

BEST PRACTICES FOR SHARED LANE MARKINGS

Shared Lane Markings are not bicycle facilities, but pavement markings for designating shared space on low-traffic and low-speed routes. Currently, the Bicycle Friendly Community Application requires communities to report the number of separated facilities on arterials, as shared space is not safe or comfortable when cars are traveling fast. Using Shared Lane Markings on higher speed and higher traffic routes eliminates their value for wayfinding on low-stress routes.

Appropriate Contexts for Shared Lane Markings

Shared Lane Markings are used to mark mixed traffic facilities, where people driving and biking share the street. This type of facility is comfortable for a mainstream adult population when:

1. the speed differential is low. NACTO recommends 25 mph or less design speed for using shared lane markings (“Urban Bikeway Design Guide” 181).
2. there is no centerline in the street, thereby directing ALL users to share the space (“Low Stress Bicycling” 21).

Following these two guidelines implies:

- Shared lane markings are not appropriate on streets with ADT over 4,000, as traffic tends to channelize into two lanes at that threshold, regardless of markings (“Low Stress Bicycling” 21).
- Shared lane markings are not appropriate on streets with more than one lane in each direction, as such streets require markings.
- Traffic calming devices should be used when the design speed of a road is over 25 mph.

When Shared Lane Markings are used, the placement should follow NACTO recommendations to ensure that they encourage proper lane position for bicyclists, outside of the door zone. Markings should be placed frequently enough to provide wayfinding for cyclists.

Shared Lane Markings and Wayfinding

Shared Lane Markings are invaluable as wayfinding to guide bicyclists along low-stress routes. They are an essential part of Neighborhood Greenway design. When Shared Lane Markings are used on higher traffic and higher speed roads, users cannot rely on the markings to guide them along low stress routes. Where shared lane markings are used because of constrained right-of-way, centerline markings should not be used and traffic diversion should be used as appropriate to ensure ADT under 4,000. If these measures are not practical, advisory bicycle lanes or road diets should be considered instead.

The orientation of the chevron in a shared lane marking can be changed to indicate wayfinding. This design is used in many cities and is included in the NACTO Urban Bikeway Design Guide (180). Such modified shared lane markings should be used to indicate turns in

low-stress routes. Though it has not yet been included in the Manual on Uniform Traffic Control Devices, modified chevrons are used as a best practice throughout the country without controversy.

Shared Lane Markings and Network design

Bicycle facilities and markings should be designed to reduce traffic stress to a level that will be tolerated by the mainstream adult population (LTS 2 as defined in the “Low Stress Bicycling Network Connectivity Report” published by the Mineta Transportation Institute). When facilities are designed to be comfortable for only a minority of the population, society and most individuals miss out on the benefits of cycling, including better health, reduced traffic congestion, and improved air quality.

Designing infrastructure on minimum standards creates the risk that the project will be outdated when standards change. Bicycle planning and design is a rapidly changing field, with standards increasingly favoring separation. Current projects should look to emerging best practices, to ensure that they are within guidelines for years to come.

Shared Lane Markings and Safety

Shared Lane Markings have the potential to inform road users of proper bicycle lane positioning and to alert drivers to the presence of cyclists. In 2010, the Federal Highways Administration evaluated the operating effects of shared lane markings, using 2-lane, 4-lane, and 5-lane roads. The study found that correctly placed shared lane markings increased operating space for bicyclists, and reduced sidewalk riding. The study focused on operating characteristics, not crash frequency (“Evaluation of Shared Lane Markings” 75).

In 2012, a case-crossover study looking at crashes and infrastructure type found no significant decrease in risk for major streets with shared lane markings. The researchers defined major streets as those with marked centerlines. In contrast, local streets without marked centerlines, had a significant and large decrease in crash risk (Teschke et al. 2340). The findings underline the importance of wayfinding along local streets without marked centerlines.

Works Cited:

Mekuria, Maaza C., Peter G. Furth, and Hilary Nixon. *Low-stress Bicycling and Network Connectivity*. Rep. no. 11-19. San Jose, CA: Mineta Transportation Institute, 2012.

Teschke, Kay, and Et Al. "Route Infrastructure and the Risk of Injuries to Bicyclists: A Case-Crossover Study." *American Journal of Public Health* 102.12 (2012): 2336-343.

Urban Bikeway Design Guide. New York: National Association of City Transportation Officials, 2012.

U.S. Department of Transportation. Federal Highways Administration. *Evaluating Shared Lane Markings*. FHWA-HRT-10-041. McLean, Virginia: Turner Fairbank Highway Research Center, 2010.