

Princes Fork Road Safety and Mobility Study

Public Meeting

Presented by
VHB | toXcel

May 16, 2017

Purpose

Develop recommendations to improve multimodal safety and mobility along the Prices Fork Road corridor



Project Process



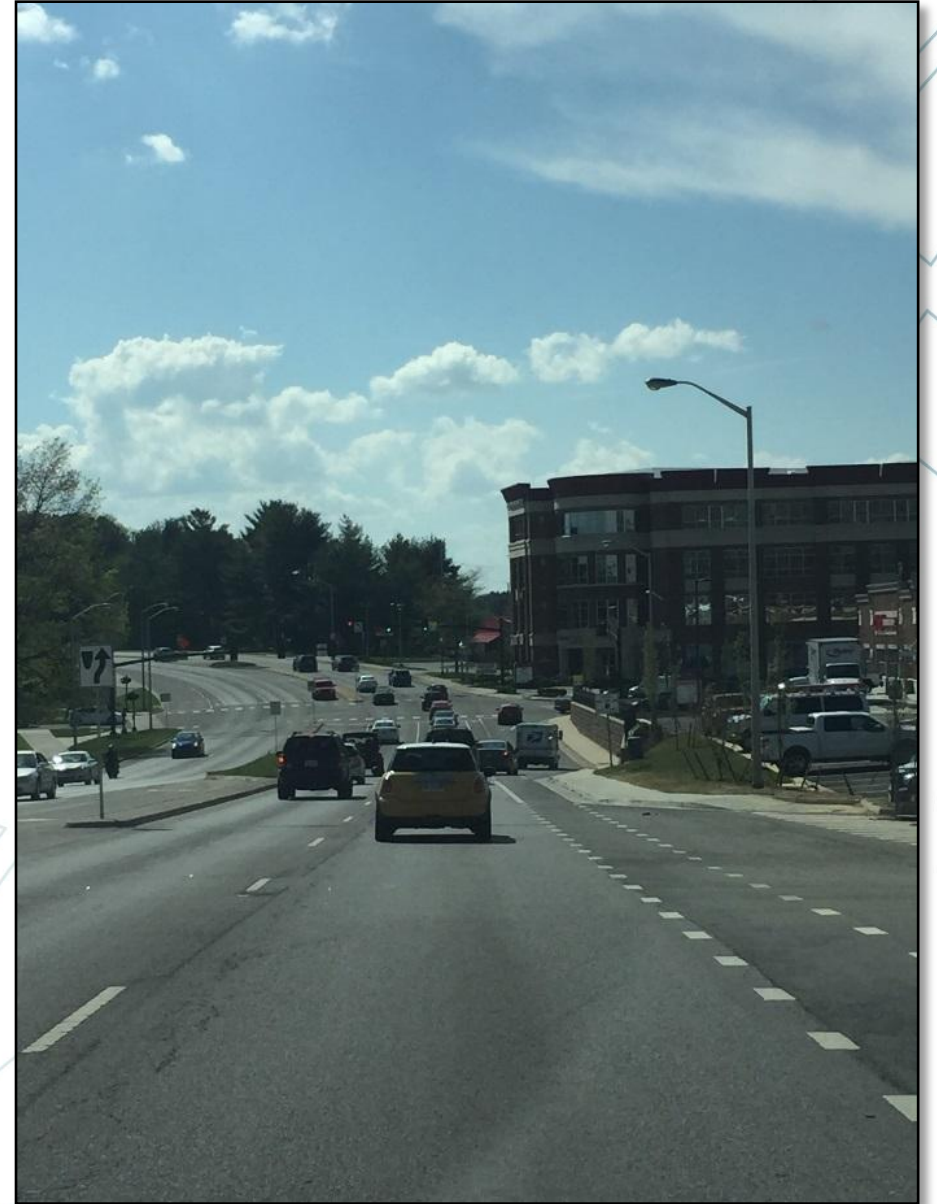
Agenda

- Welcome and study background 5 minutes

- Existing and future conditions 10 minutes
 - Pedestrian/bicycle facilities
 - Vehicular operations
 - Road safety evaluation
 - Planned improvements

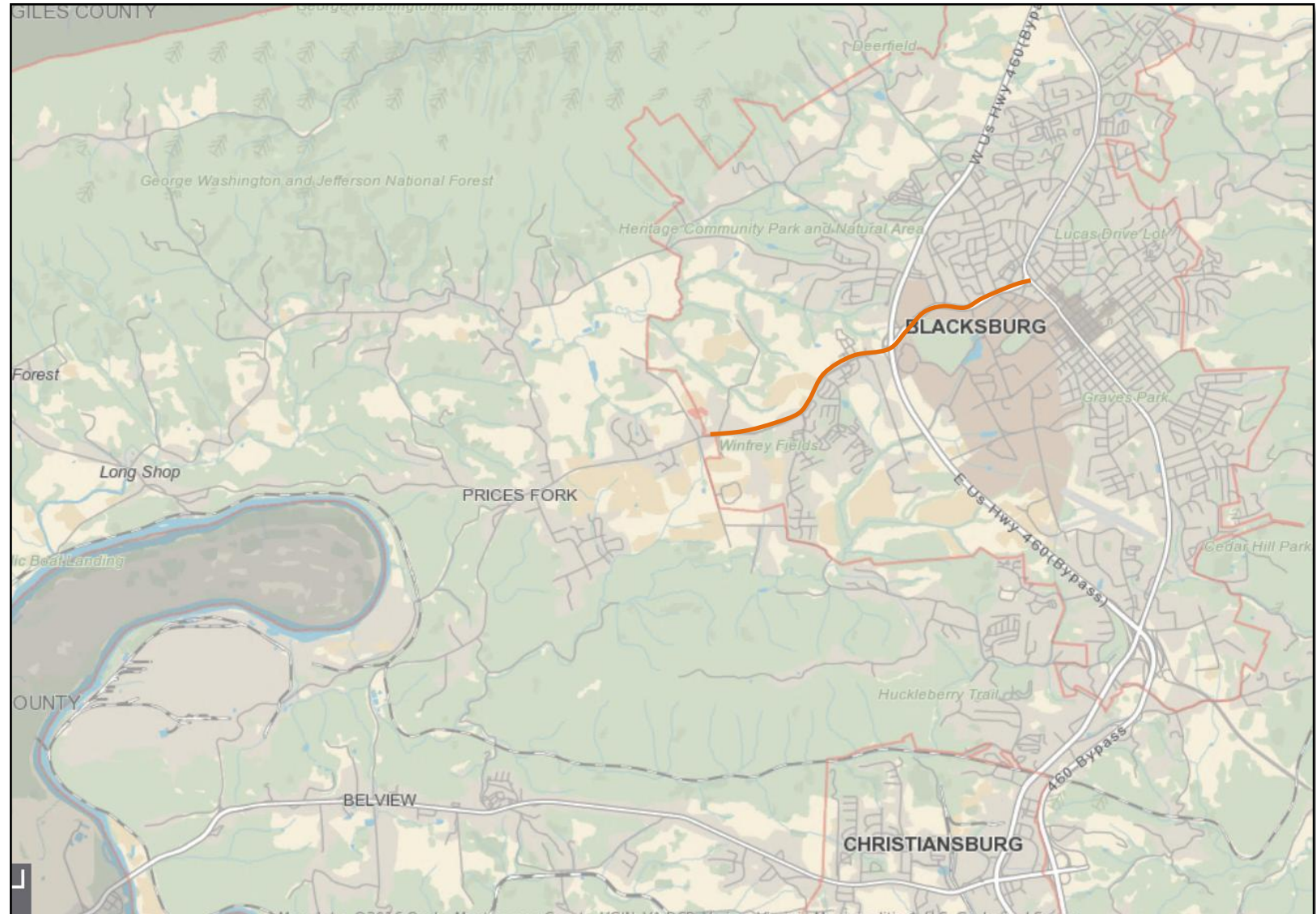
- Recommendations overview 20 minutes
 - Pedestrian/bicycle facilities
 - Vehicular operations

- Discussion



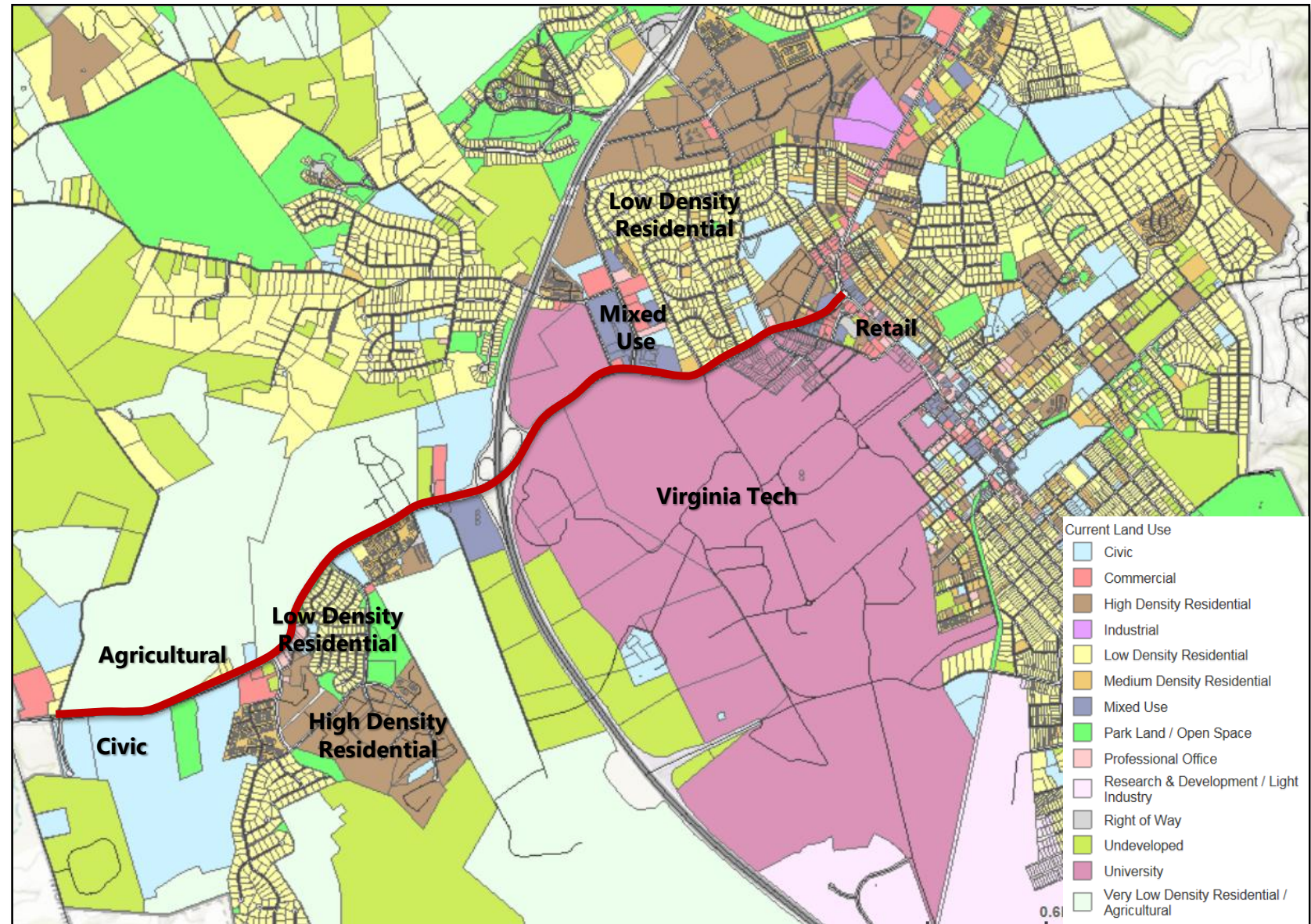
Regional Transportation Context

- Primary east-west road through Blacksburg (only route for many destinations)
- Links Town to communities to the west (Prices Fork Village, Radford, Pulaski, Dublin)
- US Route 460 interchange access
- Northern access to Virginia Tech
- Other major destinations along route (schools, University Mall, retail, large apt complexes)

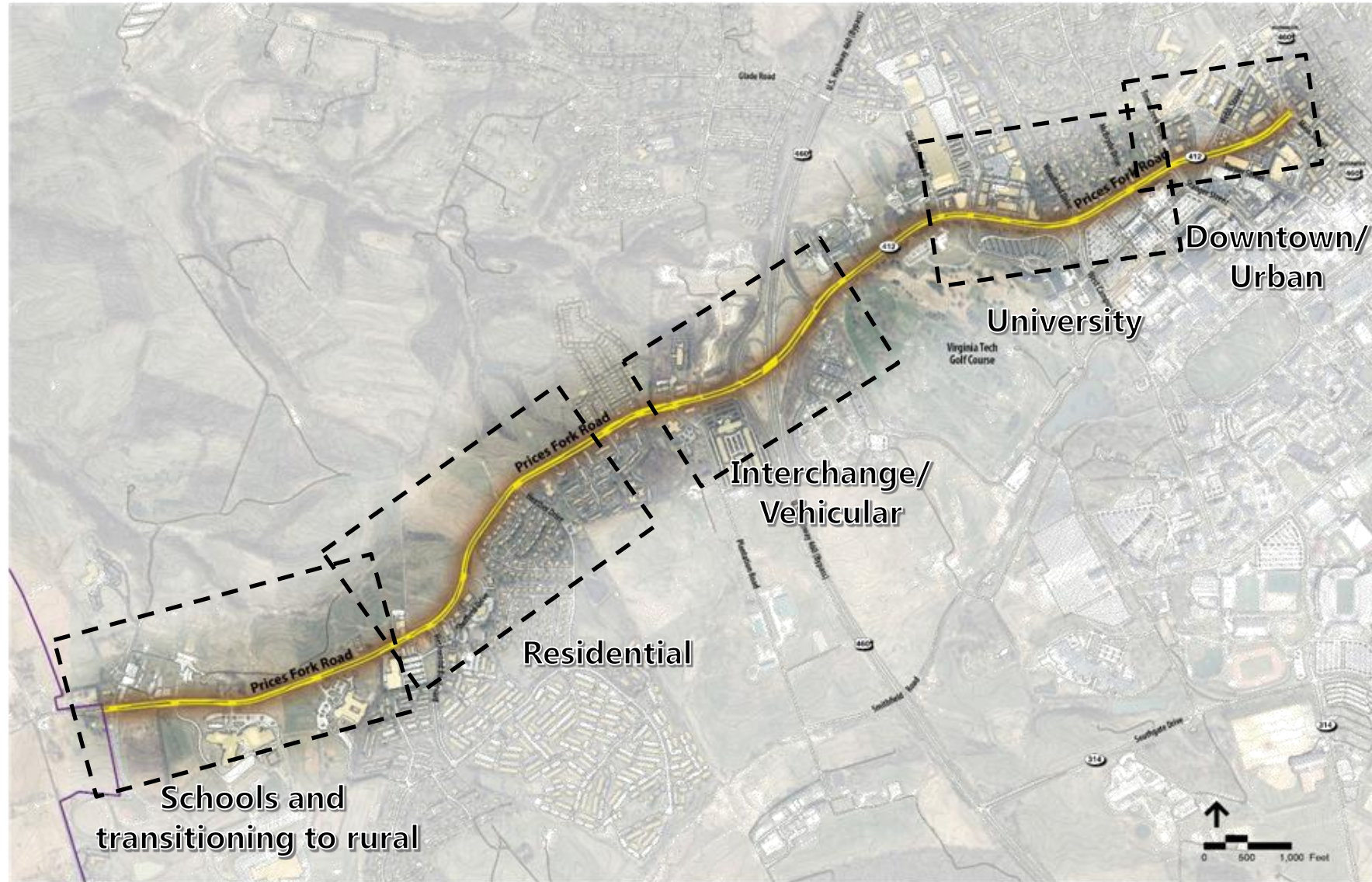


Land Use

- University located along southeast edge of corridor
- Commercial centers
 - University Mall area
 - Main Street area
 - Hethwood Square
- Low and high density residential communities
- Elementary, middle and high schools



Roadway Character



Existing Conditions



Existing Bicycle Accommodations



Bruin Ln to Heather Dr.

- No bicycle lane (2' shoulder only)
- Partial shared use path along north side

Heather Dr. to Plantation Dr.

- 4' bicycle lanes
- Partial shared use path along north side

US 460 Interchange

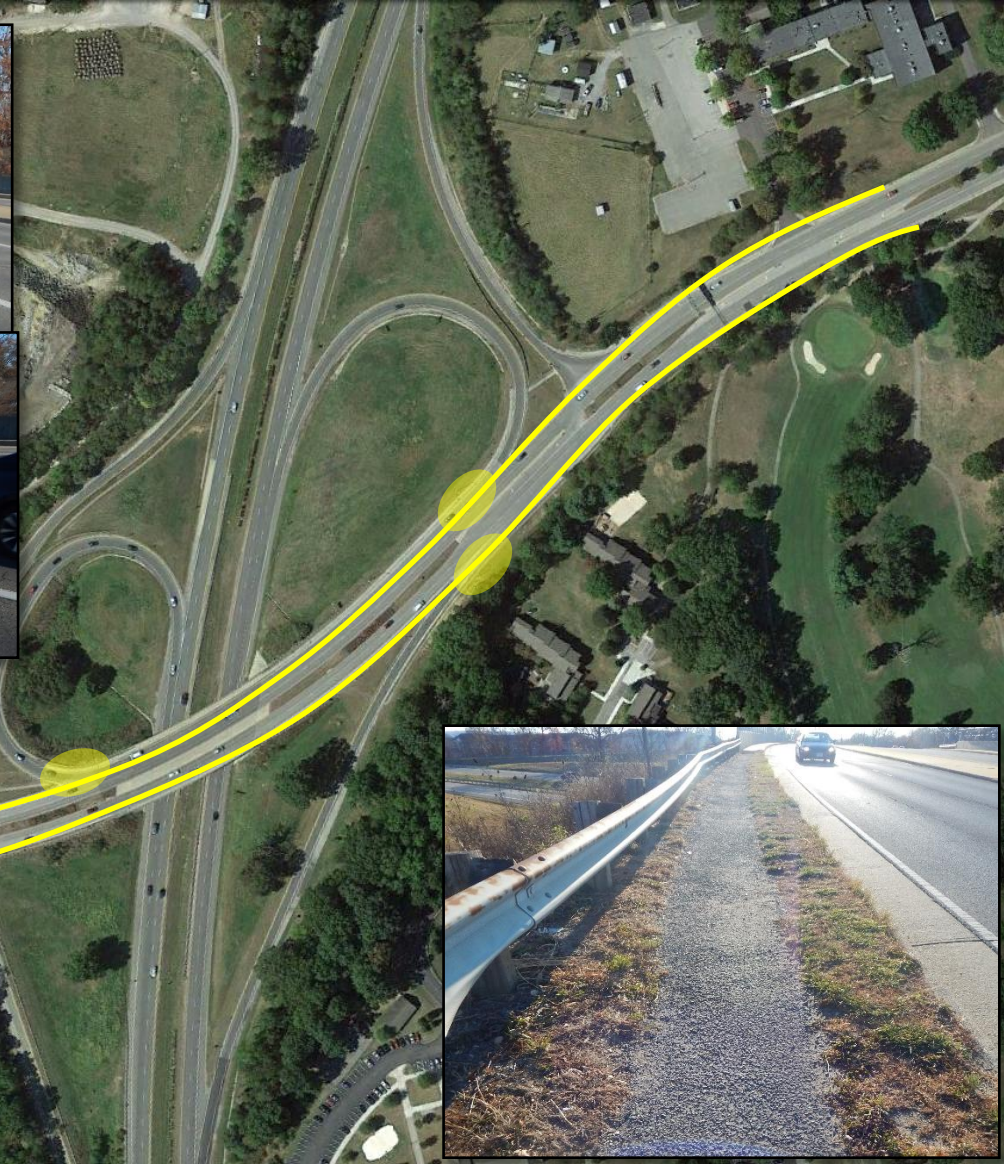
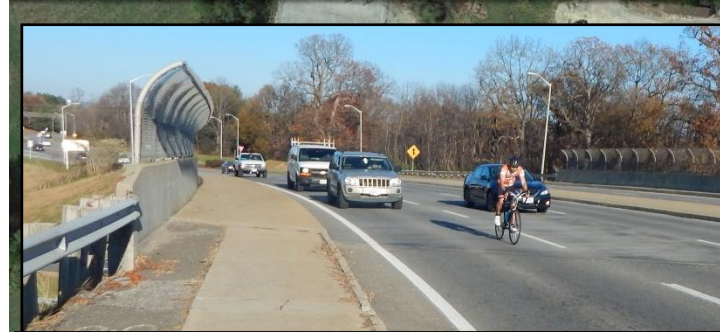
- Narrow path adjacent to sidewalk

US 460 to Main Street

- 4' bicycle lanes
- Off-street shared use path on south side between US 460 and West Campus Drive

Bicycle Facility Deficiencies

- Continuity and connectivity
 - Inadequate facilities west of Heather Drive
 - Gaps in on-street network
 - Lack of off-street options
- US 460 interchange
 - Higher speed merges, diverges, weaves
 - Lack of adequate bicycle or shared use paths
 - Narrow path next to guardrail and steep grades (48" "bike safe" rail preferred)

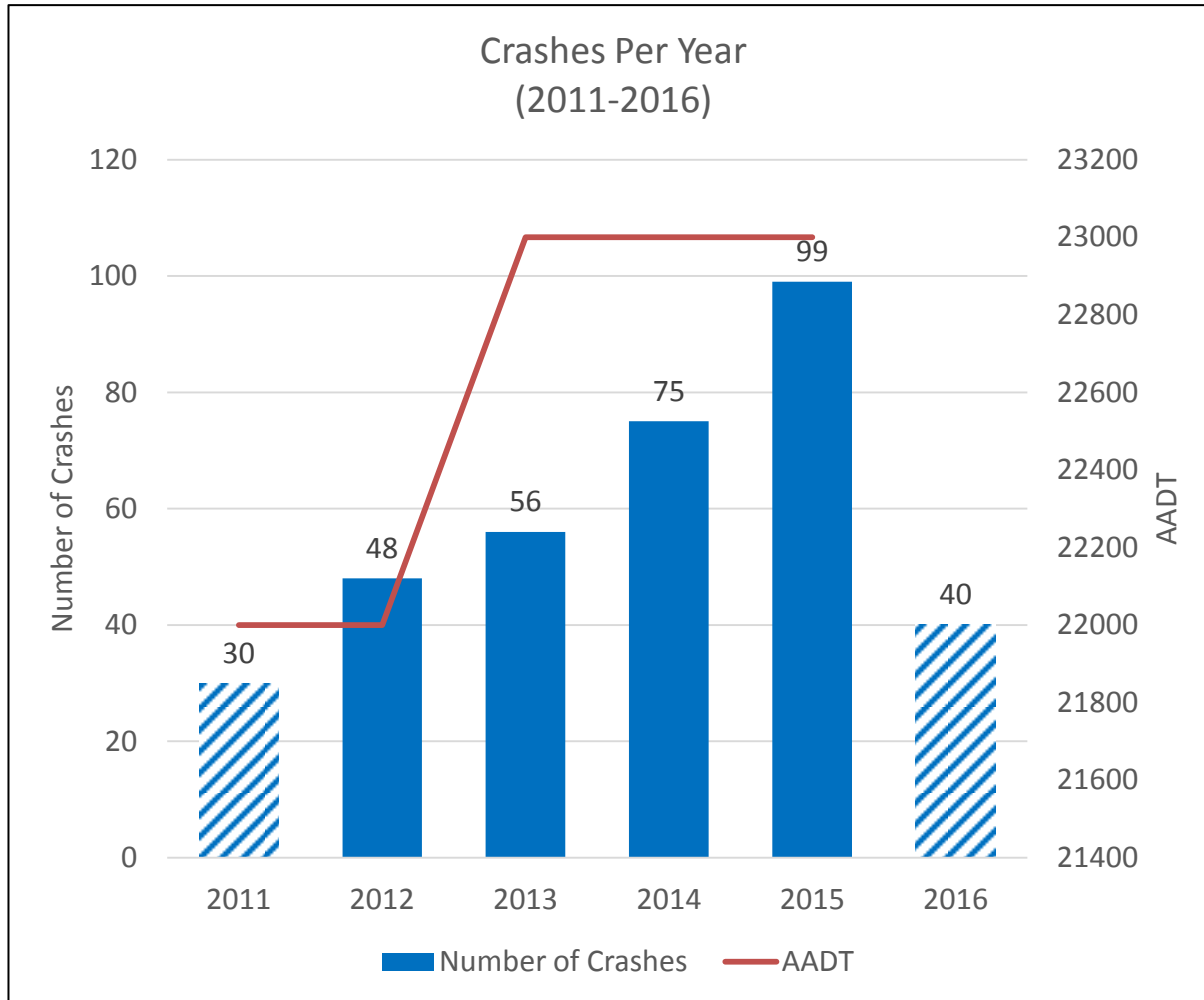


Existing Pedestrian Accommodations

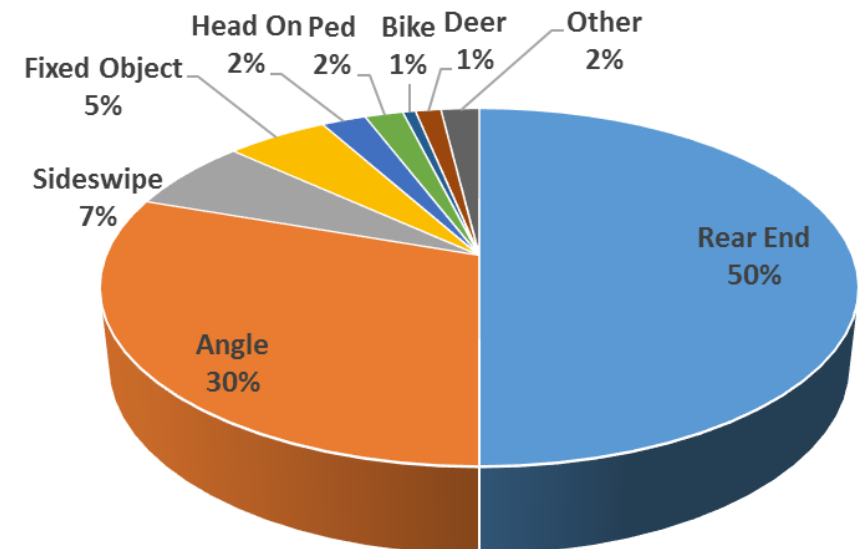
- 5' sidewalk generally present along both sides of Prices Fork Road
- Crosswalks and pedestrian signal phasing present at most signalized intersections
- Generally no separation between back of curb and sidewalk



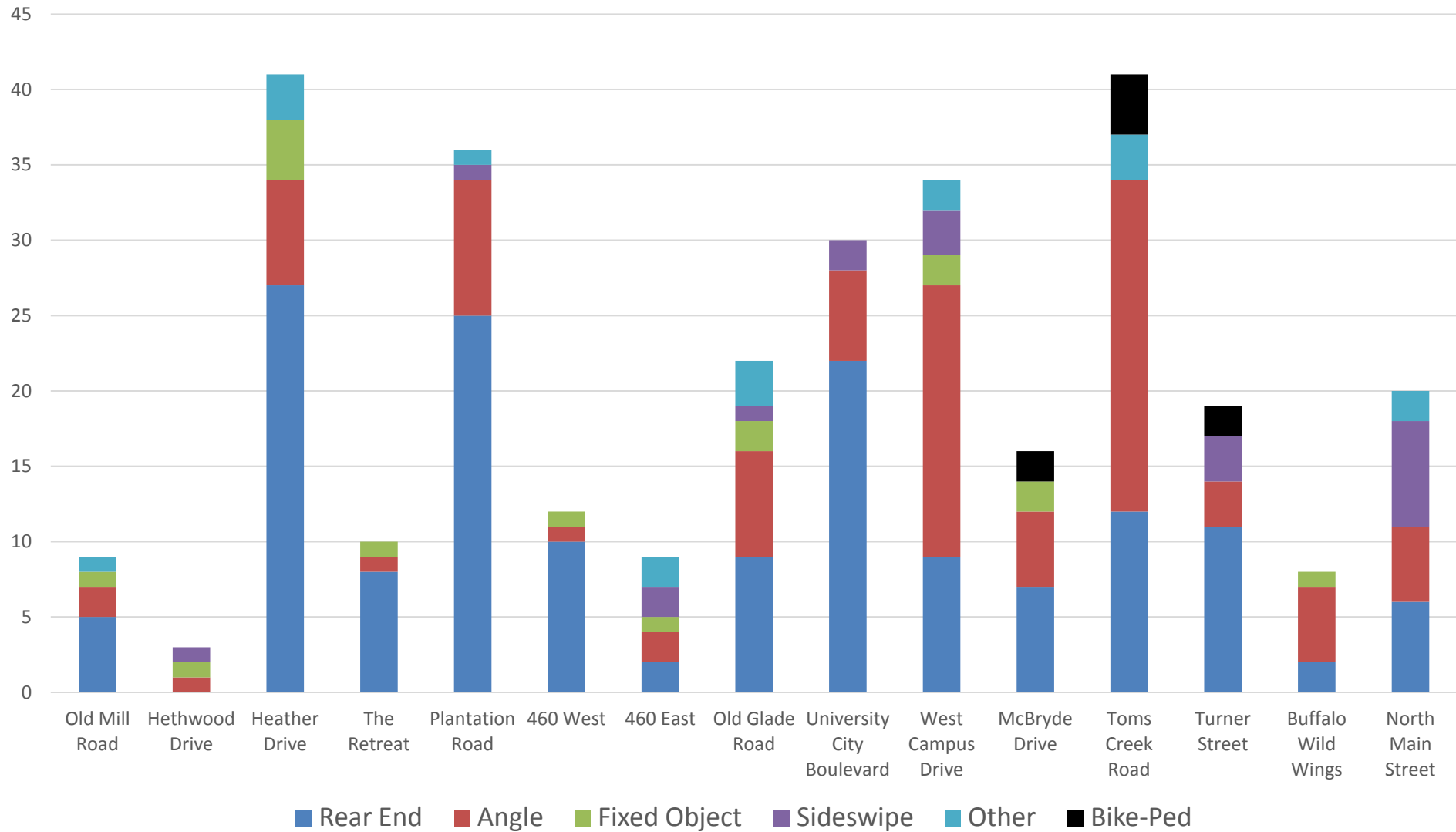
Existing Crash Trends



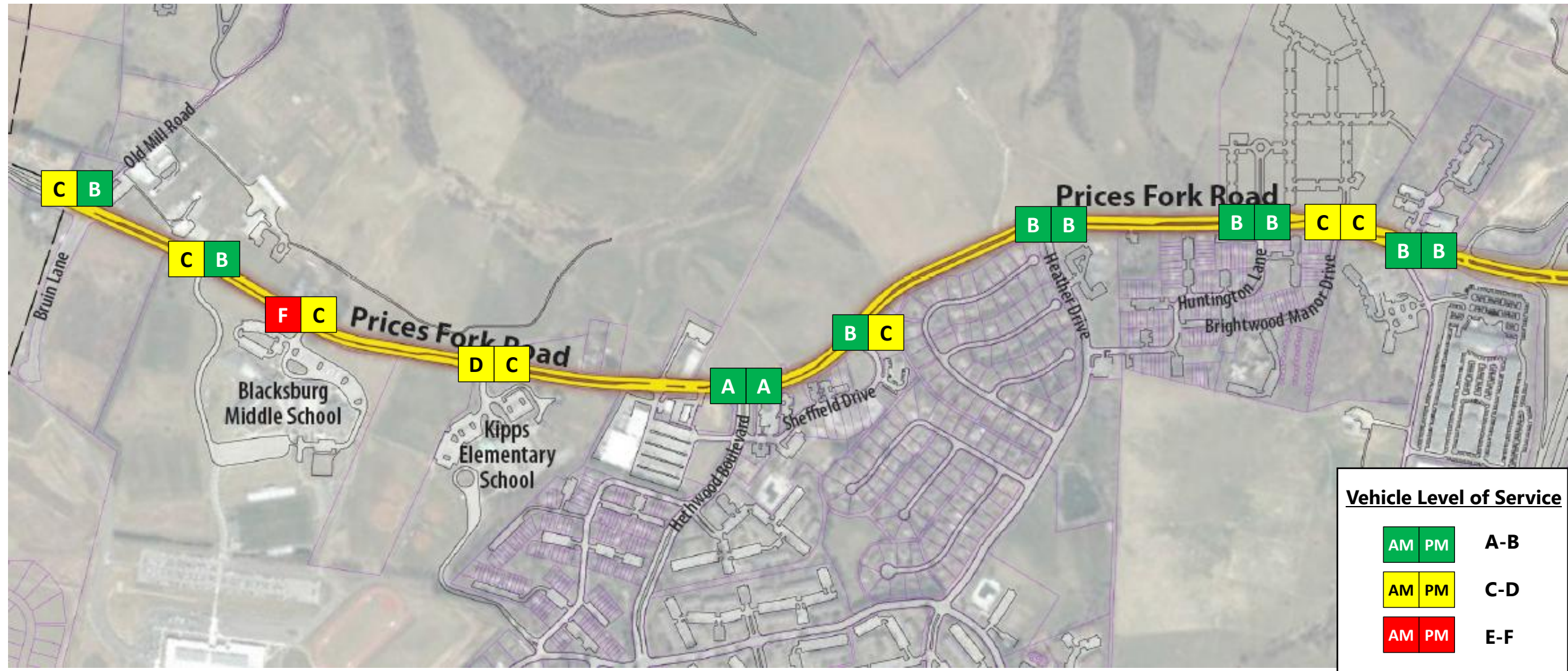
- Crash data collected between
 - June 30, 2011 and June 30, 2016
- Total of 348 crashes
- Highest frequency of crashes occurred in the following years:
 - 99 crashes (2015)
 - 75 crashes (2014)
 - 56 crashes (2013)



Prices Fork Road – Crashes by Intersection by Type

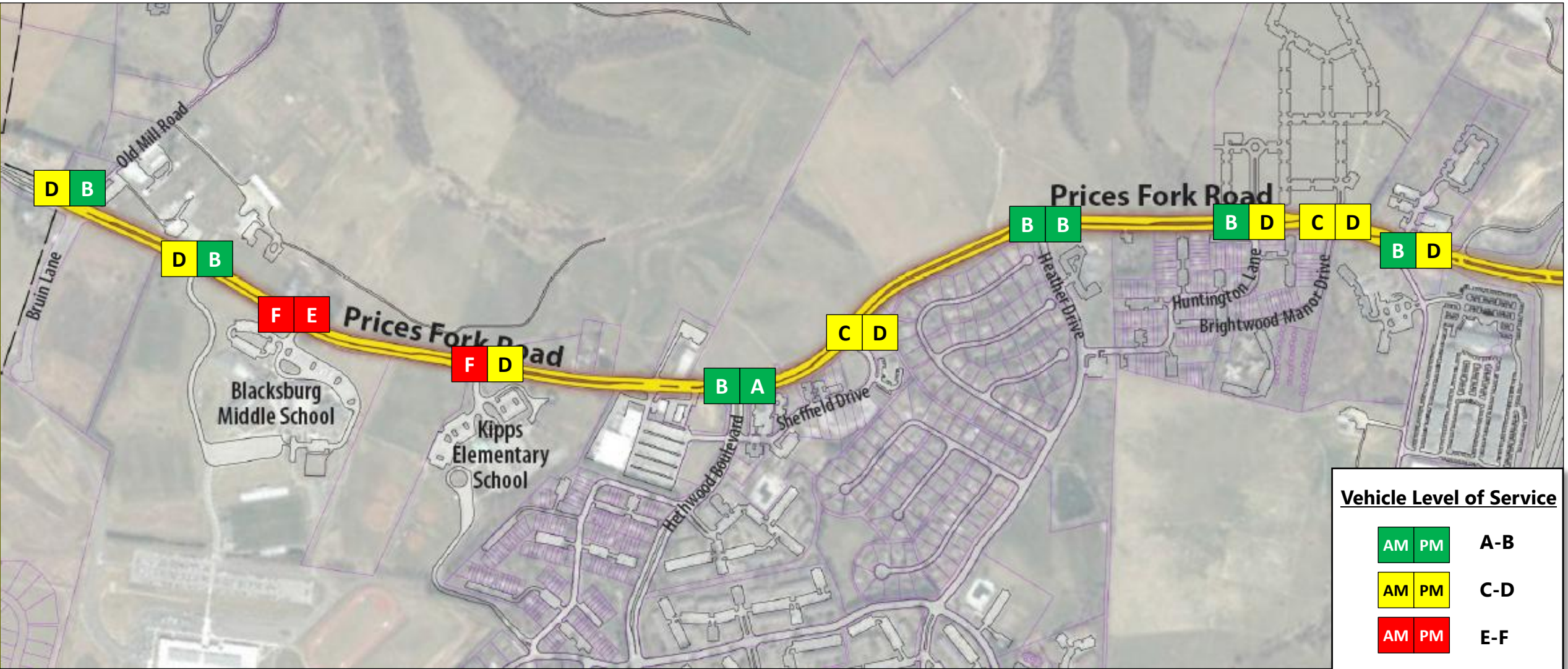


Existing (2016) Traffic Operations (West)

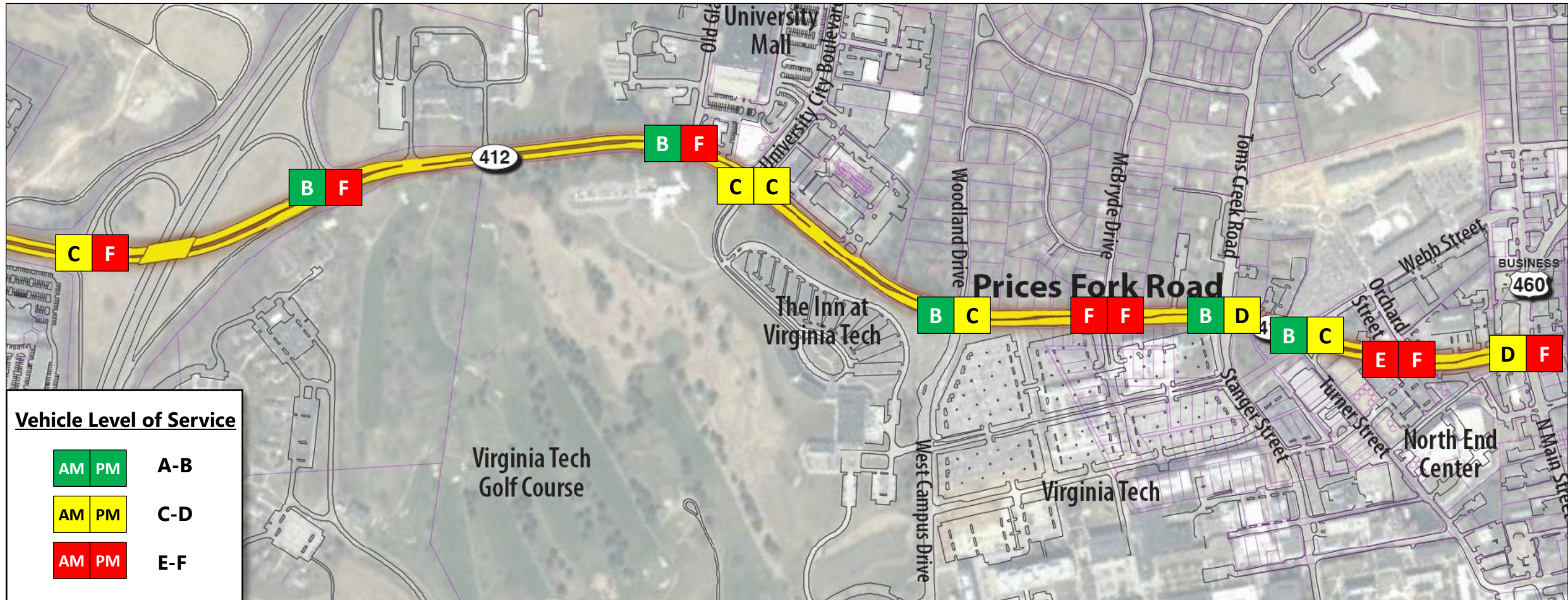


Vehicle Level of Service		
AM	PM	A-B
AM	PM	C-D
AM	PM	E-F

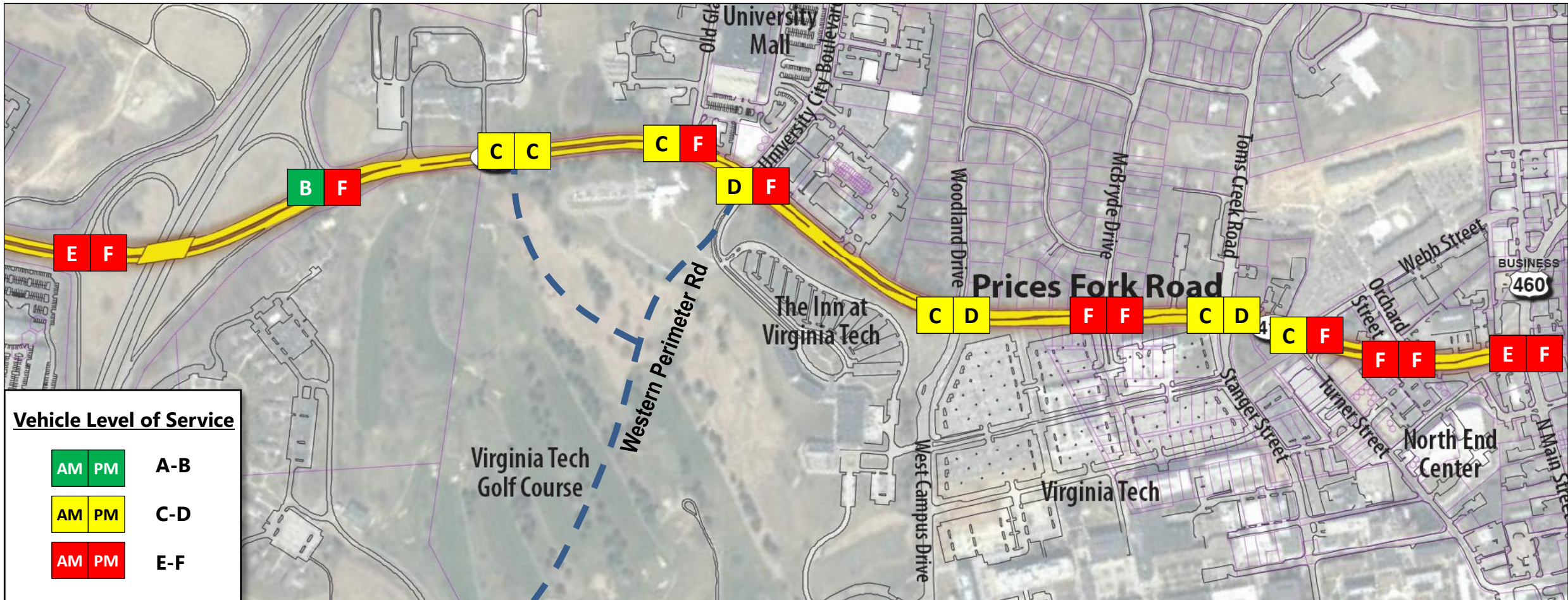
Future (2040) Traffic Operations (West)



Existing (2016) Traffic Operations (East)



Future (2040) Traffic Operations (East)

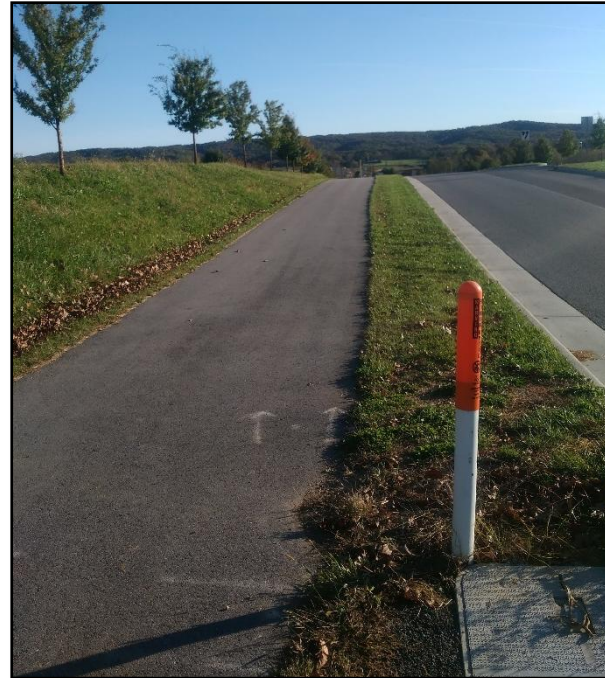


Project Recommendations

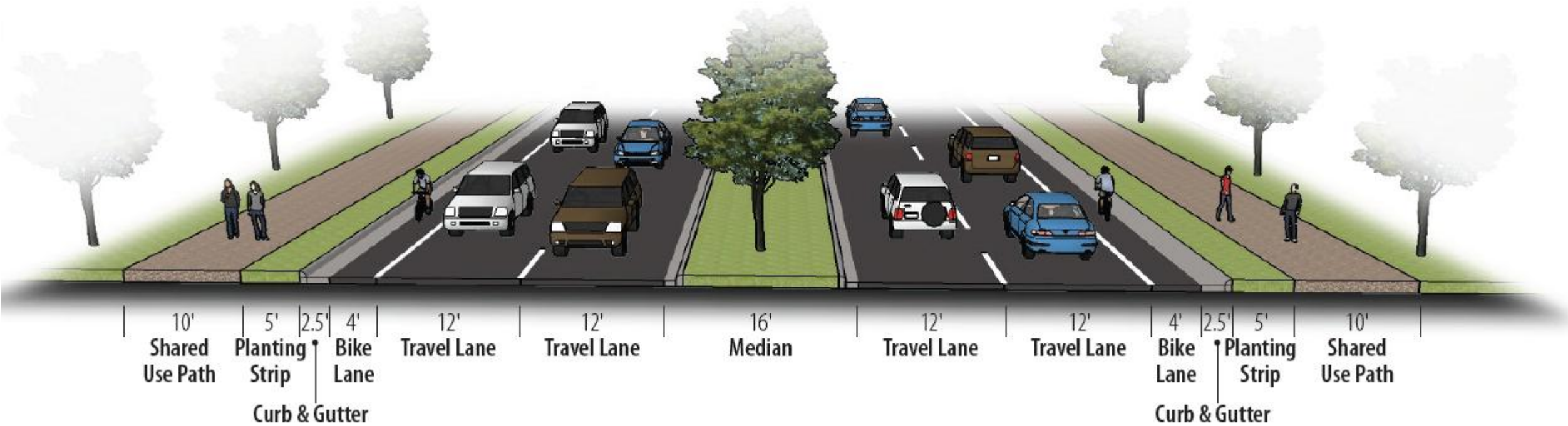


Bicycle and Pedestrian Recommendation Considerations (west)

- Partial shared-use path in place
- Connections to existing paths
- Interest in recreational use
- Few driveway conflicts
- Relatively few constructability issues
- Need for separation between sidewalks and travel lanes
- Desire to have both on street and off street bicycle facilities
- Coordination with County

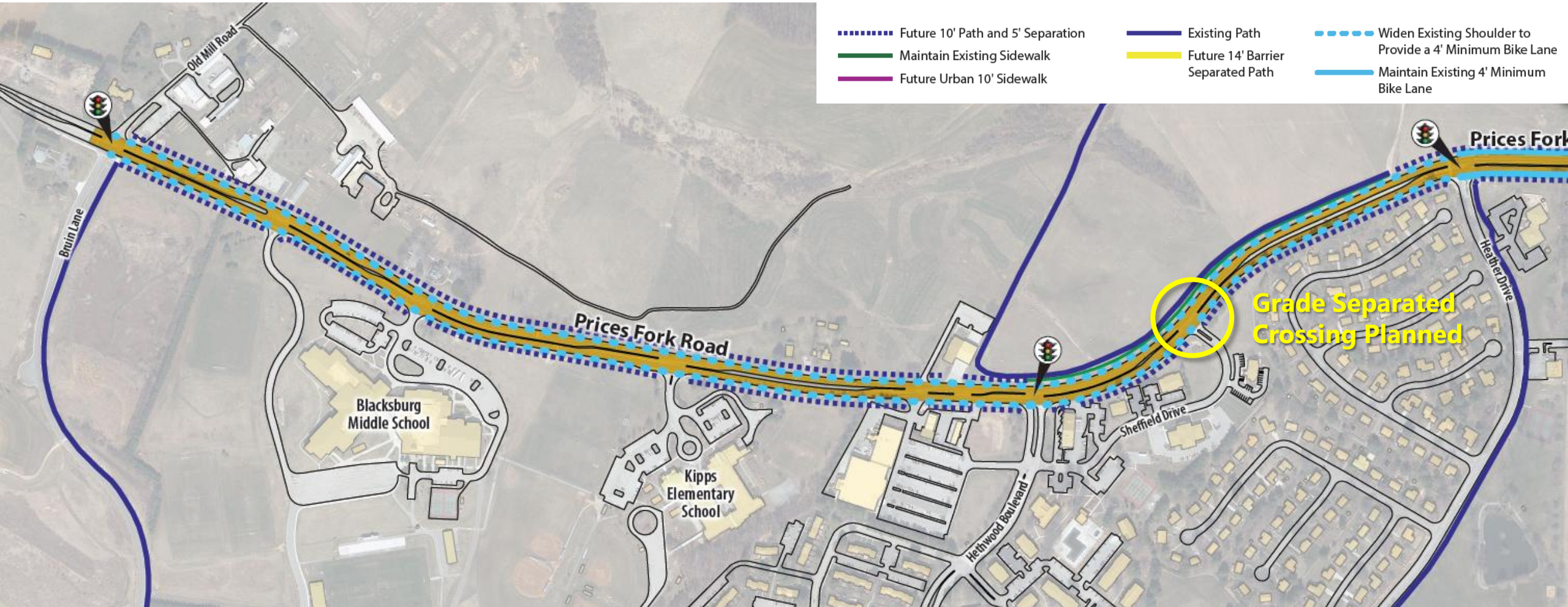


Bicycle and Pedestrian Recommendations (west)



- Provides continuous, consistent path network
- Provides connections to existing side street paths
- Increases recreational use
- Provides separation between sidewalks and travel lanes (comfort/safety)
- Provides space for aesthetic roadside treatments
- Approximately 15 ft of add'l right-of-way required

Bicycle and Pedestrian Recommendations (west)



- Replaces current sidewalk with a 10' path offset from road
- Provide a full bike lane along both sides
- Link path network to recreational and schools

Bicycle and Pedestrian Recommendation Considerations (US 460)

- Presence of free-flowing ramps and loops introduces high speed vehicle movements
- Desire for a protected crossings of ramps
- Seek opportunities to protect bicycle and pedestrian movement
- Allow for a protected crossing across Prices Fork Road



Bicycle and Pedestrian Recommendations (US 460)

- 14' barrier separated path
- Eliminates both free-flowing on-ramps onto Prices Fork Road providing contextual change for drivers
- Signalizes both ramp intersections, with painted crosswalks and pedestrian phases



Future 10' Path and 5' Separation

Maintain Existing Sidewalk

Future Urban 10' Sidewalk

Existing Path

Future 14' Barrier Separated Path

Widen Existing Shoulder to Provide a 4' Minimum Bike Lane

Maintain Existing 4' Minimum Bike Lane

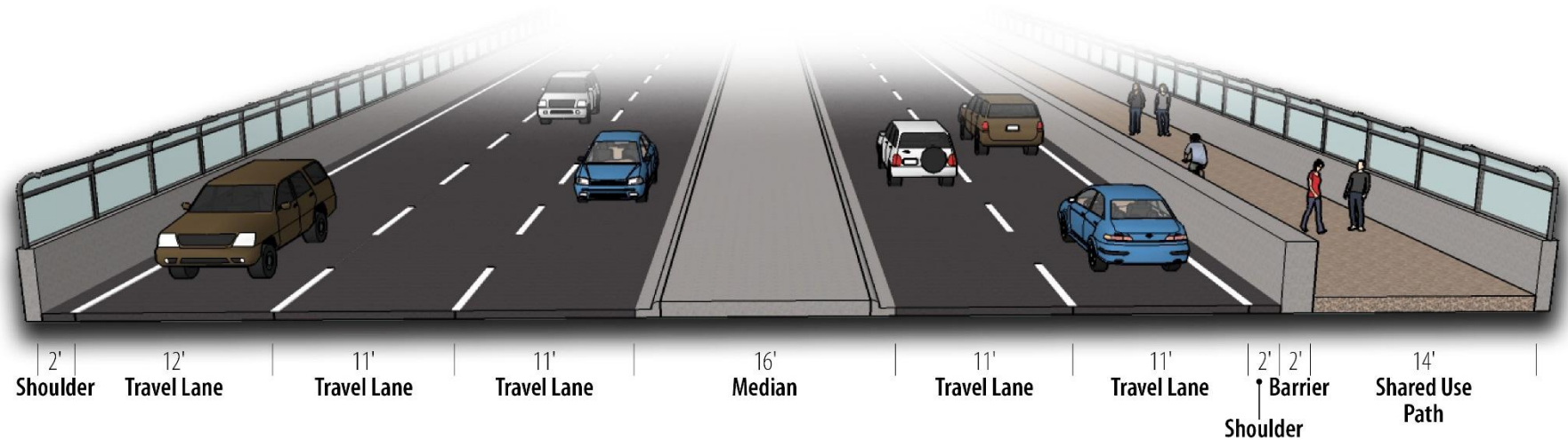
Existing Stop Control

Existing Signal

Proposed Signal

Bicycle and Pedestrian Recommendations (US 460)

- Provides a separate path for non-motorists to safely cross bridge
- Does not widen bridge, but reallocates existing width
- Transition areas for cyclists to shift over to path
- Experienced cyclists may continue to ride on street and would benefit from having the two free flowing on-ramps eliminated

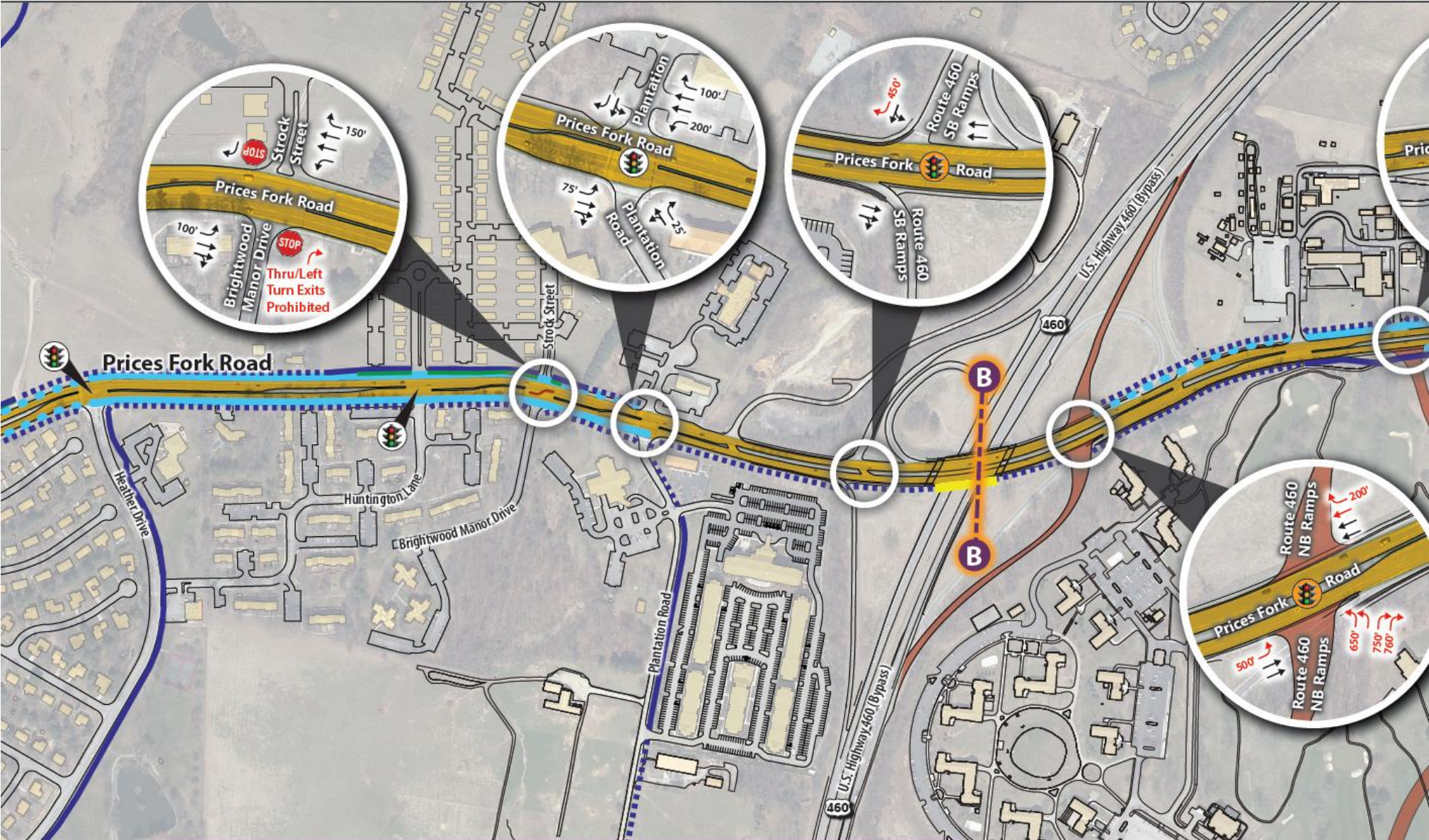




(Photo Sim – Pine Chapel Road, Hampton, VA)

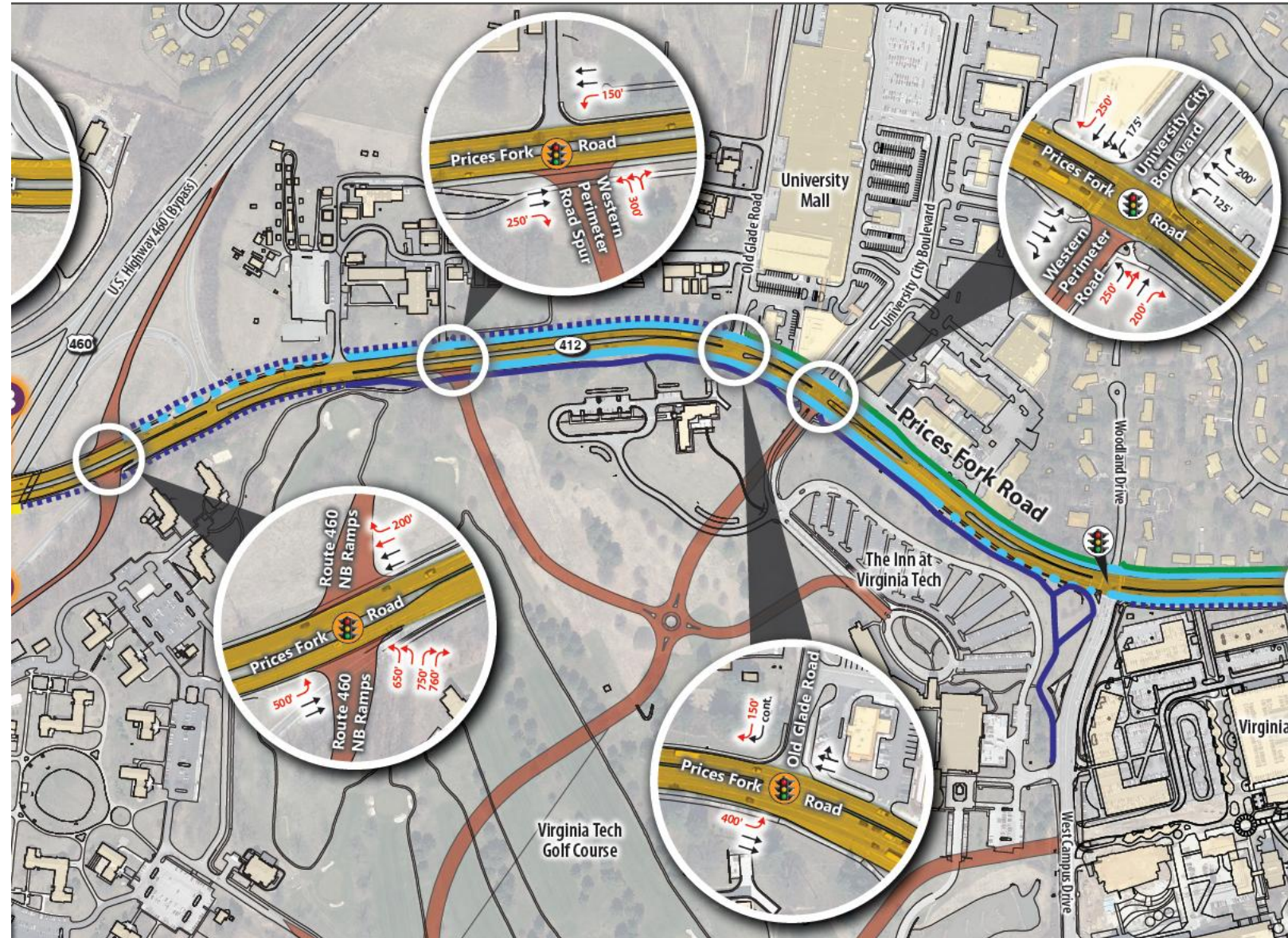


Traffic Recommendations (US 460 area)



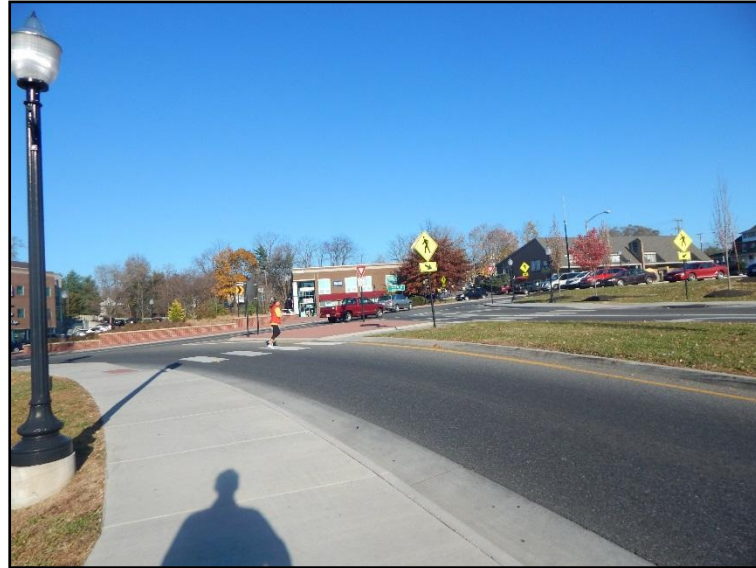
Traffic Recommendations (Western Perimeter Rd)

- Introduction of the Western Perimeter Road into UCB intersection results in LOS F conditions
- NB lefts need to be shifted to a signalized spur road to improve UCB operations
- Partial signal may need to be added to Old Glade Road in long term to assist with left-turn movement
- Relocate Old Glade Road to the west to improve signal spacing – possibly incorporate into future spur signal



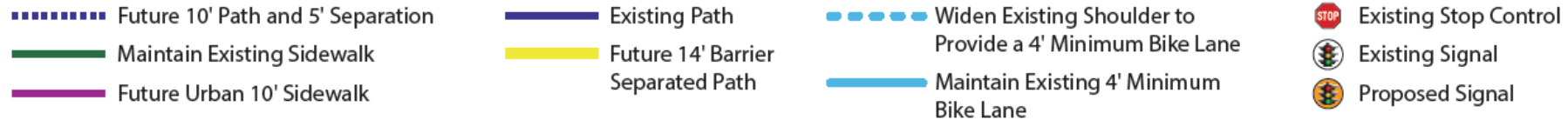
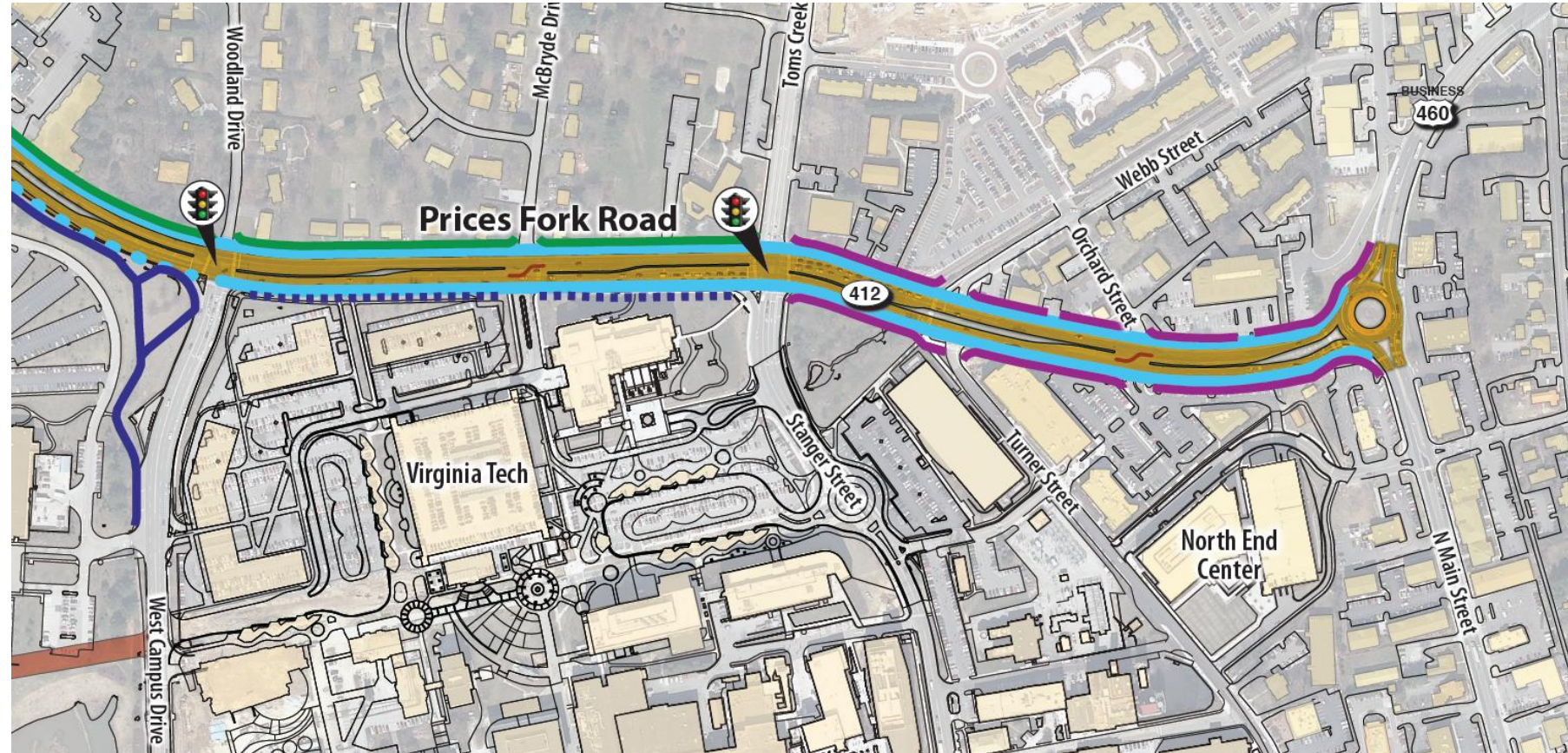
Bicycle and Pedestrian Recommendation Considerations (east)

- Approaching lower speed downtown environment
- Highest pedestrian crossing volumes
- High bicycling use along and crossing Prices Fork Road
- Desire to have both on street and off street bicycle facilities



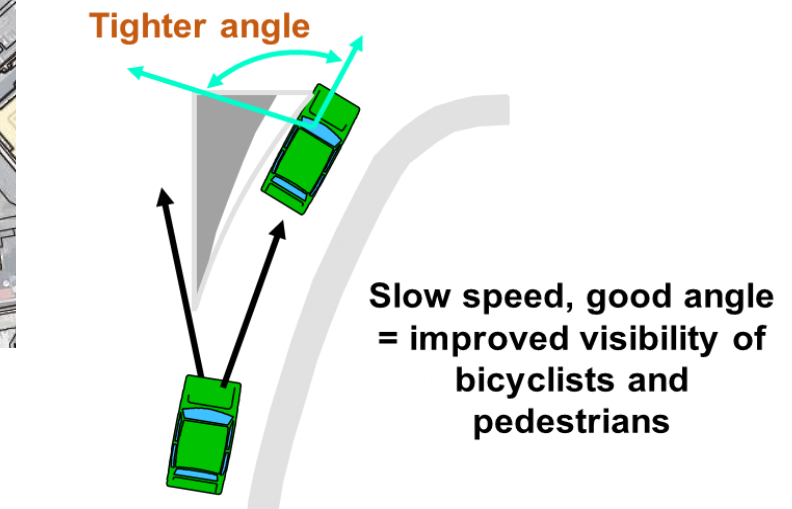
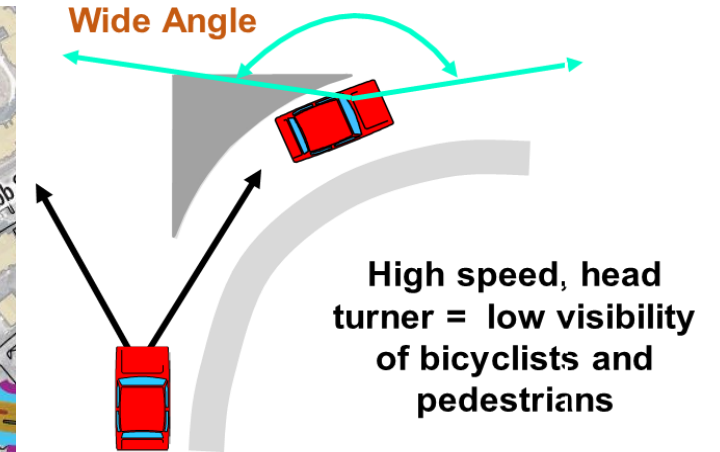
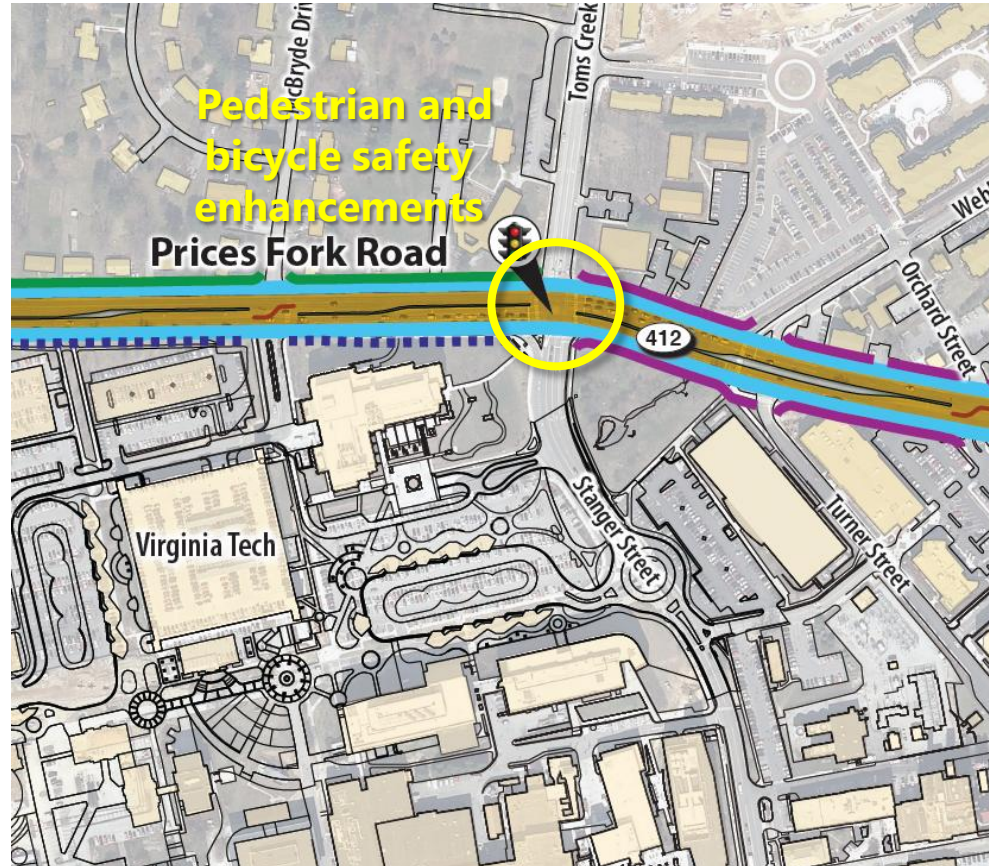
Bicycle and Pedestrian Accommodations (east)

- 10' urban sidewalk east of Stanger Street
- Gateway in downtown context
- Match downtown streetscape treatment (lights, trees, benches, brick lined edges, etc.)
- Long-term redevelopment of Orchard/Webb area with mixed use, ground level retail facing street

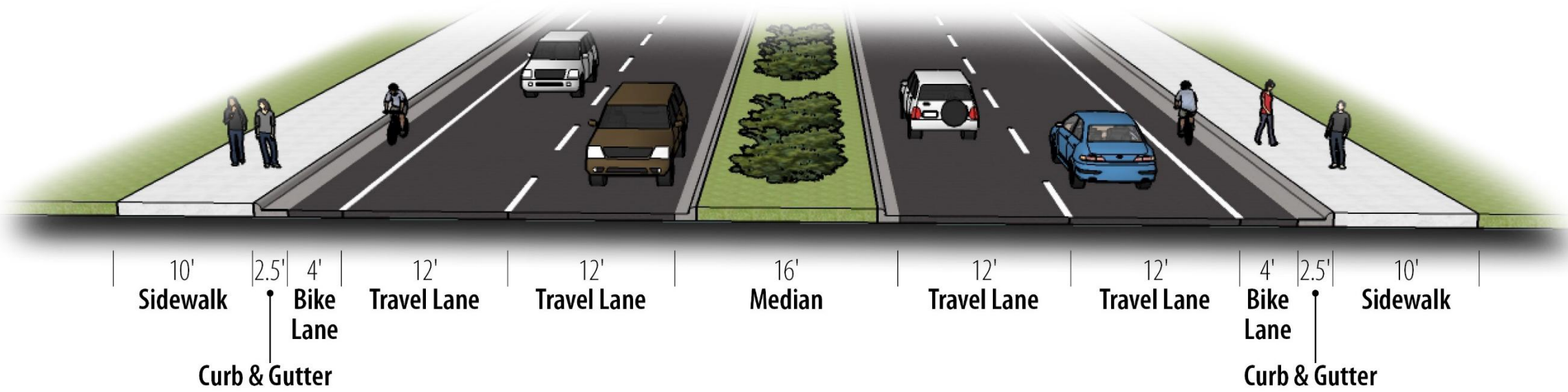


Bicycle and Pedestrian Accommodations (Toms Creek Road/Stanger Street Intersection)

- Eliminate free-flowing eastbound right-turn "hot right"
- Add pedestrian countdown signal heads
- Restrict right-turns on red
- Refurbished pedestrian crossings
- Enhanced signs



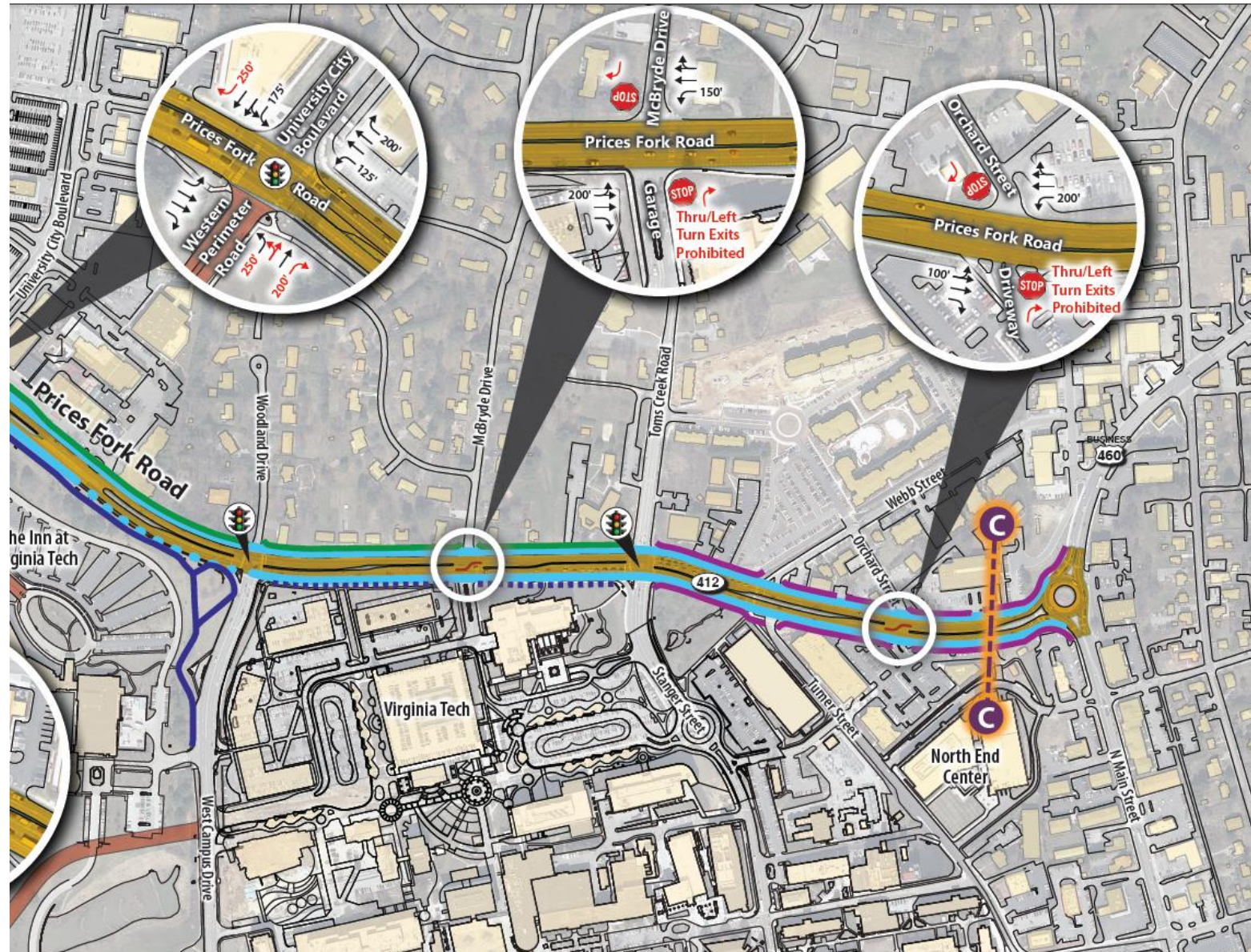
Bicycle and Pedestrian Accommodations (east)



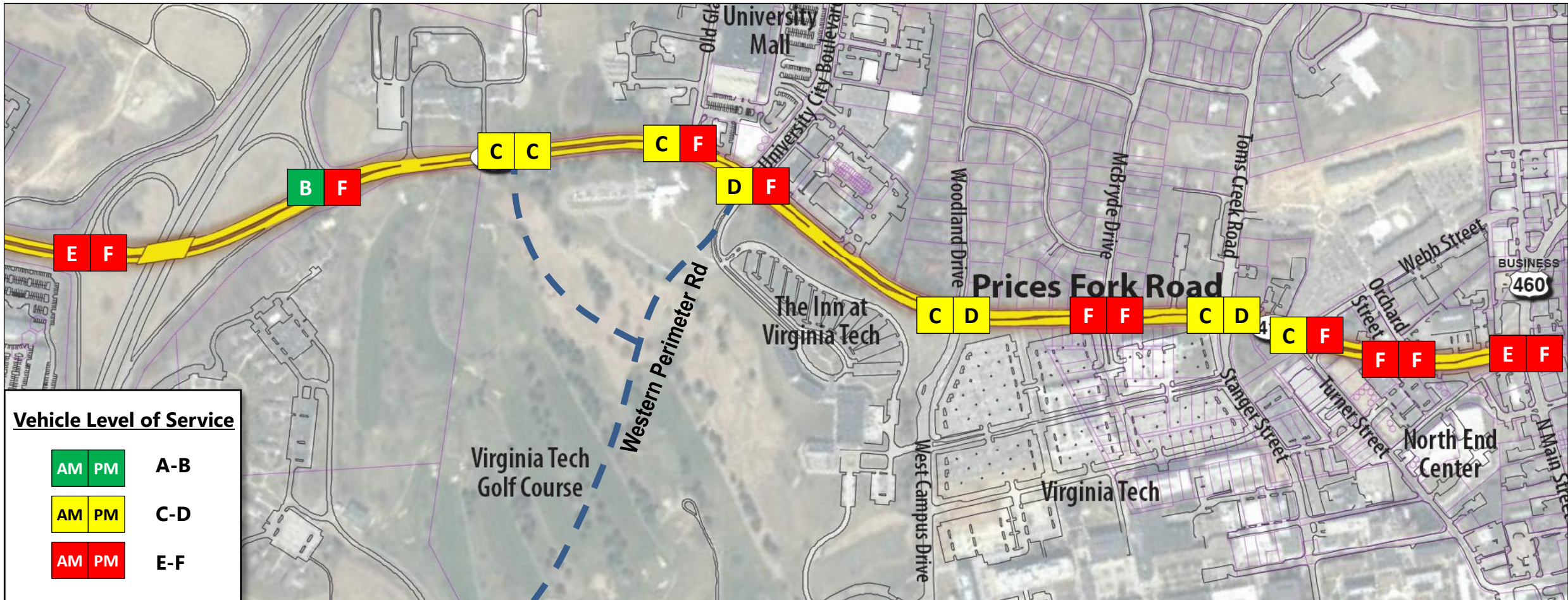
- Extending the 10' urban sidewalk and downtown streetscaping (Main Street and North End Center) onto eastern end of Prices Fork Road signals the downtown context for drivers
- Maintain median barrier to discourage mid-block crossings near Webb St/Turner St. Consider opportunities for grade separation in long-term

Traffic Recommendations (east)

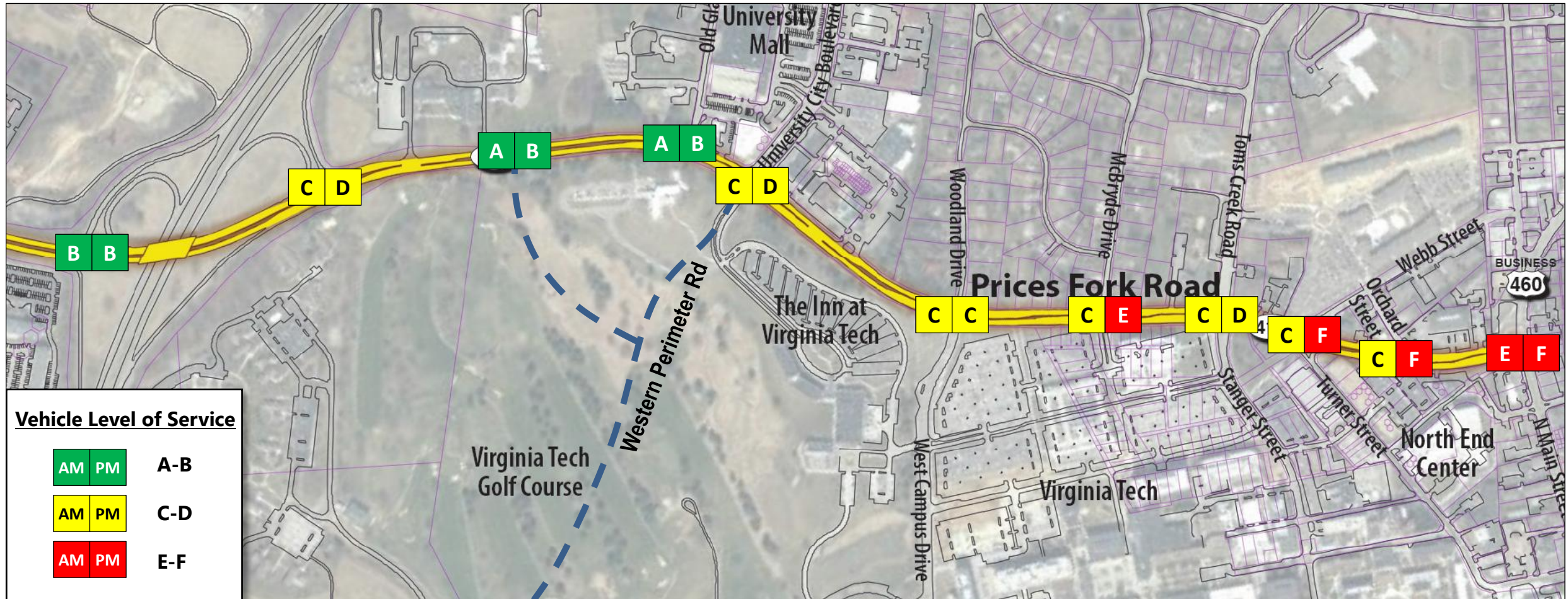
- West Campus Drive and Toms Creek Rd intersections benefit from Western Perimeter Road and parking removal on north end of campus
- Restrict McBryde and Orchard intersections to left-in, right-in, right-out access to improve safety and operations
- Main Street roundabout is projected to operate at poor levels of service.



Future (2040) No-Build Traffic Operations



Future (2040) Build Traffic Operations



Improved Regional Bicycle-Pedestrian Connections

- Glade Road provides a more bicycle-friendly alternative to crossing US 460. Provide path connections from Prices Fork Road
- Similarly, the Smithfield Road underpass provides a protected connection to Virginia Tech in a low traffic corridor



Transit Recommendations

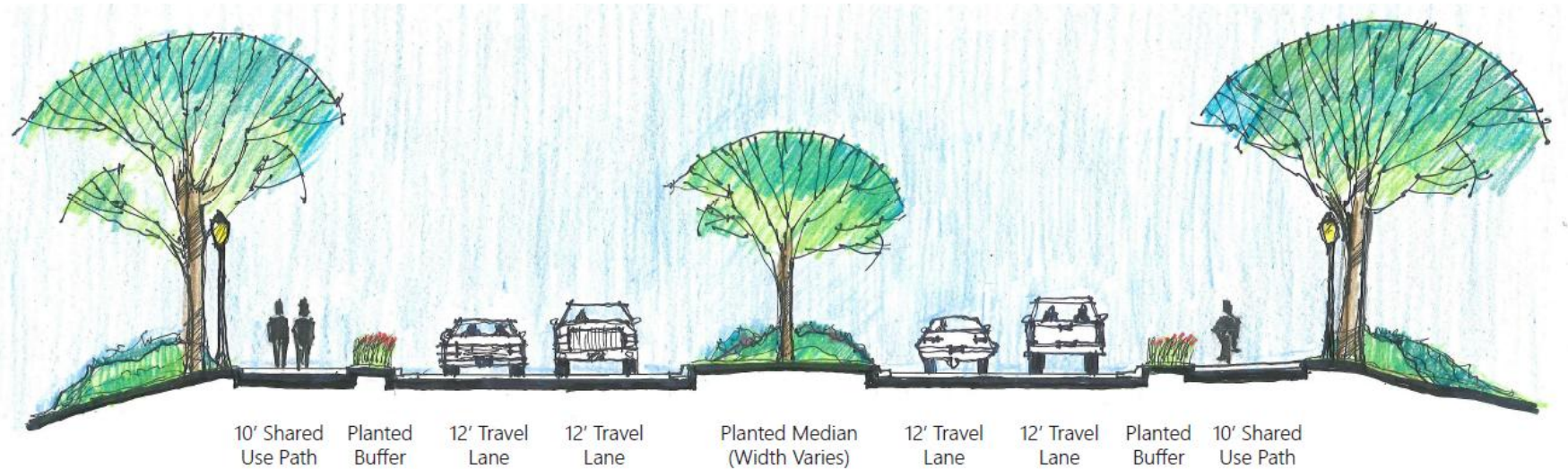
- Modify shared-use path so that bicycles can travel behind bus stop, improving safety during bus boarding/alighting



- Improve bus stop amenities along the corridor

Corridor Aesthetics

- Provide median planting suggestions as well as shorter landscaping with within buffer area
- Key gateway treatments:
 - At Town limits
 - East of US 460
 - Hethwood area



Shorter-Term Safety Recommendations (examples)



Modify Ped Signs
(Bruin Lane)



Install compliant
MUTCD Stop sign



Faded, non-compliant
pavement markings



Trim Vegetation



Improve sight
distance (Bruin Ln)



Improve sight distance
(Hethwood)



Improve sight
distance (Kipps)



Trim vegetation to
improve sign visibility

- *Note that as design standards and preferences change over time, existing inventories need updating over time*

Town of Blacksburg

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