Innovative Pavement Markings to Facilitate Bicycle Travel

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Peter Ohlms
Research Scientist
Two-Stage Left Turn

1. Approaching on a green signal, proceed to designated bicycle waiting area.

2. Proceed across intersection when cross street has green signal.
Image from http://nacto.org/cities-for-cycling/design-guide/intersection-treatments/bike-boxes/.
Sketch provided by City of Charlottesville
Conflict Analysis

• Surrogate for crash analysis

• Apparent conflicts (legal violations)
  – Bicyclist making an illegal left turn
  – Motorists illegally turning right on red
  – Bicyclists proceeding on a red signal indication

• Actual conflicts between bicyclists and other road users
  – Precautionary or emergency braking
  – Precautionary or emergency change of direction
  – Full stop
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Technical Review Panel
John Bolecek, VDOTTMPD (co-champion)
Harry Campbell, VDOT TED (co-champion)
Ben Cottrell, VCTIR SOTE
Martha Kapitanov, FHWA Virginia
Jon Monceaux, UVA Parking & Transportation
Dan Painter, VDOT Culpeper
Amanda Poncy, City of Charlottesville

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Overview of VCTIR Research Program

BPAC
3/26/2014
Core Functions

• Develop and deliver an applied research program that supports the VDOT mission
• Provide expert consultation to VDOT Operations
• Provide post-research implementation support
• Provide educational opportunities for future professionals through graduate assistantships
• Provide technical oversight of university contract research
VDOT’s Research Bridge to Solutions

Bus clip art copyrighted by Bobbie Peachey, http://webclipart.about.com
How We Get the Research Done

• In-house staff (50 full-time employees)
• University faculty and graduate students through contract research
Implementation

- Research focuses on implementation from the beginning
  - Benefits
    - Monetary (short- and long-term)
    - Other (safety, efficiency, etc.)
  - Resources needed
    - Money
    - People and roles
  - Field demonstration (if applicable)
FY 12 Funding Sources

- State $1,181,477 (state project and Mid-Atlantic University Transportation Center)
- State Planning and Research (federal allocation) $5,752,604
- Grants $5,703,841
- Other Sources $2,682,372
- TOTAL FY12 $15,320,294
Contract Research

Note: The reported figures are total lifetime value of active contracts

- **State** $107,657
- **SPR** $2,798,512
- **Grants** (Bridge programs, Pooled Fund Studies, FHWA earmarks, universities/state agencies) $14,236,910
- **Other Sources** $3,861,192

**TOTAL (Lifetime)** $21,004,271
Universities Play Key Role

- Expansion of the research program
- Partnerships to leverage resources, attract grants for collaborations
- Shared laboratories
- Effective access to faculty and students
For more information:

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