The Difference Between Right And Left Bike Lanes

Interview with Peter Trinh, P.E.

Peter Trinh, P.E. is a transportation engineer for the City of Seattle, WA, USA, leading the design of bicycle and pedestrian projects throughout the city. His previous work experience includes 7 years of transportation design with Mark Thomas & Company, Inc. in the San Francisco Bay Area. Peter possesses expertise in innovative on-street bicycle design, bicycle/pedestrian trails, complete streets, ADA improvements, and intersection design. He has designed multimodal projects throughout California, including left-side bike lanes for the City of Santa Clara, the Permanente Creek Trail Route 101 Overcrossing in the City of Mountain View, which won the award for the 2013 Silicon Valley American Public Works Association (APWA) Project of the Year, and the San Tomas Aquino Creek Spur Trail, winner of the 2014 Silicon Valley APWA Project of the Year. Peter holds a bachelor of science in civil engineering from the University of California, Davis, and a master of science in civil engineering from San Jose State University.

As bicycle design continues to progress throughout the United States, transportation engineers need to think of innovative solutions to make bicyclists safer. Peter Trinh, a multimodal transportation engineer for the City of Seattle, WA, USA, recently spoke with *ITE Journal* about designing left-side bike lanes.

ITEJ: Why should transportation engineers consider implementing left-side bike lanes?

PETER TRINH: Riding a bicycle should not be dangerous, yet oftentime people are afraid to get on a bike for fear of having to share the road with vehicles. Left-side bike lanes can help remedy many of the issues bicyclists encounter today on streets with a conventional right-side bike lane. In busy, urban areas with bicycle facilities such as standard Class II bike lanes on the right side, bicyclists often run into conflict points with vehicles, some of who may not be aware of the bicyclist on the roadway. These conflict points may include driver side car door openings (often referred to as "dooring"), frequent driveway openings, and right-turning vehicles at intersections that encroach into the bike lane. To remedy this situation, many cities are implementing the left-side bike lane concept into their one-way street, bicycle corridors to encourage ridership through increased comfort and bicycle priority. Left-side bike lanes have been implemented in major U.S. cities including Boston, MA, Portland, OR, San Francisco, CA, Seattle, WA, Minneapolis, MN, and Chicago, IL.

ITEJ: Would you explain the different classes of bike facilities?

PT: There are three "classes" of bike facilities. Class I facilities give exclusive right of way to bicyclists, and are often times shared with pedestrians. These have minimal vehicular cross traffic (if at all). They're better known as bike trails, or shared use paths. Class II facilities are essentially separated, on-street bike lanes (right or left), designated by striping and pavement markings. Finally, Class III facilities, are also known as bike routes, are typically designated with shared-use pavement markings, or "sharrows." Bicyclists do not have their own lane along these streets, but vehicles are to share the road with bicyclists along these routes. Oftentimes Class III bike routes are enhanced for bicyclists by implementing traffic calming devices that slow vehicles down, making bicyclists feel safer.

ITEJ: What are the benefits of left-side bike lanes?

PT: Left-side bike lanes provide several benefits:

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A 6′ bike lane and 8′ buffer along Calabazas Boulevard in the City of Santa Clara, CA, USA.

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Left-turn bike box and left-side bike lane for through bicyclists at the El Camino Real intersection, in the City of Santa Clara.

- Improved visibility since drivers are able to see bicyclists better on their side.
- Less conflict with right-turning vehicles at intersections who may not see bicyclists in their blind spot.
- Loading zones and bus stops on one-way streets are typically on the right side of the roadway. Therefore vehicles are much more likely to pull into and across bicycle lanes if the lanes are on the right side.
- Left-turning bicyclists do not need to travel across any lanes to make their turning movement.
- Reduces "dooring" conflicts from street parking.

A successful bicycle corridor should enable more free-flowing bicycle traffic and slow motor vehicles down. Being a daily bicycle commuter living in an urban area and using a designated bike route to and from the office, I can not count the number of times that I have been cut-off by a right-turning driver ignoring their blind spot or a large truck completely blocking the bike lane to unload, forcing me to swerve into the traveled way. Although standard Class II bike lanes provide an acceptable facility, the paranoia of vehicles prohibits the notion of free-flowing bicycle traffic. A left-side bike lane may not completely solve this issue for bicyclists, but it can reduce many of the conflicts bicyclists experience when riding on the right side of the roadway.

Bicyclists and motorists need to be cognizant of bicycle priority along a corridor. Besides being a Class II facility for bicyclists, left-side bike lanes can also act as a traffic calming measure for vehicles, relaying the message to drivers that bicycles are a priority along the corridor, creating a distinctive feel different from other roadways. Since high vehicular speeds is consistently a major deterrent for bicycle travel in a corridor, traffic calming measures are needed to increase bicycle safety and comfort.

ITEJ: How can left-side bike lanes work with other treatments to promote safety?

PT: When implemented as part of a road diet, left-side bike lanes can be even more effective in achieving the goals of a successful bicycle corridor. For example, an existing two- or three-lane roadway can be dieted by converting one of the thru-lanes to a *buffered* left-side bicycle lane. This provides additional comfort for bicyclists as there is a buffer zone between the bike lane and opening passenger side car doors to their left, as well as a buffer to thru traffic on the right. Buffered bike lanes are becoming increasingly popular, as evident in the City of San Jose, CA's recent implementation of buffered bike-lanes on the right side of the roadway throughout their downtown, a project that benefits the college students at San Jose State University as well as the high bicycle commuter ridership in the city.

Additional treatments to the left-side bike lanes will improve safety and draw drivers' attention to bicyclists. These measures include green bike lanes at approaches to the intersection and green bike boxes at intersections, that allow for right-turning bicyclists to move across the roadway to the right side. Additionally, pavement markings within the buffer are an effective method to warn drivers to not encroach into these zones.

ITEJ: Would you describe a successful example of left-side bike lanes?

PT: I was part of the consultant team that helped the City of Santa Clara, CA implement left-side buffered bike lanes along Calabazas Boulevard. Prior to the project, Calabazas Boulevard had two lanes in each direction, with the San Tomas Aquino Creek separating the two directions of travel. Although the roadway had existing right-side bike lanes, high vehicular speeds and street parking did not present a bike friendly situation. Additionally, bicyclists had a difficult time negotiating the intersection with El Camino Real, which required left-turning bicyclists from Calabazas to cross multiple thru lanes of traffic to get to the left side. The project transformed the roadway into a bicycle priority corridor, implementing a road diet that converted one travel lane in each direction to a left-side buffered bike lane. The intersection with El Camino Real was optimized for bicyclists with a green bike box, creating a bicycle "left-turn pocket" that allows bicyclists to position themselves in front of the queue of vehicles in full view of drivers. Bicyclists also have the advantage of being more visible to drivers, with a left-side green bike lane at the intersection.

ITEJ: Are there any other factors to keep in mind when considering a left-side bike lane?

PT: Every street and every situation is different, so there is no standard for how to implement a bike lane on a specific street. A left-side bike lane is not the best choice for every situation. First you need to examine the area and conditions, making sure that it is not a street with a high volume of left turning vehicles. Streets that work well with left-side bike lanes are one-way or median divided streets with bus stops and loading zones on the right side. You need to examine all the potential conflict zones. With any type of bike lane that you implement, public outreach plays an important role. Everyone needs to understand how the lanes work and feel comfortable using them. **itej**