



Bike Delaware www.bikede.org

A coalition of like minded citizens and organizations that promote bicycling as a healthy alternative to driving and advocate safe provisions within our transportation system.

Bike Lanes at Intersections with Right Turn-Only Lanes

Position Statement

January 2, 2011

Summary:

Throughout the state, DeIDOT has identified a system of bicycle routes, as illustrated in Figure 1 on the statewide bicycle map. Many of these consist of wide shoulders where riding is feasible even when the prevailing speed of adjacent motorized traffic is high. The challenge to bicyclists comes when these shoulders suddenly or gradually become right turn lanes for cars. When a "right turn only lane" (RTOL) is present, the shoulder ends and the bicyclist must merge with vehicular traffic, causing potential hazards and crash situations for the bicyclist(s), turning driver, and all adjacent traffic. On higher speed roads (45+ mph), it becomes dangerous for virtually every class of bicyclist.

Therefore, on all shouldered roads in Delaware (minus limited access) that are controlled and maintained by DeIDOT, Bike Delaware strongly advocates that bike lanes be installed to the left of right turn only lanes wherever they must occur.

Figure 2 shows a typical road in Delaware with a wide shoulder replaced by a right turn only lane. Figure 3 (next page) is a schematic drawing of the same situation. In the interest of safety, bicyclists must choose to continue using the right turn only lane instead of entering the through lanes to continue straight, or risk a serious altercation or crash by suddenly moving left and into conflict.

Bicycling Routes

Statewide Bicycle Route
These routes are north-south connections between New Castle, Kent and Sussex Counties.

With Bikeway * Without Bikeway Bicycle Route 1

Regional Bicycle Route
These routes provide direct connections between major municipalities and activity centers.

With Bikeway * Without Bikeway

Connector Bicycle Route
These routes provide connections from local activity and recreational centers to the larger bicycle network.

With Bikeway * Without Bikeway

* Bikeways include shoulders and wide outside lanes, which may or may not be marked and signed as bike routes. Be alert for occasional turn lanes in these areas.

Figure 1



Figure 2

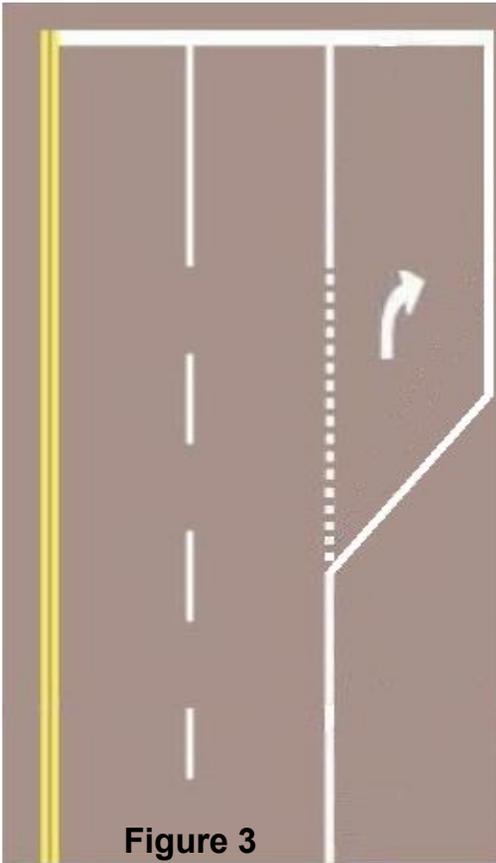


Figure 3

Figure 4 shows Bike Delaware’s *preferred* solution to this problem: a marked offset to the left of the right turn only lane connected to the shoulder. This “bike lane” creates a defined travel space for the bicyclist where the shoulder ends, and finds strong support among the American Association of State Highway and Transportation Officials (AASHTO):

“Incorporating the bike lane to the left of the right-turn only lane enables bicyclists and right-turning motorists to sort their paths by destination in advance of the intersection, avoiding last-moment conflicts” ~ 2010 AASHTO Development Guidelines Draft (p.84).

If sufficient right of way (ROW) cannot be obtained for a new project, and DelDOT is unable to provide the recommended 6’ wide bike lane for speed limits above 45 mph, the standard width of 5’ is acceptable as a compromise. If 5’ cannot be obtained, 4’ becomes acceptable, but only when there is no other alternative.

For existing roads with need for rehabilitation (resurfacing project), a retrofit of existing lanes to include a bike lane through the right turn lane should be implemented. Striping modification is a low cost

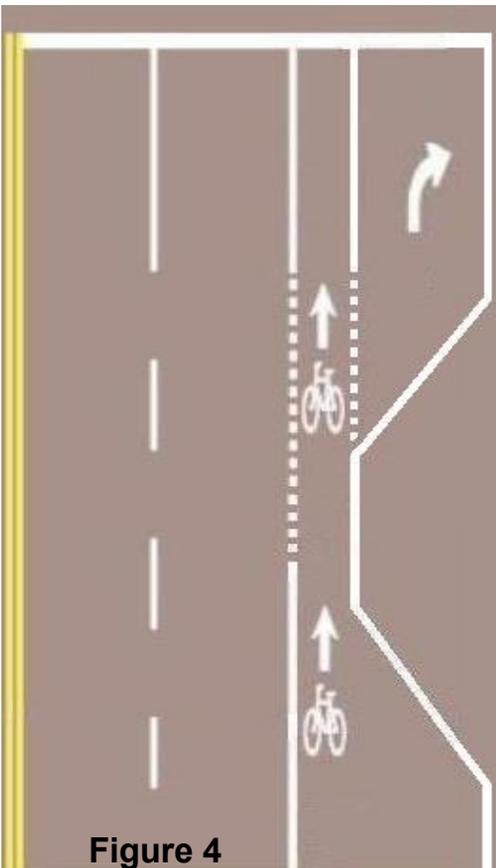
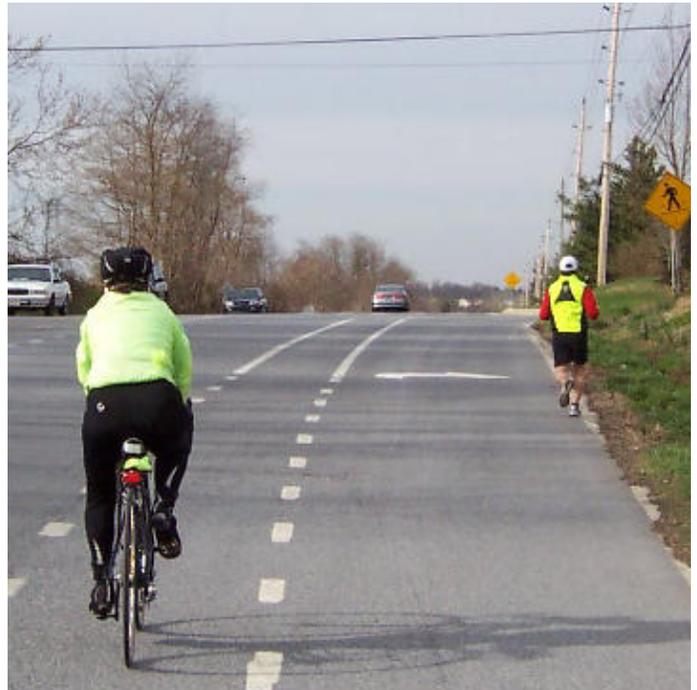
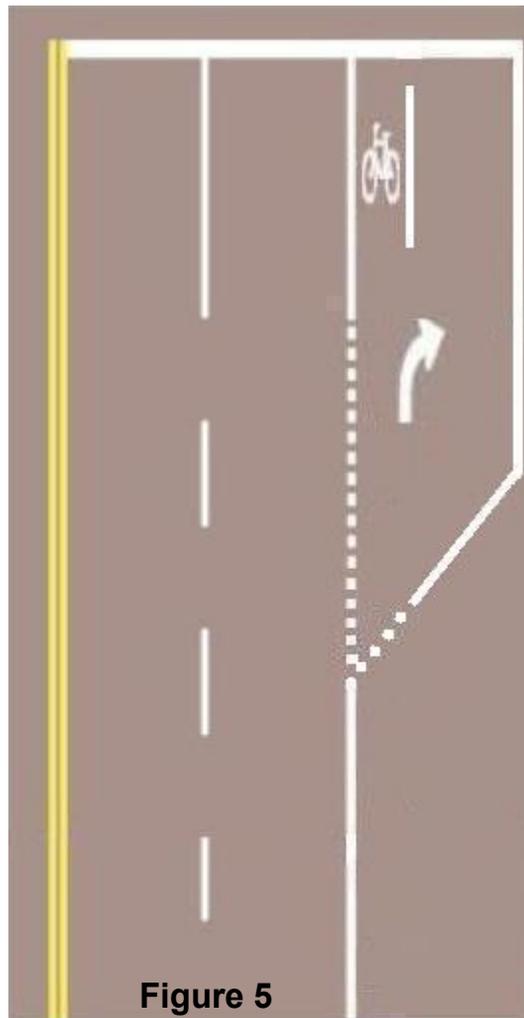


Figure 4



4’ bike lanes on Paper Mill Road, a 45 + mph arterial connection between Newark and Pike Creek.



solution and in many cases existing widths can be redistributed to include bike lanes.

For existing roads with no immediate need for rehabilitation, a simple retrofit of existing RTOL striping is an ultra low cost interim solution (Figure 5). A pocket right turn bicycle lane can be created within existing right turn lanes(1). At minimum, this includes the minor removal of paint to create an open or dashed (merge) line at the onset of the RTOL, and the addition of a small bicycle symbol. Share the Road signs should also be implemented.



RTOL/Shared Lane retrofits are common in Hawaii, this one found on Hana Highway in Maui.

Making the case:

Safety: Studies(2) show bike lanes at intersections significantly reduce crash rates between motorists and bicyclists, and encourage both modes to respect each other's position in the roadway. Surveys in Delaware(3) indicate far more bicyclists are willing to obey traffic laws where such provisions exist. Among others, they:

- Support and encourage bicycling as a means of transportation.
- Promote a more orderly flow of traffic.
- Encourage bicyclists to ride in the correct direction, with the flow of traffic.
- Give bicyclists a clear place to be so they are not tempted to ride on the sidewalk.
- Remind motorists to look for cyclists when turning.
- Signal motorists that cyclists have a right to be in the road or stopped at an intersection.
- Reduce the chance that motorists will stray into cyclists' path of travel.
- Make it less likely that passing motorists swerve toward opposing traffic.
- Provide a legally protected space on the road.
- Decrease the stress level of all vehicle operators.



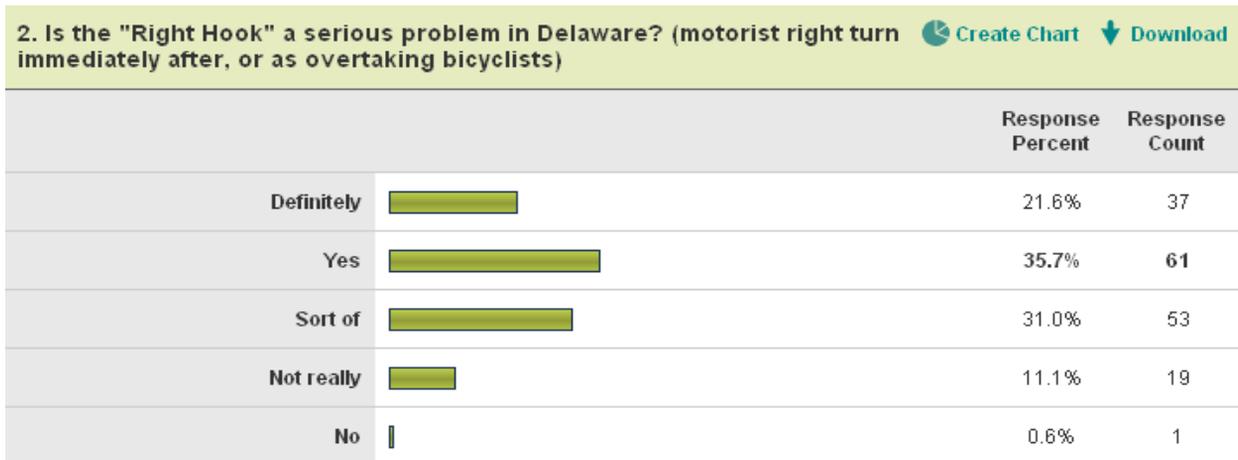
Bicyclists crossing over and riding dangerously against traffic on Marrows Road in Newark. National studies show bike lanes significantly reduce instances of wrong-way riding and other scofflaw behavior.

Legal Implications:

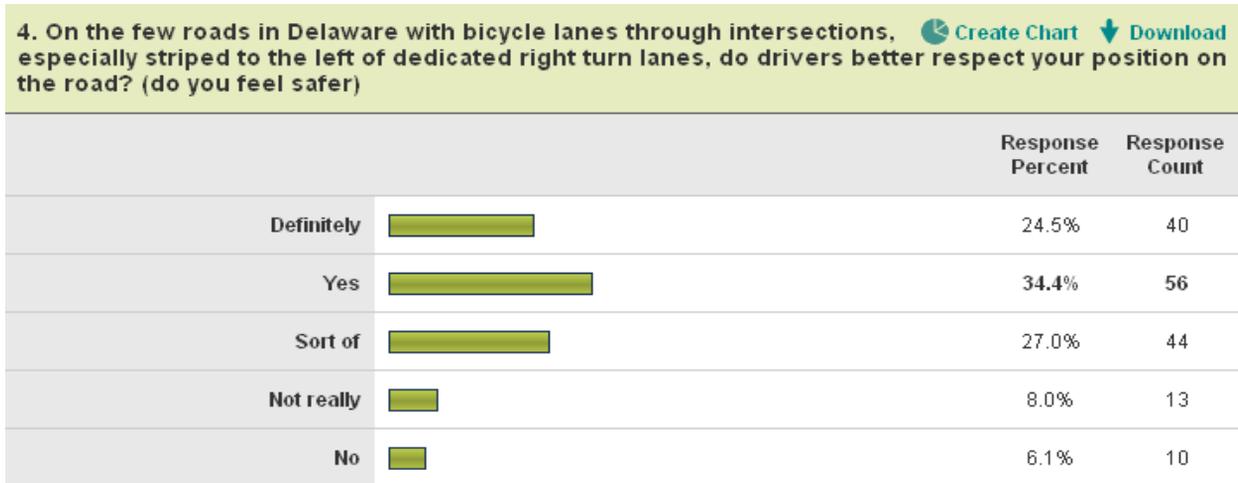
It is technically illegal for any vehicle to use turn lanes as through lanes, but Delaware cyclists are left with little choice. Shoulders - which are legal to ride in - disappear under the current design. Motorists, led to believe they have the right of way, often turn right as they overtake bicyclists. Bruce Fellows, MD, one of Delaware's leading surgeons, today is paralyzed from the neck down as a result of an unmarked right turn lane crash while the motorist involved in this crash continues to drive. Bicyclists, riding legally, often struggle to prove their case even when the driver was clearly in the wrong. Using a right turn-only lane as a shoulder has been cited successfully against bicyclists who were struck head on or from behind by a motorist who claimed they were anticipating his or her right turn. This proposal, little more than a simple striping change, provides a shared or defined space for bicyclists. It largely eliminates these problems while providing legal protections.

What Delaware Bicyclists Are Saying:

Bike Delaware received 172 responses to a survey conducted in November 2010. A solid majority of respondents favor properly designed bike lanes, especially at intersections, because they view them as having a positive influence on motorist and cyclist behavior:



Close to 90% (57% seriously) indicate the "Right Hook", usually the result of driver misjudgment or an unwillingness to accept of a bicyclist's rightful position on the road, is a problem at some level in Delaware. This policy looks to address this issue most specifically.



86% (59% seriously) rate bike lanes through intersections as having at least a somewhat positive influence on safety and motorist behavior.

3. At intersections with properly designed bike lanes, are you less likely to break the law? (i.e. ignore red lights)

[Create Chart](#) [Download](#)

		Response Percent	Response Count
I already abide by the law 100%		24.4%	42
Yes		52.3%	90
I think so		12.8%	22
Not really		10.5%	18
I'm a scofflaw regardless		0.0%	0

An additional 65% indicate they will, or are more likely to obey traffic laws where bicycle facilities are present, which includes bike lanes at intersections or other legally defined space.

Conclusion:

For bicyclists to maintain their vehicular status, according to Motor Vehicle Law Title 21, Chapter 41, it is incumbent upon them to take the correct lanes as required at intersections. However, to the average motorist, a right turn-only lane is viewed as a continuation of the shoulder. A move out into the through lanes from a RTOL - tantamount to moving out to the “middle of the road” in a driver’s eyes - is unrealistic and hazardous at best. To that end, we believe including bike lanes or pockets through intersections will greatly enhance safety, increase mode share, and promote DeIDOT's Statewide Long-Range Transportation Plan.

It is Bike Delaware’s desire that DeIDOT, in the spirit of Complete Streets and Routine Accommodation, adopt this proposal in the state MUTCD. We ask that it be mandatory in construction, reconstruction, and pave & rehab on all roads barring limited access highways. The retrofit should be available upon request for existing surfaces, especially those in higher bicycle and pedestrian usage areas or contained within DeIDOT’s Bicycle Map as “Bicycle Routes”.

Endnotes:

1. UNC Highway Safety Research Center: *Combined Bicycle Lane/Right Turn Lane, Eugene, OR*
2. Cambridge (MA) Department of Community Development: *Safety Benefits of Bike Lanes*
3. Bike Delaware Survey: *Bike Lanes Through Intersections*

Bike Delaware thanks the following participants in crafting this position statement: Anthony Aglio, Trevor Booz, John Boyle, Chris Junk, Frank Warnock, Ed Weirauch, Amy Wilburn, and James Wilson.

