

Are Separated Bike Lanes a Replacement for Dual Bikeways?

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The dual bikeway facility type was developed in the 2005 Montgomery County Bikeways Functional Master Plan to “meet the needs of the total range of bicyclists.” A dual bikeway consists of both an off-road sidepath and an on-street bicycle facility on the same street. In locations where space is available, the on-street facility is typically recommended to be a bike lane; where space is not available, the on-street facility it is typically recommended to be a signed shared roadway. The dual bikeway facility type is unique to Montgomery County and was recommended in locations where the County wanted to provide separation from high-speed, high-volume traffic for what today the industry refers to as *Interested but Concerned* riders, those who are less comfortable riding in an unprotected facility on those types of streets. The additional bike lane or shared roadway facility was provided to accommodate riders who are comfortable riding near or sharing the road with higher-speed, higher-volume traffic, who would prefer to travel at a higher speed, and who do not want to be impeded by slower moving bicyclists and pedestrians.

The advent of separated bike lanes provides Montgomery County with a new tool for accommodating a wide range of cyclists. This paper evaluates whether separated bike lanes are a replacement for the dual bikeway facility type in some or all situations.

Applicability of Separated Bike Lanes to Different Bicyclists

Bicyclists can be categorized based on how much separation from traffic they need to feel comfortable riding a bicycle. *Interested but Concerned* bicyclists express an interest in bicycling more, but are concerned for their safety. They require separation from traffic to feel comfortable riding on most non-residential roads. Separated bike lanes can be a replacement for the off-road portion of a dual bikeway since bicyclists are still physically separated from automobile traffic.

Confident bicyclists require less separation from traffic to feel comfortable riding a bicycle. On higher volume and higher speed roads, many would be comfortable bicycling in a conventional bike lane and some would be comfortable bicycling in traffic. They tend to be more concerned about the ability to travel unimpeded by pedestrians than physical separation from traffic. If designed appropriately, separated bike lanes can appeal to many confident bicyclists. For those confident bicyclists who would otherwise ride in a conventional bike lane, a separated bike lane is appealing if it is wide enough to allow faster bicyclists to pass slower bicyclists.

For those confident commuter bicyclists who would otherwise ride in the street, separated bike lanes can be appealing if they are designed to provide the same quality of riding environment as the street. Commuting bicyclists often ride during peak periods when traffic volumes are at their highest, so higher speed travel (up to approximately 18 mph) and the ability to pass other bicyclists should be considered in the design process. Of course some bicyclists in this group will always prefer riding in the street.

For those recreational bicyclists traveling in groups, separated bike lanes are not an appropriate facility because the space will be too confining for larger groups and higher speed bicycling. A group would potentially take over the entire width of a two-way separated bike lane, impeding oncoming traffic, and the width of a one-way facility would not allow for the typical passing movements conducted within a group. Bicycling in the street would be more appropriate for this audience. These riders will also tend to ride on the high-volume, high-speed roads when traffic volumes are lower, such as weekend mornings, so the on-street facility will likely also be more comfortable.

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In summary, if designed with sufficient separation from traffic, wide enough to enable passing and higher speed travel, separated bike lanes can be a replacement for dual bikeways for most *Interested but Concerned* bicyclists and many, but not all, confident bicyclists.

Recommendations for Montgomery County

1. Discontinue use of the dual bikeway as a facility type and utilize separated bike lanes or shared use paths in their place.

When dual bikeways are recommended as a combined shared use path and bike lane, they may be difficult or infeasible to implement due to space constraints in many locations. Furthermore, separated bike lanes can be considered enhancements over conventional bike lanes when designed to enable passing.

As discussed previously in the “Signed Shared Roadways” issue paper, signed shared roadways are not a bicycle facility type and are not recommended to be included in master plans. It is appropriate to use signs and pavement markings, such as Bikes May Use the Full Lane or sharrows, on roadways in Montgomery County, but these decisions should be made on a case-by-case basis at the time of implementation, not as part of the master planning process.

2. Select the appropriate separated bikeway type using the criteria established in the issue paper “When should separated bikeways be implemented as shared use paths or separated bike lanes?”

Separated bike lanes are not always needed to replace dual bikeways. In fact, shared use paths may be more appropriate in many contexts than separated bike lanes.

Pedestrian demand along the study corridor should be the primary consideration for practitioners choosing between the two facility types. Just as separation from automobiles enhances safety and comfort for people bicycling and driving, separation between people walking and bicycling may be necessary to eliminate potential conflicts and maintain a comfortable and attractive facility. Where observed or anticipated pedestrian demand is low, conflicts between people walking and bicycling may be infrequent. In this situation a shared use path may comfortably and safely satisfy both bicycle and pedestrian demand. Where pedestrian volumes are observed or anticipated to be high, separate facilities should be provided for bicyclists.

Some corridors may transition from shared use paths to separated bike lanes as land use becomes more mixed or commercial, thus attracting higher pedestrian volumes. These transitions are likely along corridors that are largely residential with periodic commercial nodes at intersecting arterial streets.

3. Consider use of Bikes May Use Full Lane (BMUFL) signage and/or sharrows where space constraints necessitate a shared use path rather than separated bike lane facilities.

The master plan should recommend a shared use path or separated bike lanes based upon an understanding of available right-of-way and the level of pedestrian activity. In some locations, space may not be currently available to implement the recommended separated bike lane facility, and a shared use path could be constructed in the interim. Where this is the case, pedestrians and bicyclists will share limited space. On a case-by-case basis, the implementing agency should consider whether

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additional signage or markings on the street should be provided to notify drivers of the presence of bicyclists in the street who prefer to ride there than to share a congested path with pedestrians.

4. Consider use of Bikes May Use Full Lane signage and/or sharrows on known popular recreational group ride routes where separated bike lanes or shared use paths are provided.

On streets where shared use path or separated bike lanes are recommended in the master plan that are known popular recreational group ride routes, the implementing agency should consider whether to provide additional signage or markings on the street. Many recreational riders who ride these routes will do so during lower traffic off-peak periods and ride in the travel lane to travel at higher speeds. Drivers will be reminded that bicyclists may be present on the roadway and that they should change lanes to pass.

5. Ensure separated bike lane and shared use path design standards specify high-quality materials and construction.

These facility types will only provide an adequate substitute for on-street facilities for all rider types if they are designed to provide as high quality an experience as the street. Some existing off-street facilities are not constructed to an adequate width or quality such that all bicyclists view them as an adequate substitute for riding in the street. Proper width and construction can ensure that separated bike lanes or shared use paths are, in fact, replacements for dual bikeways. Separated bike lanes (whether in-street or outside the curb) and shared use paths should:

- Have proper drainage,
- Be designed and constructed with a quality subbase to minimize the development of surface defects and bumps over time and to provide same or better quality of surface as the adjacent roadway,
- Avoid grade changes at driveway crossings,
- Provide adequate width based on expected volumes of bicyclists (and pedestrians), and
- Include appropriate intersection design.

Examples in Montgomery County

The recommendations outlined above should be implemented consistently throughout the county on streets formerly identified as dual bikeways. The five corridors listed below were identified for dual bikeway facilities in the 2005 Master Plan. If the County desires to continue to include them in its master-planned bicycle network, separated bike lanes or shared use paths should be the recommended facility type.

Most of the length of these corridors consists of low-density residential land use where most residences front on adjacent streets. These areas are more appropriate for a shared use path facility since there are not many generators of short pedestrian trips nearby. For each of the five corridors below, locations are identified where the County may wish to indicate a separated bike lane facility instead because of anticipated higher pedestrian volumes.

MCDOT or SHA may decide to implement sharrows or Bikes May Use Full Lanes signs, but these should not be recommended in the Bicycle Master Plan.

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University Boulevard from New Hampshire Avenue to Georgia Avenue

- Commercial nodes: Columbia Pike, Georgia Avenue, New Hampshire Avenue
- School areas: Eastern Middle School, Montgomery Blair High School, Northwood High School

River Road from Western Avenue to Seven Locks Road

- Commercial node: Little Falls Parkway/Bethesda

Germantown Road from Clopper Road to Frederick Road

- Commercial node: Middlebrook Road

New Hampshire Avenue from Prince George's County to Lockwood Drive

- Commercial/mixed use node: White Oak
- Commercial node: University Boulevard, Ethan Allen Avenue

Norbeck Road from Georgia Avenue to Layhill Road

- Currently no major pedestrian generators