

Smart Cycling, Bicycle Friendly Communities, and Bike Lanes

Introduction

More and more communities are striping bicycle lanes as a way to accommodate and encourage bicyclists on roadways in urban and suburban areas. There is a concern among some bicyclists that the use and existence of bike lanes is counter to the principles of the League's Smart Cycling education program and legitimate questions have been raised as to what League Cycling Instructors should be teaching their students.

This document addresses those issues and concerns. It is not a design guide and doesn't have recommended street design standards – [those already exist in other design manuals, guidebooks, and research reports](#).

Is the League For or Against Bike Lanes?

The League recognizes bike lanes as one of many design solutions to accommodate bicyclists on roadways. They are an increasingly common roadway design and our education programs must reflect this by teaching cyclists and motorists how to operate in bike lanes – while identifying issues that may arise in their operation and use.

Bike lanes are travel lanes for the exclusive and preferential use of bicyclists: they are not inequitable, and they do not “segregate” bicyclists (unless a physical separation is used). They are not exactly the same as regular travel lanes shared with motor vehicles, and that's OK. There is no evidence to suggest properly designed bike lanes are more dangerous for cyclists, and there is plenty of evidence to suggest that, in fact, bicycle lanes:

- encourage bicycle use
- improve cyclist and motorist lane discipline and predictability, and
- encourage safer riding behavior (by discouraging wrong way and sidewalk riding).

Two primary concerns are raised in relation to bike lanes: dooring and intersection crashes. Maintenance issues are operational issues that can be addressed in a different forum. Neither dooring nor intersection issues are unique to roadways with bike lanes, but they may be highlighted by the striping of a bike lane. And there are badly conceived and designed bike lanes out there that fail to take account of these critical issues.

Door Zones

Riding a bike or driving too close to parked cars always creates the risk of a car door opening in your path. The impact of this on a cyclist is clearly more serious than for the drivers of motor vehicles. There is a concern that bike lanes striped against parked cars will put cyclists in the door zone and therefore into greater danger.

- Many roadways suitable for bike lanes have no parking on them – so obviously this isn't an issue in those cases.
- The presence of parking creates a risk of dooring whether or not bike lanes are present. This has always been a critical factor in the selection of streets for bicycle accommodation of any kind.
- The primary legal and practical responsibility for avoiding dooring is on the motorist or passenger opening the car door: they should not open their door into the path of any vehicle; they should not open their door before checking that it is safe to do so. Several states and communities have passed specific ordinances to reinforce this responsibility.
- Cyclists should always have the right to leave the bike lane if their safety is threatened due to surface conditions, obstructions, and dangers such as opening car doors. This has always been, and remains, a core principle of the League.
- Bike lanes can be striped adjacent to parking lanes and parked cars. There are striping, signing and marking techniques that encourage and enable cyclists to ride further away from parked cars. Bicyclists are successfully and safely operating on urban streets even with AASHTO-minimum recommended widths for parking, bike, and adjacent travel lanes. This may not always be appropriate for every such street: engineering judgment may suggest other options such as establishing lower overall speeds and the use of shared lane arrows.
- There is an ongoing need to educate cyclists AND motorists about the hazards of dooring: cyclists need to know how to spot and avoid the hazard; motorists need to be constantly reminded to look before opening their doors into traffic.

Intersections

The AASHTO *Guide to the Development of Bicycle Facilities* has long recognized that bike lanes can complicate intersections because bike lanes are not quite the same as a through motor vehicle lane or turn lane; they are a combination lane for bicyclists, and motorists turning right are potentially crossing the path of cyclists to their right going straight ahead. This highlights the ambiguous and confused legal status of bicyclists on the roadway in general, and especially at intersections.

This is a difficult situation to resolve. Motorists, cyclists and pedestrians have very different and unique operating characteristics, attributes and levels of physical protection. Many roadway design manuals and vehicle codes have been written primarily to govern the interaction between motor vehicles, with cyclists and pedestrians occupying an ambiguous, confused and secondary status in those documents.

There are numerous legal, educational, and design solutions that are available to help manage motorist, cyclist and pedestrian interaction at intersections that enable all users to travel safely.

- There is a clear and general principle that vehicles turning or changing lanes have the responsibility to make sure they can make the turn safely and not cross the path of another roadway user – we must expect motorists to follow this principle when crossing a bike lane to make a turn just as when they cross a sidewalk, crosswalk and/or shoulder. If a motorist hits a bicyclist (or if another cyclist hits a cyclist when turning) it suggests they have failed to take this basic precaution.
- There are intersections where problems are caused by allowing right turn on red after stopping – agencies have the option to prohibit this movement at all or selected intersections.
- On roads with a low volume of right turns, the AASHTO guide and other manuals recommend striping the solid white bike lane stripe up to the intersection or crosswalk. Some states and localities (e.g. Oregon and New York City) have laws that specify that a motorist must wait until the intersection is clear of through cyclists, and they stripe bike lanes with a solid line to the intersection in all cases.

- On roads with higher volumes of right turning traffic and through cyclists, the manuals typically suggest the bike lane stripe be dashed in advance of the intersection to allow cyclists and motorists to merge to the appropriate place for their intersection maneuver – and a bike pocket at the intersection, to the left of the right turn lane, can help guide cyclists to the best spot for safe through travel as well as alerting motorists to the place where they can expect cyclists to be.
- On roads with the highest levels of cyclist traffic and turning motor vehicle traffic, the intersections may require greater separation of movements and users as well as higher visibility “conflict areas”. The use of colored pavement markings, separate signal phasing, bike boxes, and more physical separation can all achieve these goals.

Conclusion

Bike lanes are here to stay. They are one of the tools available to communities to promote cycling and cyclist safety and they are being used more extensively every year. Of course, most streets – local roads – don’t typically need bike lanes for safe bicycle and motor vehicle use. Major arterial streets may need something more substantial than a simple paint stripe. However, bike lanes are a practical, proven and useful tool for the traffic engineer and planner: to teach or pretend otherwise is to risk irrelevance, and is inconsistent with the League’s Smart Cycling program. Streets with bike lanes aren’t the same as streets without bike lanes – there are different issues to share with students in each instance, but one is not inherently better or worse than the other.

The presence of bike lanes – and the League’s support for their appropriate use and application – is consistent with the Smart Cycling program and principles that underpin it. Bicyclists in bike lanes can and should have the same basic rights and responsibilities as the operators of motor vehicle operators, and there are some specific rules and regulations that will apply as they uniquely relate to the operation of a bicycle in particular situations.

In limited circumstances, bike lanes may inhibit the ability of skilled cyclists to achieve their peak efficiency and speeds. This is similar to the effect of most traffic control devices on the mobility of the fastest and most skilled users of any mode. However, bike lanes also make cycling much more accessible to many more people and that benefit far outweighs the relatively minor costs incurred by a limited number of highly skilled and traffic tolerant cyclists.

There is no coincidence that communities with the highest levels of cycling use in the United States are those deploying a wide array of engineering and other techniques – including bike lanes – and that those communities also have some of the most active and extensive education programs in the nation (Tucson, San Francisco, Seattle, Portland, Washington, DC; Philadelphia; New York). These programs are all based on the League’s Smart Cycling program materials and principles. As cities across the United States – and the world – see bicycle ridership increasing with the expansion of bike lane and other facility networks, bike lanes will become a more prominent feature of riding in US communities. That’s something the League welcomes and for which we need to be prepared.