Shared/Bicycle Bus Lanes

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What is a Shared Bicycle/Bus Lane (SBBL)?

Panama City Beach
Source: Streetscape Design Manual
Interest is increasing to do more with limited street right-of-way

Source: City of Panama City Beach

Community Redevelopment Agency
Presentation Topics

- SBBL Characteristics
- Primary Issues
- Bike/Bus Interaction
- Bus Operator Training
General Findings

• SBBLs are uncommon in the U.S.
• SBBLs are common in the U.K.
• They function in different settings.
• Few studies have evaluated their safety and effectiveness.
• Bike/bus interaction can be managed.

Lambeth and Ecclesall Lane, Sheffield, United Kingdom
Source: England Cycling Gallery
SBBL Characteristics

1. Short Connector Segments

9th St. NW, Washington, D.C.
Source: JoAnne Fiebe
SBBL Characteristics
2. Urban/Downtown Locations

15th Avenue, Seattle, WA
Source: John Mauro

Chestnut Street, Philadelphia, PA
Source: Michelle, Delbertis
SBBL Characteristics

3. Suburban/Low Density

Tadcaster Road, York, U.K.
Source: England Cycling Gallery

MD 528 (Coastal Highway)
near 70th St.
Ocean City, Maryland
Source: John Ciccarelli
Off-peak, some SBBLs allow on-street parking
Main Problems Encountered

Large volumes of right-turning vehicles in the SBBL

Enforcement of SBBL preferential treatment
Bicycle/Bus Interaction

Bicycles passing the bus to the left and right

Walnut Street (separate bike lane), Philadelphia

Source: Delaware Valley Regional Planning Commission
Australian SBBL design discourages bicyclists from passing a bus on the right.

Source: AustRoads 2005, Chicago Department of Transportation 2002
Another option is signage on bus rear panel

Source: Austroads 2005
Narrow width bicycle/bus lane
To pass, one must enter adjacent lane
Washington, D.C.

Source: JoAnne Fiebe
Narrow width SBBL with advisory bicycle lane

Signage marks designated lane. Typically at the beginning of every block (design varies by municipality)

Lane markings with wide solid white line separate general purpose travel lanes

Example section approaching bus stop, using advisory bicycle lane

(not to scale)
SBBL Width

• Additional lane width is needed if bus and bicycle must remain within the SBBL while passing.

• This diagram illustrates necessary width components.

<table>
<thead>
<tr>
<th>Description</th>
<th>Label</th>
<th>Minimum Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width of bicyclist operating space</td>
<td>A</td>
<td>3'-4&quot;</td>
</tr>
<tr>
<td>Minimum clearance required between bicyclist and bus</td>
<td>B</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>Width of standard 40-foot transit bus (not including mirrors)</td>
<td>C</td>
<td>8'-6&quot;</td>
</tr>
<tr>
<td>Distance from edge of bus to adjacent lane</td>
<td>D</td>
<td>1'-9&quot;</td>
</tr>
<tr>
<td>Width of bicyclist (center of tire located 2 feet from edge of lane)</td>
<td>E</td>
<td>2'-6&quot;</td>
</tr>
<tr>
<td>Width of standard 40-foot transit bus (including mirrors)</td>
<td>F</td>
<td>10'-2&quot;</td>
</tr>
<tr>
<td>Lane stripe (wide line)</td>
<td>G</td>
<td>0'-8&quot;</td>
</tr>
<tr>
<td>Width of bus operating space</td>
<td>H</td>
<td>12'-0&quot;</td>
</tr>
<tr>
<td>Total width of SBBL</td>
<td>I</td>
<td>18'-7&quot;</td>
</tr>
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* Section 318.016 F.S.
Wide width SBBL

- X conflict between bus and bicyclist
- bus blind spots (varies depending on model, conditions)
- ----> bicyclist movement
- ----> bus movement
Figure 4-8: Aerodynamic forces caused by heavy motor vehicles passing bicyclists.

Source: A Bikeway Criteria Digest; USDOT Federal Highway Administration, 1977.
Narrow width SBBL with partial bus bay and advisory bicycle lane along left side of SBBL
Separate channel for bicyclists routed to the right of the bus stop
Example of a bus stop in the U.K.

Source: Cycling England Gallery
“The leapfrogging concept is overrated. Cyclists typically pass buses and leave them in their wake.”

Bicycle and Pedestrian Planner, City of Baltimore
Bus Operator Training

• Always assume there is a bicyclist on the right
• Check mirrors and slow down before pulling over
• Stop as close to the curb as possible at a bus stop
• Remember bicyclists you pass, in case bus passenger suddenly requests to stop
• Anticipate bicyclist evasive maneuvers where there is on-street parking,

Sources: City of Chicago Department of Transportation, Chicago Transit Authority, Washington Metropolitan Area Transit Authority, Delaware Department of Transportation, Central Connecticut Bicycle Alliance
Bus Operator Training

• Give at least three feet of space and maintain steady speed when passing a bicyclist
• Follow the bicycle from a distance of at least one bus length where there is insufficient space to pass
• Remember that bicyclists may not hear a bus approaching from behind
• Inspect brake and turn signal lights daily
• Anticipate that bicyclists may change lanes at intersections

Sources: City of Chicago Department of Transportation, Chicago Transit Authority, Washington, Metropolitan Area Transit Authority, Delaware Department of Transportation, Central Connecticut Bicycle Alliance
Public Information campaigns have been used to educate motorists and bicyclists about the proper use of the SBBLs along Hennepin Avenue in Minneapolis.

Source: City of Minneapolis Public Works
Conclusions

• As municipalities seek to provide better multimodal service within constrained right-of-way, it is possible that municipalities will want to establish more SBBLs.

• It is important for transit agencies to be involved in planning SBBLs.

City of Baltimore
Source: Nate Evans
Conclusions

- More research needs to be done, especially to compare before-and-after conditions and to evaluate safety of different designs (speed, width, layout)

- Until then, implementing SBBLs depends on professional judgment

- If an SBBL is planned as part of your public transit system, then advocate for proper data collection and analysis

Hennepin Avenue. Minneapolis, MN
Source: Minneapolis Public Works
Questions?

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Report will be made available
on NCTR website at:
http://www.nctr.usf.edu

Washington, D.C.
Source: JoAnne Fiebe