD* for more information.

The Bicycle Crossing sign (W11-1) is also used on roadways in advance of a designated bicycle crossing. The *MUTCD* recommends placement of these signs approximately 750 feet in advance of a crossing in rural areas with high speeds and approximately 250 feet in advance of a crossing in lower speed urban locations. When crossings occur at controlled intersections, use of this signing may not be needed. The fluorescent yellow-green color may be used for this sign.



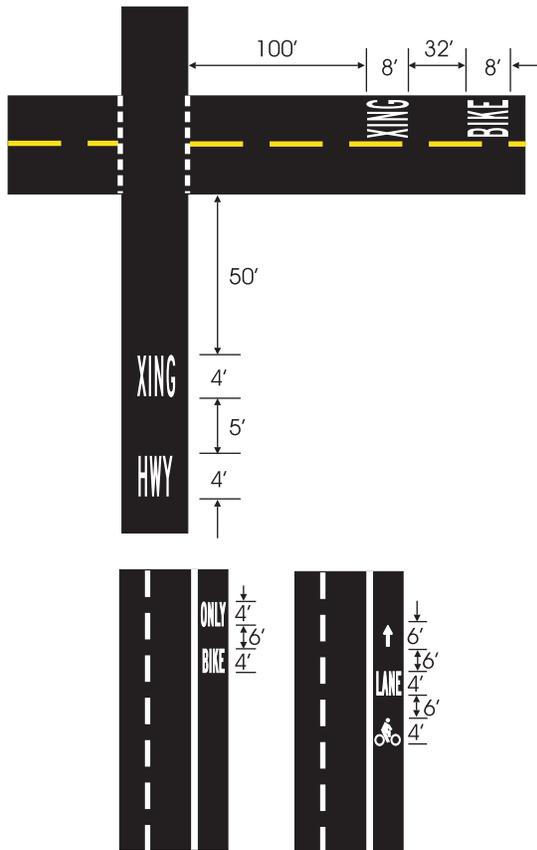
W11-1 and W16-7



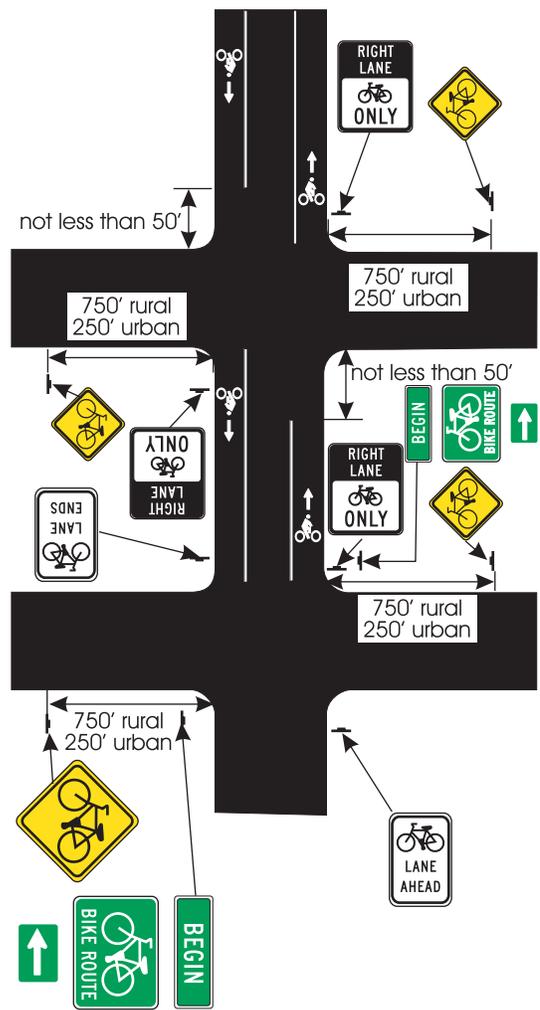
**W11-1 and W16-7
(fluorescent yellow-green)**

Pavement Markings. The use of pavement markings on roadways with designated bicycle lanes is especially important. These markings indicate a delineation of lanes for motorized vehicles and bicycle traffic, provide advance information about turning and crossing maneuvers, and can assist the bicycle rider by indicating proper travel paths.

Specific design and application recommendations for pavement markings on bicycle lanes are included in Part 9 of the *MUTCD*. These recommendations include 6-inch wide white lane lines, preferential lane symbols, word messages, and bicycle symbols. Examples of these uses are illustrated in the following figures.



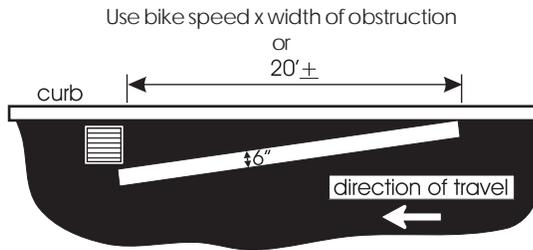
Word and symbol pavement markings for bicycle facilities



Typical signing for beginning and ending of designated bicycle lane

Refer to Part 9 of the *MUTCD* for appropriate signing recommendations.

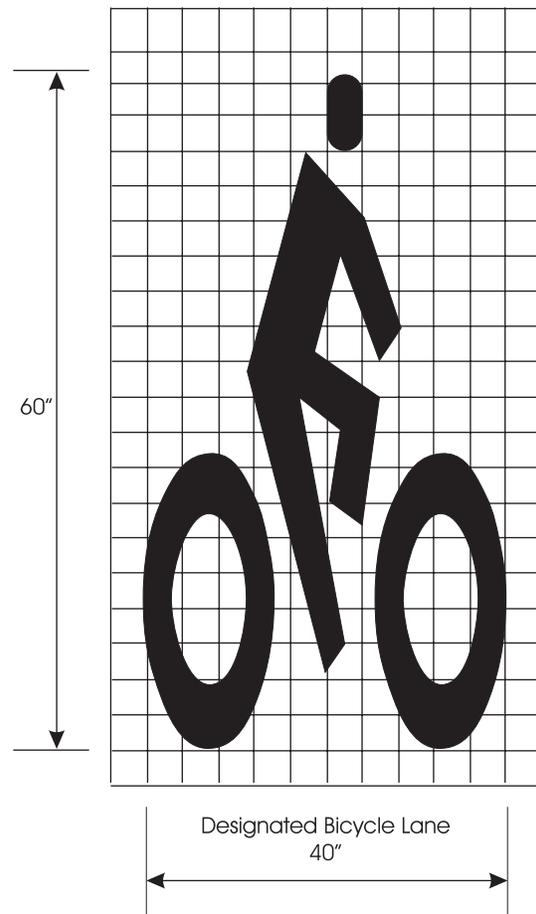
Where a storm drain or intake in the roadway cannot be avoided or modified for safe bicycle travel, the special pavement markings illustrated below can be used effectively.



Typical marking in advance of drainage hazard

Retroreflectorized object markers—Types 1, 2, or 3, as described in Chapter 3C of the *MUTCD*—can be installed at locations where objects or obstructions that could be hazardous to bicyclists are adjacent to the trail. Objects or obstructions might include utility poles, trees, and railroad tracks.

The following is the suggested bicycle pavement marking symbol for use in preferential bicycle lanes. The color of this marking should be white. A template is available from American Sten-Cyl of Mahwah, New Jersey, through LaFarge Road Marking of Omaha, Nebraska.



Suggested bicycle pavement marking for use in preferential bicycle lanes
(Template directions should be adjusted to meet requirements)