ROUNDABOUT SIGNS

Chapter for the
Proposed ITE INFORMATIONAL REPORT

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1 INTRODUCTION

This chapter is about traffic signs at roundabouts in the United States and Canada, and is written from a U.S. perspective. In the U.S. the application of traffic signs is regulated by the Manual on Uniform Traffic Control Devices (MUTCD), the latest edition of which is dated 2003. Because roundabouts are relatively new in North America, the current MUTCD lacks some specific guidance for the application of signs at roundabouts, in particular guide signs. This is expected to be rectified to some extent in the next edition of the MUTCD due in 2009.

Some additional discussion is provided on roundabout signs in the United Kingdom. Although any number of countries where roundabouts are common could have been chosen for context, the U.K. has the longest history of roundabout implementation in the world, and has the highest number of challenging sites (i.e. multi-lane roundabouts on high-speed roads). Their roundabout-specific signs have been developed from years of experience and research.

Section 2 of this chapter highlights the nine most common types of signs at roundabouts, presented in the order in which they would appear to an approaching driver. Section 3 presents a couple of example roundabout signing plans.

2 NINE ROUNDABOUT SIGNS

2.1 ROUNDABOUT AHEAD SIGNS

Roundabout Ahead signs are usually the furthest upstream on a roundabout approach. Examples from the U.S. and the U.K. are shown in Figure 2.1.

Photo: Fred Ranck

Photo: Phil Weber

Figure 2.1 U.S. and U.K. Roundabout Ahead signs. These are typical warning signs in North America and Europe. Note the different advisory tabs.

The signs indicate a roundabout, but offer no information as to the configuration of the intersection. When this information is presented downstream Roundabout Ahead signs are sometimes considered optional. They may be used as a temporary sign to warn drivers of a new roundabout, or under certain conditions such as sightline restrictions or high-speed approaches. Speed advisory or other tabs may accompany the Roundabout Ahead signs.

2.2 ADVANCE GUIDE SIGNS

Advance guide signs convey destination information. In the U.S. they can be of two types at roundabouts: conventional (or "stack-type"), and diagrammatic (or "flag-type"). See Figure 2.2. A third possible type is an overhead sign that combines destination and lane use information.

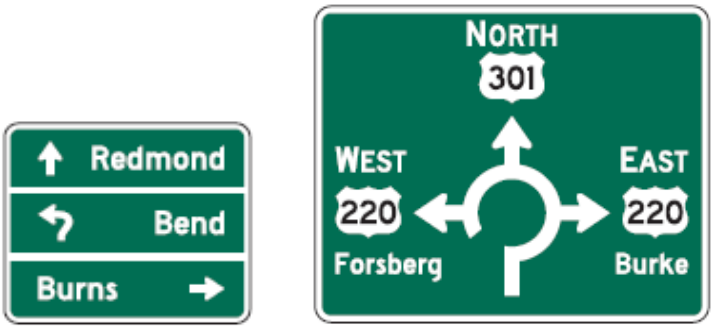


Figure 2.2 Conventional and diagrammatic advance guide signs at roundabouts (from the proposed 2009 MUTCD).

Advance guide signs at roundabouts elsewhere in the world tend to be diagrammatic. This reduces the need for Roundabout Ahead signs because the roundabout symbol is on the guide sign. Diagrammatic signs are also an advantage where roundabouts have unusual aspects to their configuration such as skewed angles, by-pass lanes or more than four approaches.

Examples of various advance diagrammatic guide signs at roundabouts in the U.S. and Canada are shown in Figure 2.3. Note how there is little consistency in the layout of the roundabout symbol and accompanying text.

Photo: Fred Hanscom

Photo: Fred Ranck

Photo: Fred Hanscom

Photo: Fred Ranck

Photo: Fred Hanscom

Photo: Phil Weber

Figure 2.3 U.S. and Canadian advance diagrammatic guide signs. Guidelines might be beneficial to ensure consistency in the layout of the roundabout symbol and accompanying text.

Two examples of advance diagrammatic guide signs in the U.K. are shown in Figure 2.4. The layout of such signs is consistent throughout the country. Unlike most North American signs, arrowheads are not used on these and most other guide signs, although they may be in continental Europe.

Photo: Phil Weber

Photo: Scott Ritchie

Figure 2.4 U.K. advance diagrammatic guide signs. Note the consistency in their layout. More important roads are denoted by wider arms on the roundabout symbol. Text is always below the horizontal arms and at the ends of all other arms.

The layout of all roundabout signs in the U.K. is specified in the Traffic Signs Manual, Chapter 7, “The Design of Traffic Signs”.

Ideally advance guide signs should be used at all roundabouts. Because of their large size it may be difficult to install advance diagrammatic guide signs where boulevard space is limited. In these cases, conventional guide signs or Roundabout Ahead signs may be appropriate instead.

2.3 YIELD AHEAD SIGNS

Typically, Yield Ahead signs are installed upstream of intersections if warranted by collision experience, sightline restrictions or poor observance of the Yield sign. They are often installed upstream of roundabouts as a permanent sign, but like Roundabout Ahead signs may be installed as a temporary sign to warn drivers of a new roundabout or as a supplemental warning sign on high-speed approaches.

2.4 LANE USE CONTROL SIGNS

As at other intersection approaches, Lane Use Control signs are needed to present entry lane choice on multi-lane roundabouts. Lane Use Control signs can be of two types at roundabouts: standard, or “fish-hook”. See Figure 2.5.

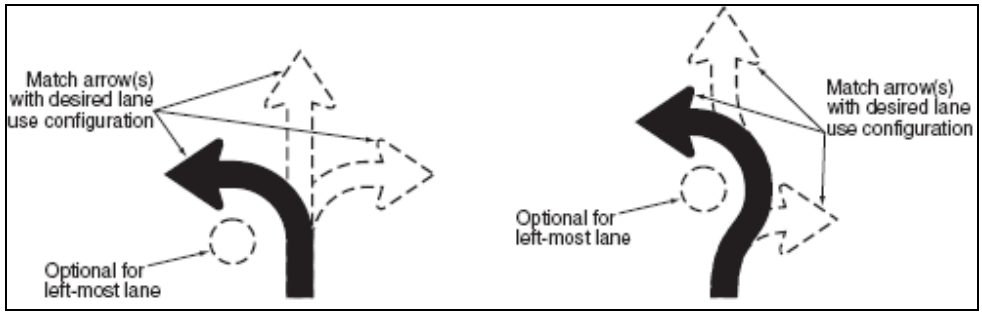


Figure 2.5 Standard and fish-hook Lane Use Control signs for roundabouts (from the proposed 2009 MUTCD).

Fish-hook signs (and pavement marking arrows) have been developed in North America because roundabouts are relatively new, and are now included in the proposed 2009 MUTCD. Some believe they may reduce the tendency of drivers to turn left at a roundabout in front of the central island. Others think this is a potential issue better addressed through good central island signs and the geometry on the approach.

Examples of various fish-hook Lane Use Control signs at roundabouts in the U.S. and Canada are shown in Figure 2.6.

Photo: Fred Hanscom

Photo: Fred Hanscom


Photo: Phil Weber

Figure 2.6 U.S. (black on white) and Canadian (white on black) fish-hook Lane Use Control signs.

Regardless of the type of Lane Use Control sign, they should be installed far enough in advance of multi-lane roundabouts so drivers are able to choose the correct entry lane and not have to make lane changes in the circulatory road.

2.5 KEEP RIGHT SIGNS

Keep Right (or Keep Left) signs are used at the ends of medians and roundabout splitter islands. Alternatively, plastic bollards illuminated with lights recessed below grade can be used, a shown in Figure 2.7. These bollards are common the U.K. and are starting to be implemented in North America.


Photo: Scott Ritchie

Photo: Phil Weber

Figure 2.7 U.S. and U.K. internally illuminated bollards. Note the different regulatory components (black on white versus white on blue) and that the U.S. bollard in this case is still supplemented by a Keep Right sign (top of photo).

Because the bollards do not rely on retro-reflectivity to be visible at night they can be seen from a greater distance than most signs. This is advantageous where roundabouts are situated at the end of one or more horizontal curves. The bollards are manufactured to deform or break away upon impact, and the recessed illumination can be made waterproof to withstand rain or snow.

2.6 PEDESTRIAN WARNING SIGNS

In general, Pedestrian Warning signs are used where crossing activity is unexpected or where a crossing location is not readily apparent. Because roundabouts are relatively

new in North America, they are sometimes installed in advance of pedestrian crossings both on the entry and exit to a roundabout.

2.7 YIELD SIGNS

Yield signs are probably the most important signs at roundabouts in North America, since they reinforce to entering drivers who may be unfamiliar with roundabouts that they must yield to circulating traffic. An example of such a sign, with additional reinforcement, in shown in Figure 2.8.

Photo: Fred Hanscom

Figure 2.8 U.S. Yield sign at roundabout. The sign may be accompanied by an instructional tab or One-Way sign.

Where space permits two Yield signs should be installed at each entry, especially with multi-lane roundabouts. It is usually the left Yield sign that is more visible because of the geometry of the approach and the fact that motorists look to the left to enter.

2.8 CENTRAL ISLAND SIGNS

Central island signs consist of One-Way signs and directional chevrons. Examples from the U.S. and U.K. are shown in Figure 2.9.

Photo: Phil Weber

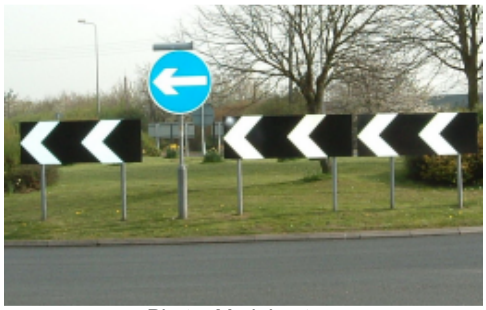


Photo: Mark Lenters

Figure 2.9 Canadian and U.K. central island signs, comprising One-Way signs and directional chevrons. The U.K. chevrons have wider black areas because of "bleeding" from the white areas.

The One-Way signs are regulatory and specify the direction of circulation, while the directional chevrons provide additional visibility to approaching drivers. Due to concerns the One-Way signs may lead drivers into thinking the cross street is one-way, the

proposed 2009 MUTCD also allows the use of black and white regulatory chevrons in lieu of the One-Way signs.

2.9 EXIT GUIDE SIGNS

Exit guide signs confirm exit leg choice at roundabouts. In the U.S. they tend to be of two types: rectangular, and pointed-end (or "flag-type"). Examples of both are shown in Figure 2.10.

Photo: Fred Ranck

Photo: Fred Hanscom

Figure 2.10 U.S. exit guide signs. As for the advance diagrammatic guide signs, guidelines might be beneficial to ensure consistency in their layout.

Exit guide signs at roundabouts in the U.K. and continental Europe have pointed ends. An example is shown in Figure 2.11.

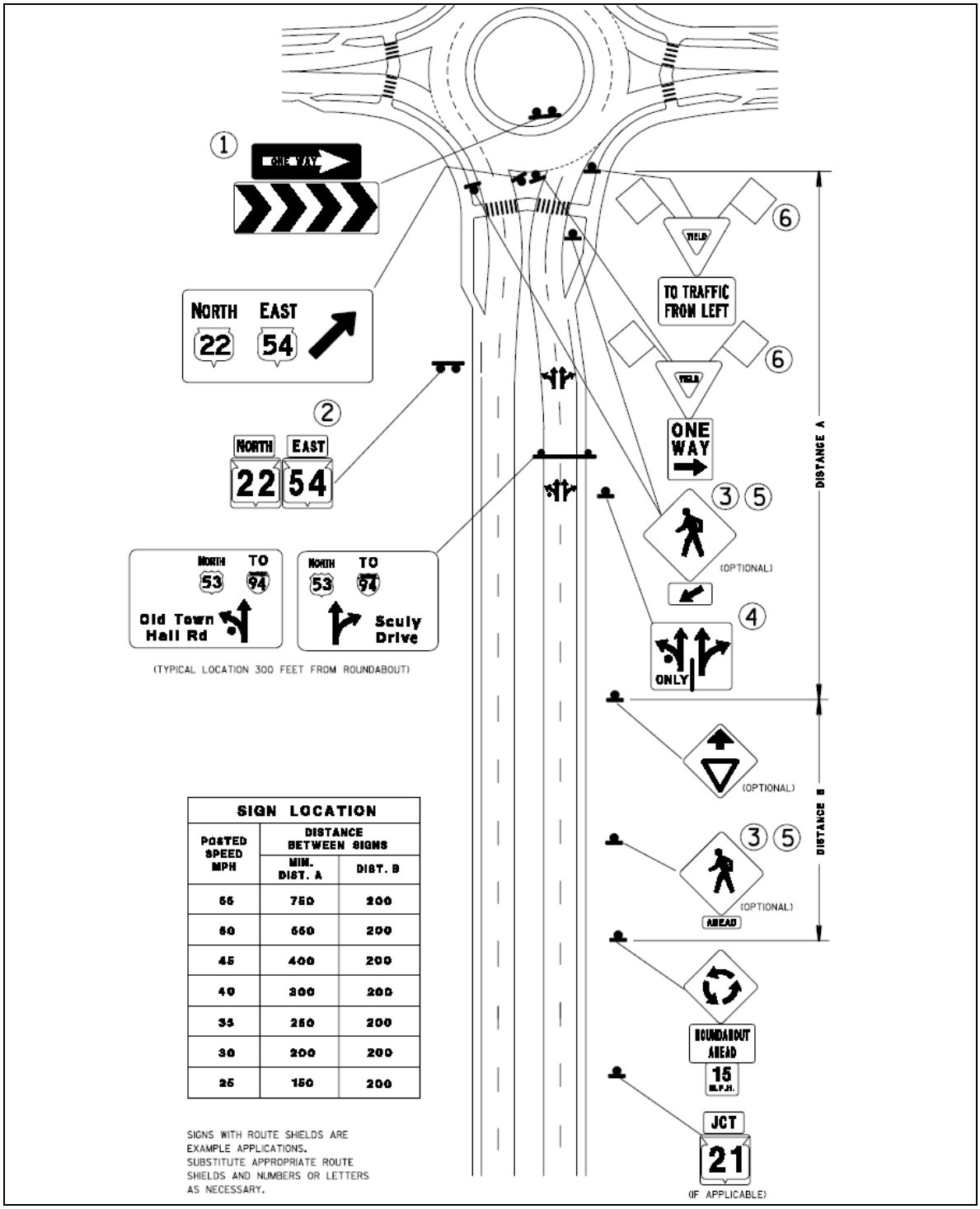
Photo: Mark Lenters

Figure 2.11 U.K. exit guide signs. All such signs in the U.K. have pointed ends. Sometimes the amount of information can make it difficult to determine a single destination.

Exit guide signs are usually installed in the splitter islands facing circulating drivers, although they are sometimes installed on the nearside boulevard instead.

3 EXAMPLE SIGNING PLANS

A number of U.S. states have developed signing plans in their local roundabout guidelines. Two examples from the state of Wisconsin are shown in Figures 3.1 and 3.2. Example signing plans are also included in the proposed 2009 MUTCD.



SIGN LOCATION		
POSTED SPEED MPH	DISTANCE BETWEEN SIGNS	
	MIN. DIST. A	DIST. B
55	750	200
50	550	200
45	400	200
40	300	200
35	250	200
30	200	200
25	150	200

SIGNS WITH ROUTE SHIELDS ARE EXAMPLE APPLICATIONS. SUBSTITUTE APPROPRIATE ROUTE SHIELDS AND NUMBERS OR LETTERS AS NECESSARY.

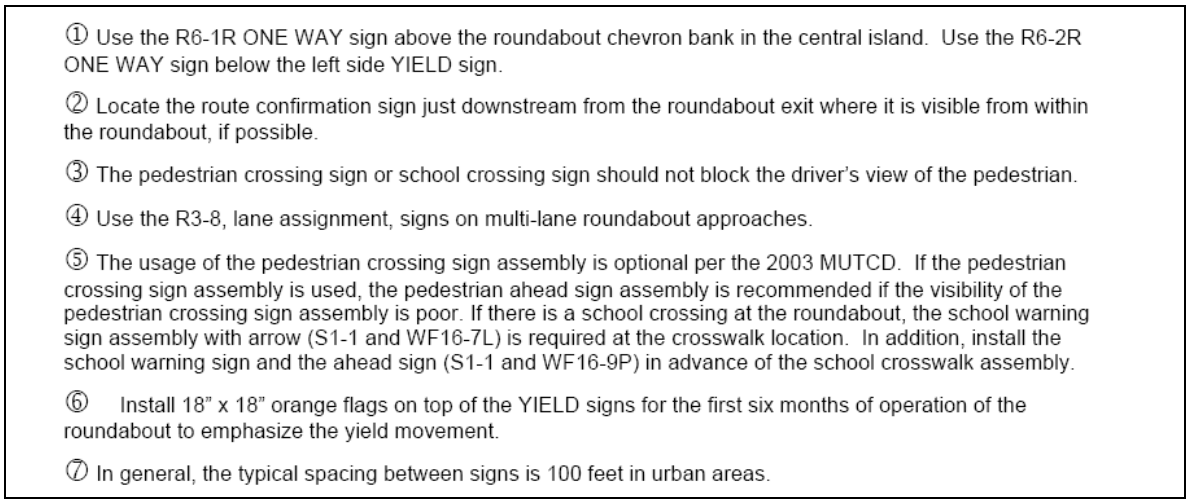
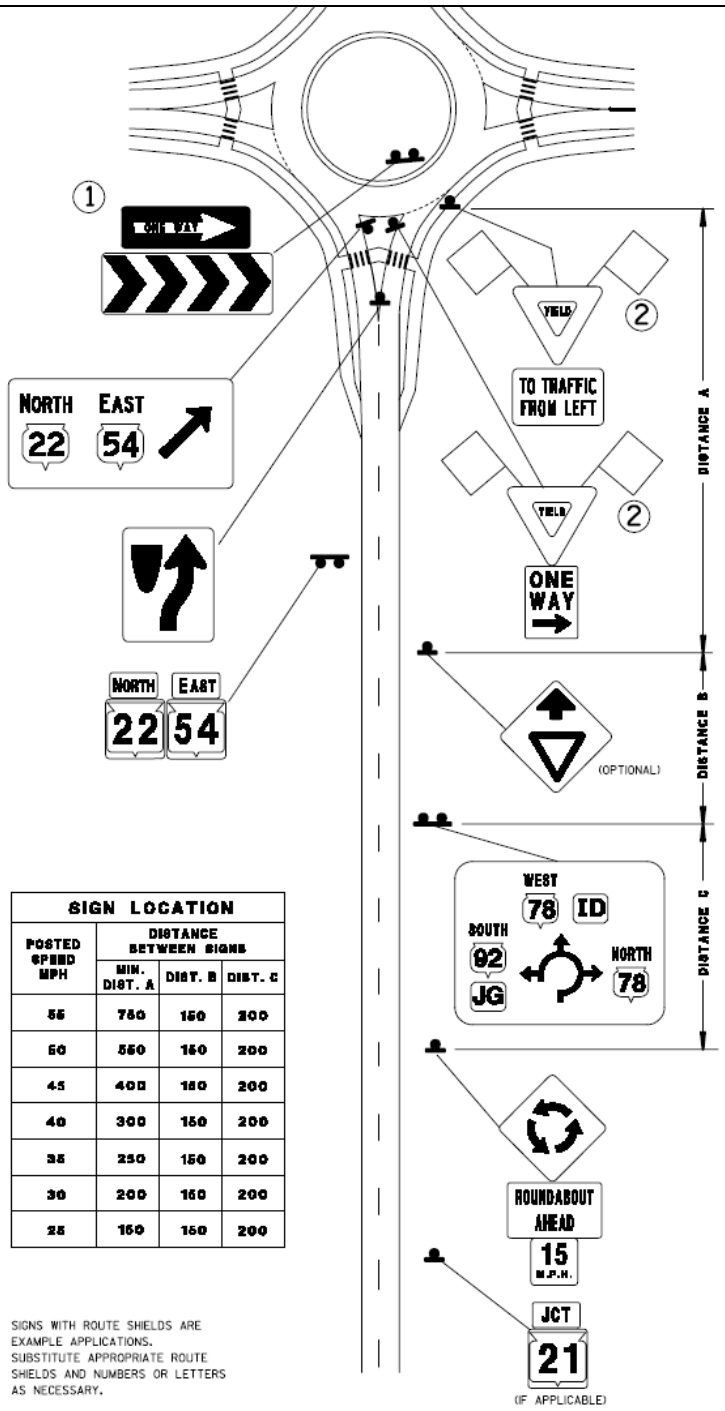


Figure 3.1 Sample Signing Plan for an Urban Roundabout (from the Wisconsin Facilities Development Manual, April 2008). Note the overhead advance guide sign in lieu of a diagrammatic sign.



SIGN LOCATION			
POSTED SPEED MPH	DISTANCE BETWEEN SIGNS		
	MIN. DIST. A	DIST. B	DIST. C
55	750	150	200
50	550	150	200
45	400	150	200
40	300	150	200
35	250	150	200
30	200	150	200
25	150	150	200

SIGNS WITH ROUTE SHIELDS ARE EXAMPLE APPLICATIONS. SUBSTITUTE APPROPRIATE ROUTE SHIELDS AND NUMBERS OR LETTERS AS NECESSARY.

① Use the R6-1R ONE WAY sign on STH's below the roundabout chevron bank in the circular island. Use the R6-2R ONE WAY sign on STH's below the left side YIELD sign.

② Install 18" x 18" orange flags on top of the YIELD signs for the first six months of operation of the roundabout to emphasize the yield movement.

③ In general, the typical spacing between signs is 200 feet in rural areas.

Figure 3.2 Sample Signing Plan for a Rural Roundabout (from the Wisconsin Facilities Development Manual, April 2008).