



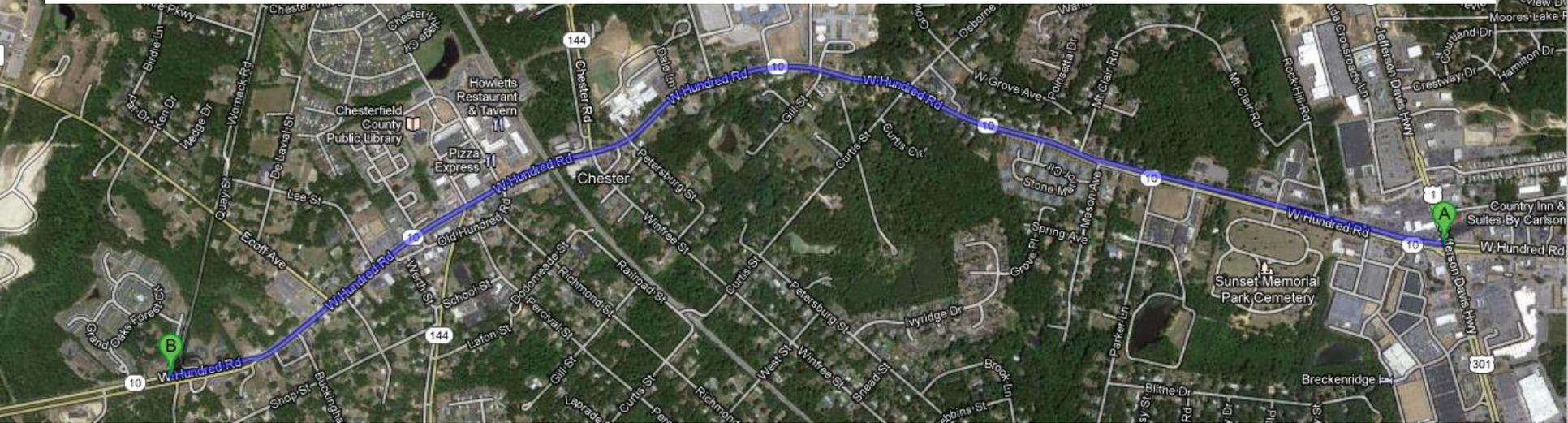
Accommodation of Bicyclists on Route 10

January 27, 2015

Richmond District Staff: Tom Hawthorne, Dale Totten, and Robert Vilak

VCTIR staff: John Miller and Peter Ohlms

Route 10 Overview: Chester (Not Arlington)



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- ❑ Primary facility providing access to I-95
- ❑ Segment is between Womack Road and U.S. Route 1/301
- ❑ Carries 30,000 vehicles daily
- ❑ Mostly 5-lane cross-section
- ❑ 3% large trucks and 35-45 mph speed limit
- ❑ Sidewalks but no bicycle facilities

Current Configuration



5 lanes X 12 ft each = 60 feet of pavement
With gutter pans = 63 feet “curb-to-curb”

Two Questions

- 1. What is the crash risk associated with narrowing the vehicle travel lanes below 12 feet?**
- 2. What options exist for accommodating bicyclists without acquiring additional right-of-way?**

Crash Risk of Reducing Lane Widths to 11 feet

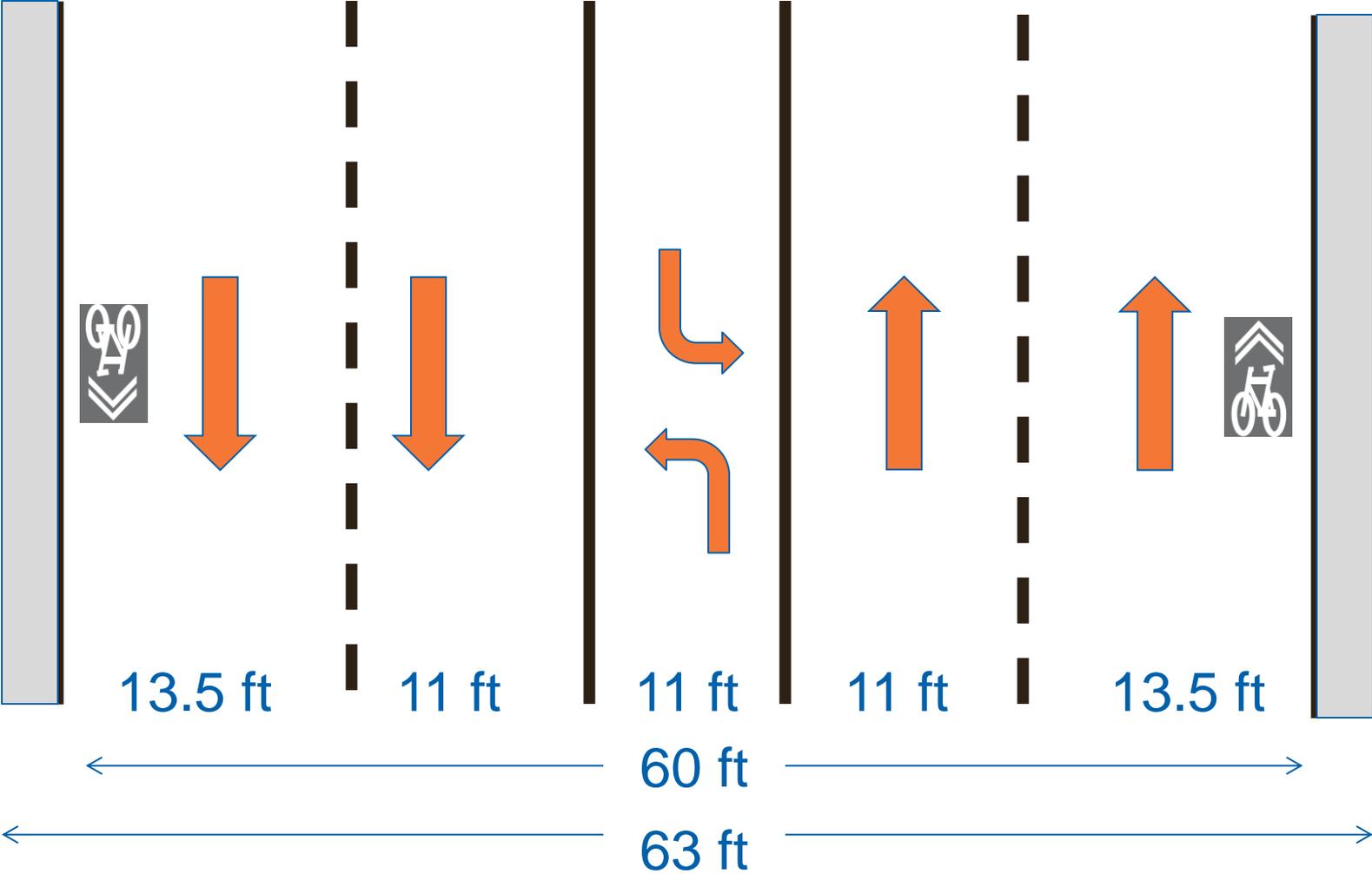
- ❑ **Highway Safety Manual: no lane-width crash reduction factor for this type of suburban arterial.**

- ❑ **Literature:**
 - **No consistent relationship for lane width vs. safety**
 - **No increase in injury crashes expected.**

- ❑ **7 percent of crashes at the Route 10 site are same-direction sideswipe.**

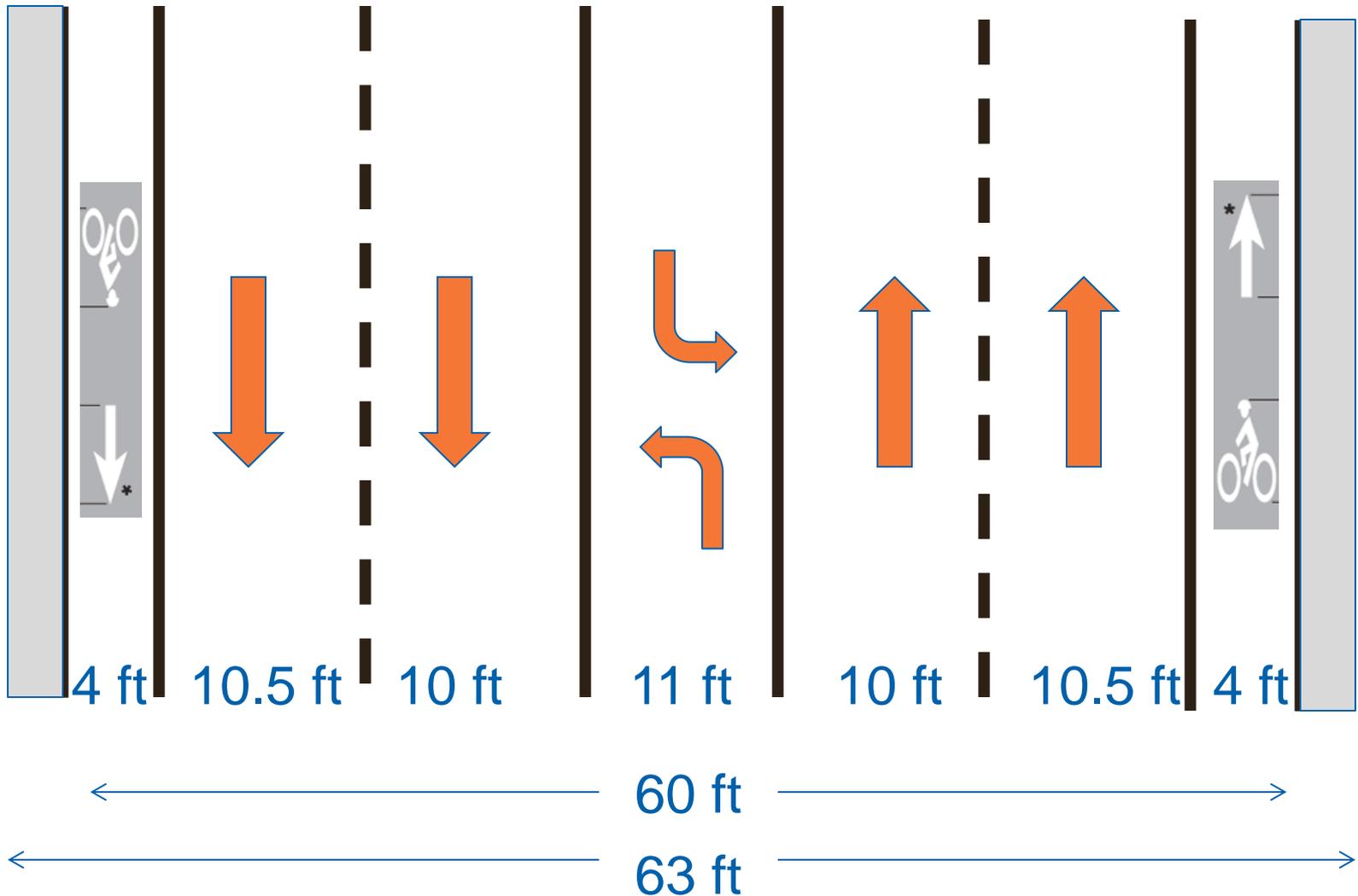
- ❑ **Design guidance: 11-foot lanes are permissible.**

Option 1: Wider Right Lane



Gutter pan achieves 14 ft width for outside lanes for cyclists

Option 2. Dedicated Bicycle Lanes (Minimal Bike Lane Width)



Option 3: Edge Lines for an Unmarked Lane Examples



Kissimmee, Florida

FHWA, 1999
(Location Unknown)



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How do Other States Accommodate Bicyclists?

Examples of Comparable Multilane Streets With Bicycle Accommodations

Location	Vehicles per day (truck %)	Total width in feet (travel-lane width)	Bicycle treatment
Chester, Va.	22k-32k (3%)	60 (12)	None at present
Austin, Tex.	36,000 (2%)	90 (10)	Bike lane (5-6 ft)
Chapel Hill, N.C.	27,000	64 (11&15)	Wide curb lane (15 ft)
Charlottesville, Va.	23,700 (1%)	60 (10.5)	Bike lane (5-5.5 ft)
Philadelphia	20,000	62 (10)	Bike lane (6 ft)
Portland, Ore.	20k-40k (5%)	76 (10)	Bike lane (5 ft)
Ormand Beach, Fla.	30,000 (9%)	Varies (11)	Bike lane (7.9 ft) and Wide curb lane

Most sites had speed limits of 35 – 40 mph
(except part of Philadelphia site)

Summary of Options: Pros and Cons

	Current Conditions	Wide Outside Lanes	Bike Lanes	Undesignated Shoulder
++ = best + = moderately - = minimally/none				
Consistent with current design guidance	++	++	+	-
Multiple current examples elsewhere	++	++	++	-
Provides for bicycling	-	+	++	+
Provides for large trucks	++	++	-	+
Improves conditions for pedestrians	-	-	++	+

Observations

- 1. The maintenance program enables an accommodation of bicycles: a variant of option 2 (bike lanes) was selected.**
- 2. Careful interpretation of design guidelines is needed to consider risk of these options as literature evolves.**
- 3. Presentation of multiple options allows progress toward a multimodal investment.**
- 4. The information exchange between District staff and the BOS member provided this opportunity.**
- 5. Maintenance matters.**



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John Miller: John.Miller@VDOT.Virginia.gov

Peter Ohlms: Peter.Ohlms@VDOT.Virginia.gov