Providing Vehicular Cyclists with Routine Accommodation in the United States as Part of Complete Streets

By Martin Pion, B.Sc.

This article focuses on the need for knowledgeable cyclists to have the option to be treated as vehicle operators, referred to here as vehicular cyclists. The preoccupation of transportation engineers and planners with separate bicycle facilities can directly prejudice cyclists’ preferences, and possible remedies are discussed. A previous paper by Pion and Cline discussed bicycling education in the United States, describing successful programs for children and adults in the context of a sixth overarching E of transportation safety—“Equality”—the others being Engineering, Education, Encouragement, Enforcement, and Evaluation.¹²
Routine Accommodation and Complete Streets
Beginning in the 1970s, advocacy groups began focusing on the needs of cyclists and pedestrians when planning roadways. The term “Routine Accommodation” was coined to ensure inclusion of non-motorized road users. A search for another name in 2003 led to the term “Complete Streets” and the founding of the National Complete Streets Coalition in 2005.3 Complete Streets are often interpreted by traffic engineers and planners as requiring striping to designate different parts of the roadway for motorists and cyclists, providing varying degrees of separation. This is contrary to the usual preference of vehicular cyclists, who seek integration into the normal traffic stream on multi-lane roads. The concept of Routine Accommodation potentially offers a more inclusive solution to the need to accommodate vehicular cyclists, using as examples one proposed and two implemented facilities in the St. Louis metropolitan area in Missouri.

From Equality to Discrimination
Before describing these examples, it is necessary to put the present status of cyclists into perspective. Bicyclists during the 1870s heyday of bicycling in the United States led the “Good Roads Movement” for improved roads, which often were unpaved, and bicyclists enjoyed unfettered access. As motor vehicles became ubiquitous, laws were introduced reducing a bicyclist’s status as a road user, among the most egregious being the Mandatory Sidepath (MSP) law and Far To the Right (FTR) law that began appearing after 1944.4 The former prohibits a bicyclist from using the road when a nearby usable sidepath exists. The latter requires a bicyclist to stay as far right in the roadway as “safe” (or “practicable”) with some exceptions. Bicycle lane striping has the unfortunate effect of reinforcing FTR laws. Only one city in Missouri—Ferguson in north St. Louis County—has repealed its former FTR law, which was based on a still-existing state law.5

Defining Bicyclists
A 1994 study of roadway designs by Wilkinson et al. for the Federal Highway Administration included a definition of the “Design Bicyclist,” suggesting different treatments depending on bicycle user. It listed three groups of bicyclists:
- A for Advanced, needing no special roadway treatments;
- B for Basic; and
- C for Children.

The majority, B and C, prefer facilities such as bike lanes or separate bike paths. The ABC definitions were subsequently included in the 1999 AASHTO Guide for the Development of Bicycle Facilities, which greatly increased their impact within the transportation community.

In 2009, Roger Geller, Portland, Oregon’s Bicycle Coordinator, discussed the Four Types of Cyclists, listing them as follows:
- “Strong and Fearless”: comfortable using existing roads, making up less than 0.5 percent of the population;
- “Enthused and Confident”: willing to share the roadway with automobiles but still preferring bicycle facilities, such as bicycle lanes and bicycle boulevards, making up around 7 percent of the population;
- “No Way No How”: making up one-third of the population; and
- “Interested but Concerned”: making up the 60-percent majority of the population.6

Geller concluded that the focus should be on the majority of existing or potential bicyclists. (A later study of the same population estimated the first two categories as 5 percent and 10 percent, respectively.)

Examples of the Concept of Routine Accommodation
The following examples of one proposed and two implemented facilities in the St. Louis metropolitan area in Missouri show how the concept of Routine Accommodation potentially offers a more inclusive solution to the need to accommodate vehicular cyclists who wish to be treated as vehicle operators on the roadway.

Example 1. West Florissant Avenue Great Streets Plan in the Cities of Ferguson and Dellwood
This major north-south suburban arterial received renewed interest from local transportation planners after the shooting death of Michael Brown in August 2014 led to riots, looting, and arson on West Florissant Avenue, attracting worldwide attention. A feature article by Jennifer Pangborn-Dolde et al., examining some of the transportation and design problems of this road and potential solutions, appeared a year later in ITE Journal.4 The authors quoted Janette Sadik-Khan, former commissioner of the New York City Department of Transportation, as saying, “You have to design your streets for everyone. The cities that have safe streets, that are easy to get around, are the ones that will grow and thrive in the 21st century.” The authors wrote, “By continuing to focus on automobile systems, we will systematically contribute to the inequity in these communities.” The article listed steps to achieve a more equitable transportation system that connects people, and not just cars. As shown inset in Figure 1, it proposes a mixed use path on the east side of this major thoroughfare, separated from the road by the existing grass verge.7
The existing situation is shown in the Figure 1 main image, which is a screen capture from a helmet-mounted video shot by the author while bicycling a short distance ahead of cyclist Nick Kasoff as a motorist merges into the inside lane to pass. The video demonstrated cooperative behavior between motorists and vehicular cyclists on this 35 mph speed limited road. Adding the signage and road markings in Figure 2 would help to formalize such bicyclist behavior.

Figure 1. Inset is an artist’s rendering of a proposed adjoining mixed-use path for pedestrians and cyclists. The main image shows bicyclist lane control on existing West Florissant Avenue (4-lanes plus center-turn-only lane) at approximately 3:30 pm on Wednesday, October 8, 2014.

Figure 2. MUTCD R4-11 sign (left) and “Sharrow” (right).

The R4-11 “BICYCLES MAY USE FULL LANE” sign with an additional optional signboard underneath is illustrated, together with a Shared Lane Marking, commonly referred to as a “sharrow.” In the above proposed application, sharrows would be placed in the center of the “effective lane” which accounts for potential adjoining obstructions. Thus, when on-street parking exists alongside the curb lane, the “effective lane” would be offset away from the door zone appropriately, as shown in a 2012 online video posted on Vimeo in Long Beach, CA.

Example 2. Metro St. Louis’s First Parking-Separated Bikeway

The first Parking-Separated Bikeway (PSB) in the St. Louis metro area was a collaborative effort between Great Rivers Greenway and the City of St. Louis. It runs for about one mile on one-way Chestnut Street east-west towards the towering Gateway Arch overlooking the Mississippi River. Starting off at about 3:30 pm on Thursday, September 17th, 2015, CyclingSavvy instructor Karen Karabell and the author bicycled along this new facility while the author videotaped forward and backward with two helmet-mounted digital cameras in video mode. This duplicated the technique used on the West Florissant Avenue example. Recording continued during the return trip along parallel Market Street, a major multi-lane thoroughfare with no bicycle facilities.

The bikeway striping varies along its length, as illustrated in the accompanying screen capture examples taken from video. Starting at 20th Street, the one-way bike lane adjoins a curbed sidewalk and is separated from a single same direction travel lane by a buffer lane marked by diagonal white stripes and posts at regular intervals alongside a parallel parking lane. In addition, there is a curbside parallel parking lane on the far side of the road. This Parking-Separated Bikeway layout (Figure 3a) is repeated at different locations along the length of this facility.

Figure 3a. Karen Karabell braking for a stop sign at one-way 15th St. on this Parking-Separated Bikeway.

A later section (Figure 3b) is more conventional, the bike lane having buffer lanes on either side adjoining one or two same-direction travel lanes on its left side. The buffer lanes are intended to improve cyclist safety when motor vehicles are present. Note the reverse angle-in parking, which improves the motorist’s view when exiting across the bike lane. While waiting at a red light at Tucker Boulevard, a major intersection (at 3:16 min. in the video), Karabell...
remarked on the need for educating bicyclists using this facility, stating, “I think our job, as educators, is to make people aware (that) if you use this facility you need to know that other drivers are allowed to turn right in front of you.”

Along the two-lane one-way final section (Figure 4), which is striped as a door zone bike lane (DZBL), Karabell has merged left to control the curb lane. This avoids risking serious or fatal injury when in the DZBL from a suddenly opened car door.

The return trip was along parallel Market Street, a major 35-mph 4-lane arterial one block south of Chestnut Street. A screen shot from video shows Karabell crossing six-lane Tucker Boulevard, mentioned earlier, after having stopped at a red light signal with two left-turn-only inside lanes.

Figure 5. Karen Karabell controlling the curb lane on Market Street, while crossing Tucker Boulevard on a green light.

The motorist seen turning right had been driving behind Karabell for several blocks without showing any signs of impatience. This was typical motorist behavior, despite Karabell controlling this lane throughout the return trip along Market Street, and reflects the similar experience noted above on West Florissant Avenue. What is lacking is simply the MUTCD R4-11 sign (left) and “Sharrow” suggested previously.

Example 3. Natural Bridge Rd. Road Diet Parkway Section

This major road reconfiguration was initiated by the St. Louis Metropolitan Planning Organization, East-West Gateway Council of Governments, as part of its 2006 Great Streets initiative. The stated purpose was “to trigger economic and social benefits by centering communities around interesting, lively, and attractive streets that serve all modes of transportation,” and not just move cars and trucks faster. The road partly adjoins the University of Missouri, St. Louis campus. It was originally configured with two 12-foot travel lanes in each direction, allowing a cyclist to readily control the outside or curb lane while a motorist passed in the inside lane. A motorist could also turn right from the curb lane without crossing the cyclist’s path.

The road reconfiguration implemented, called a Road Diet Parkway Section, has a wide planted median and a single ~11-foot travel lane adjoining a ~6-foot curb-side bike lane in each direction, with a 20,000 vehicles-per-day traffic count, as shown in the Google Maps screen capture in Figure 6.

The actual dimensions across this nominally 90’ right of way, as measured on the ground, are as follows, from left (North) to right: 10’ N-side Sidewalk, 7’ Tree Lawn, 5’ 9” Bike Lane, 11’ 5” Car Lane, 11’ Left-turn-only Car Lane, 2’ 3” Buffer Lane, 9’ Planted Median, 1’ 8” Buffer Lane, 10’ 11” Car Lane, 6’ 4” Bike Lane; 5’ 3” Tree Lawn, 8’ 4” Sidewalk = approx. 89’ (omitting any tree lawn alongside the N-side sidewalk).
a following motorist turning right. Unlike a bicyclist riding in a separated bike facility, either a PSB or separated mixed use path, in principle when controlling the curb lane, a cyclist planning a left turn can more easily negotiate a safe lane change.

**Conclusion**

The Complete Streets movement has been adopted in the United States, but it generally ignores competent on-road cyclists who prefer to ride in the traffic lane. This article addresses that omission by recommending that such bicyclists receive Routine Accommodation, the original concept predating Complete Streets. Transportation professionals need to consider these road users as they plan, design, and manage street networks. This requires either a shared curb lane appropriately signed that the vehicular cyclist can control, with those preferring a separate facility provided with a mixed use path. Alternatively, a parallel road should be signed for the vehicular cyclist, as for the Market Street example. *itej*

**References**

5. Ferguson, Missouri Municode Sec. 44-364. Riding on roadways.
11. Manual on Uniform Traffic Control Devices (MUTCD) “Section 9B.06 BICYCLES MAY USE FULL LANE Sign (R4-11)” http://tinyurl.com/jb3pd3h

**Martin Pion, B.Sc.** started cycling to work daily in 1970 when still a research scientist at ITT’s Central Research Lab in England, and he continued after moving to the United States in 1977. His knowledge of cycling benefited from becoming a League of American Bicyclists Certified Cycling Instructor in 1997, and subsequently teaching many adults and some youth safe on-road cycling. Martin is a member of ITE.

This headshot photo of Martin shows the camera setup using digital cameras in video mode from which the screen captures are featured in this article. This avoids the distortion present when using popular fixed focus cameras, with the main drawback being more limited videotaping time.