



SEPARATED BICYCLE FACILITIES

Separated bicycle lanes are on-street bicycle facilities with physical separation between the bicycle facility and the roadway, often through a curb, parked vehicles, planted median raised above street grade, or flexible post. Sometimes referred to as “cycle tracks,” separated bicycle lanes can increase the sense of safety and comfort for bicyclists. Separated bicycle lanes correlate positively with increased bicycling activity, as they improve comfort for all types of bicyclists, especially those that are less experienced riders. Separated facilities can dramatically reduce the risk of bicycle/vehicle conflict.

USE

- While separated bicycle lanes offer more protection and attraction than

standard on-street bicycle lanes, they also require a greater amount of street space. Separated bicycle lanes often require the conversion of curbside parking or a travel lane for implementation, which may be a significant concern in denser areas.


- Separated bicycle lanes are the preferred bicycle facility on any bicycle emphasis corridor with traffic volumes in excess of 10,000 vehicles per day. Separated bicycle lanes are also ideal for corridors with vehicle speeds higher than 35 mph, those with high collision rates, or areas with high numbers of bicyclists.

DESIGN

- Separated bicycle lanes shall have a minimum of five feet exclusive of the buffer for a one-directional facility (seven feet is preferred) and eight feet minimum for a two-way facility (10 feet is preferred), inclusive of the gutter.
- Five feet is the preferred width of the separation barrier between separated bicycle lanes and roadway travel lanes; the minimum width is three feet.
- Parked cars in the parking lane may be used as a barrier between the separated bicycle lane and travel lanes. In this case, temporary or permanent curbing and/or flexible posts may be used to ensure that parked vehicles do not encroach upon the bicycle facility.
- Separated bicycle lanes may be flush with the street level, raised to the sidewalk level, or at an intermediary level between street and sidewalk. For sidewalk-level bicycle lanes, use different colors,

materials or pavement markings to differentiate from pedestrian space.

- Separated bicycle lanes require careful design at intersections to minimize conflicts with turning vehicles and to improve legibility, visibility, and predictability for all travelers. Special bicycle traffic signals may be necessary at signalized intersections, especially for two-way cycle tracks on one-way streets.
- Use colors, yield teeth, and “Yield to Bikes” signage to make it clear that the protected bicycle lane has priority over crossing traffic. Points of conflict should be clearly marked for both the bicyclist and motorist. Bicycle through movements and motor vehicle turning movements should generally be in separate phases at intersections.
- Maintain visibility and sight triangles at driveways, alleys, or intersections.

 Bicycle facilities may offer an opportunity for porous concrete or asphalt treatments. Where space allows, use rain gardens, bioswales and raised planters in the buffer.

SPECIAL CONSIDERATIONS

- Connectivity among separated bicycle lanes and other low stress bikeways, like bicycle boulevards, is essential to attract a variety of user types.
- Separated bicycle lanes shall be routed behind transit bus bulbs to eliminate conflicts between boarding or alighting passengers and through bicyclists. Bicycle signals may be necessary for two-way separated bicycles lanes.
- Flexible posts may be necessary at entry points to the separated bicycle lane to prohibit vehicles from entering, though these are not desirable and should be used when no other options are possible. Flexible posts or delineators may be helpful for education and awareness for new facility installations as temporary measures.
- Make gutter seams, drainage inlets, and utility covers flush with the ground to prevent conflicts with bicycle tires. Ensure openings in grates are perpendicular to the bicycle direction of travel to avoid trapping bicycle tires.
- If trenching is done in the separated bicycle lane, repair the entire width of the bicycle lane so there is not an uneven surface as this can be particularly

dangerous for bicyclists. Any pavement markings that are removed or damaged with construction shall be replaced.

OPERATIONS AND MAINTENANCE

- Bicycle facilities should be kept free of debris, which has a tendency to collect at the edge of the lanes, representing a hazard to bicyclists.
- Bicycle lanes should always be plowed during snow events. They should never be used for snow storage.
- If trenching is done in the bicycle lane, repair the entire width of the bicycle lane so there is not an uneven surface as this can be particularly dangerous for bicyclists.
- Avoid locating manholes in bicycle lanes. Ensure any utility or vault covers are flush with the road surface and properly set and maintained.
- Bicycle lane striping and the associated symbols and signs are additional markings and signs that will require maintenance and replacement.
- If colored pavement is used, routine maintenance plans should be in place to keep the pavement markings clear.
- Bicycle facilities may require additional enforcement to ensure they remain free of obstacles, parked vehicles, and delivery trucks.
- When utility work requires occupying part or all of a bicycle lane, have a plan in place to prevent a significant disruption of the bicycle network. Consider adding temporary wayfinding signage around the detour.

REFERENCES

- NACTO: Urban Bikeway Design Guide, Second Edition, 2014
 - Bicycle lanes: Buffered Bicycle lanes <http://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/buffered-bike-lanes/>
 - Cycle Tracks <http://nacto.org/publication/urban-bikeway-design-guide/cycle-tracks/>
 - Cycle Tracks: Two-Way Cycle Tracks <http://nacto.org/publication/urban-bikeway-design-guide/cycle-tracks/two-way-cycle-tracks/>
- MMUTCD, 2011
 - Part 9 Traffic Control for Bicycle Facilities http://mdotcf.state.mi.us/public/tands/Details_Web/mmutcdpart9_2011.pdf
- FHWA Separated Bicycle lane Planning and Design Guide.
 - https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/