Traffic Engineering Update on Bike/Ped Topics

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Bicycle/Pedestrian Advisory Committee | August 3, 2016
Agenda

• Share the Road / Bikes May Use full Lane Signs
  • Unsignalized Crosswalks Policy Update
  • Green Pavement
  • Q&A
• Ambiguous sign message - drivers think sign is telling **bicyclists** to share the road with **drivers**
• STR plaque was historically used beneath tractor, horse-and-buggy, etc. signs
• FHWA now discourages bicycle STR signs
• VDOT updated its policy on June 24
• VDOT will now use “On Road” plaque beneath Bicycle signs
  • Existing signs can remain until end of their useful life
  • STR plaque can still be used beneath tractor, horse-and-buggy, etc. signs
• Bike-on-Road signs shall not be used on roads with bike lanes
• Only on roads with ≥ 40 mph speed limit
BMUFL | Existing & New Policies

- **Existing**
  - Only on roads with speed limit $\leq 35$ mph
  - Do not use where bike lanes or wide shoulders are present

- **Additional policies as of June 2016**
  - Clarifies “wide shoulders” – signs shall not be used where paved shoulder is $\geq 4$ ft
  - Should not be used on very low-volume roads ($< 1,000$ ADT)
  - Should not be used on very high-volume roads ($> 30,000$ ADT)
Agenda

• Share the Road / Bikes May Use full Lane Signs

• Unsignalized Crosswalks Policy Update

• Green Pavement

• Q&A
Crosswalks | Old Policy

- Guidelines for Installation of Marked Crosswalks document
- Research document completed in 2005
- Similar to 2002 FHWA study

<table>
<thead>
<tr>
<th></th>
<th>≤ 9,000 ADT</th>
<th>&gt; 9,000 ADT to ≤ 12,000 ADT</th>
<th>&gt; 12,000 ADT to ≤ 15,000 ADT</th>
<th>&gt; 15,000 ADT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤ 30 mph</td>
<td>35 mph</td>
<td>≥ 40 mph</td>
<td></td>
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<tr>
<td>2 lanes</td>
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<td></td>
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<tr>
<td>3 lanes</td>
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<tr>
<td>++ 4 lanes,</td>
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<tr>
<td>raised median</td>
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<tr>
<td>++ 4 lanes,</td>
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<tr>
<td>no median</td>
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Crosswalks | Issues With 2005 Policy

- Little guidance for stop-controlled approaches
- Predates many recent federal & state policy changes (e.g. ADA, MUTCD)
- Technology changes
- Is not always clear in intent
- Lacks consistent, enforceable requirements for developers
New “version 1.0” policy released July 2016
- Pressing need for more complete guidance
- Not perfect, but better than previous 2005 guidance
- Please provide us feedback which we can consider for next update (“version 1.1”)
- Companion to another policy document (under development) regarding peds at traffic signals

Crosswalks | Contents of New Policy

- Background (CTB Ped Accommodations Policy)
- ADA Requirements
- Relationship to applicable sections of VA Code
- When to install marked crosswalks
  - Stop-or yield-controlled approaches
  - Uncontrolled approaches (at int’s or mid-block)
- Crosswalk Design (width, marking pattern)
- Other ped safety enhancements
- Unique locations (roundabouts, interchanges)
# Crosswalks

## Midblock crosswalks

<table>
<thead>
<tr>
<th>Roadway Configuration</th>
<th>Roadway ADT and Speed Limit</th>
<th>≤ 30 MPH</th>
<th>35 MPH</th>
<th>40 MPH</th>
<th>≥ 45 MPH</th>
<th>≤ 30 MPH</th>
<th>35 MPH</th>
<th>40 MPH</th>
<th>≥ 45 MPH</th>
<th>≤ 30 MPH</th>
<th>35 MPH</th>
<th>40 MPH</th>
<th>≥ 45 MPH</th>
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<tbody>
<tr>
<td>2 Lanes (undivided two-way street or two-lane one-way street)</td>
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<td>A</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>A</td>
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<td>B</td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>3 Lanes with refuge island or 2 Lanes with raised median*</td>
<td></td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>3 Lanes (center turn lane)</td>
<td></td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>B</td>
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<td>A</td>
<td>B</td>
<td>B</td>
<td>C</td>
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<tr>
<td>4 Lanes (two-way street with no median)</td>
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<td>A</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>5 Lanes with refuge island or 4 lanes with raised median*</td>
<td></td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>A</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>5 Lanes (center turn lane)</td>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>B</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>6 Lanes (two-way street with* or without median)</td>
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<td>B</td>
<td>D</td>
<td>D</td>
<td>B</td>
<td>B</td>
<td>D</td>
<td>D</td>
<td>B</td>
<td>D</td>
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</tbody>
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### Conditions

- **Condition A**: Candidate site for marked crosswalk alone (standard if speed limit is 30 MPH or less, high-visibility if speed limit is 35 MPH or greater). Evaluate need for advance signing.

- **Condition B**: Potential candidate site for marked crosswalk. Location should be monitored & consideration given to providing a high-visibility crosswalk and/or warning signs (see Section 7.2).

- **Condition C**: Marked crosswalks alone are insufficient. The crosswalk shall use a high-visibility pattern and other improvements (warning signs and/or geometric/traffic calming improvements) (see Section 7.2) will likely be necessary.

- **Condition D**: Marked crosswalks shall not be installed.
Crosswalks | Crosswalk Design

- Crosswalk Width
  - 6’ min width (7’ min preferred)
  - 10’ maximum, generally

- Crosswalk marking patterns
  - Standard (two parallel lines)
  - High-visibility (Longitudinal lines or “bar pairs”)

- Crosswalks shall connect to curb cuts, when present, and shall avoid “kinks”
Crosswalks | Other Safety Enhancements

- New Rectangular Rapid Flashing Beacons (RRFBs) guidance
  - Minimum vehicular and pedestrian volume thresholds
  - RRFB sign placement
  - RRFBs shall not be used on roads > 45 mph speed limit
- Brief discussion of Pedestrian Hybrid Beacons (PHBs)
- Brief discussion of other treatments (corner bulbouts, reducing corner radii, etc.)
Agenda

- Share the Road / Bikes May Use full Lane Signs
- Unsignalized Crosswalks Policy Update
- Green Pavement
- Q&A
In 2011 FHWA gave “Interim Approval” for use of green pavement

Supplements (does not replace) bike lane markings. White long lines still required.

Interim Approval does NOT cover experimental treatments (examples on subsequent slides)
Green Pav’t | Allowable Uses
Green Pav’t | Status In Virginia

• VDOT received approval from FHWA on 7/15/16
  • “IA-14.94 – Green Colored Pavement for Bicycle Lanes – Virginia DOT”
• Approval includes localities that maintain their own roads (e.g. Cities, Arlington, & Henrico)
• Is NOT approval for experimental treatments
• Currently no installations on VDOT roads
  • Fairfax County/NOVA District are considering locations
• Recommendation: use sparingly
Green Pav’t | Conditions of I.A.

- Only install in accordance with the conditions of FHWA’s Interim Approval
  [http://mutcd.fhwa.dot.gov/resources/interim_approval/ia14/ia14grnpmbiketlanes.pdf](http://mutcd.fhwa.dot.gov/resources/interim_approval/ia14/ia14grnpmbiketlanes.pdf)
- Regions to maintain list of locations where green pavement is used
- Installed with the right chromacity and with material that minimizes loss of traction to cyclists
- FHWA reserves the right to terminate the Interim Approval at any time
Questions? Comments?