

Route 301/207 Arterial Preservation Plan

January 16, 2018 – Caroline County and Town of Bowling Green

January 17, 2018 – Town of Port Royal

Agenda

1. Introductions
2. Purpose of Study
3. Innovative Intersections
4. Preliminary recommendations

Purpose of Study

VDOT Statewide Program Perspective

To preserve and enhance the capacity and safety of the Commonwealth's Arterial Preservation Network, while accommodating economic development and avoiding wide-scale road widenings

- Result in a safer arterial highway system
- Preserve and enhance corridor capacity and efficiency
- Maintain Commonwealth's mobility & thus economic competitiveness
- Lower long-term infrastructure capital and maintenance costs

Purpose of Study

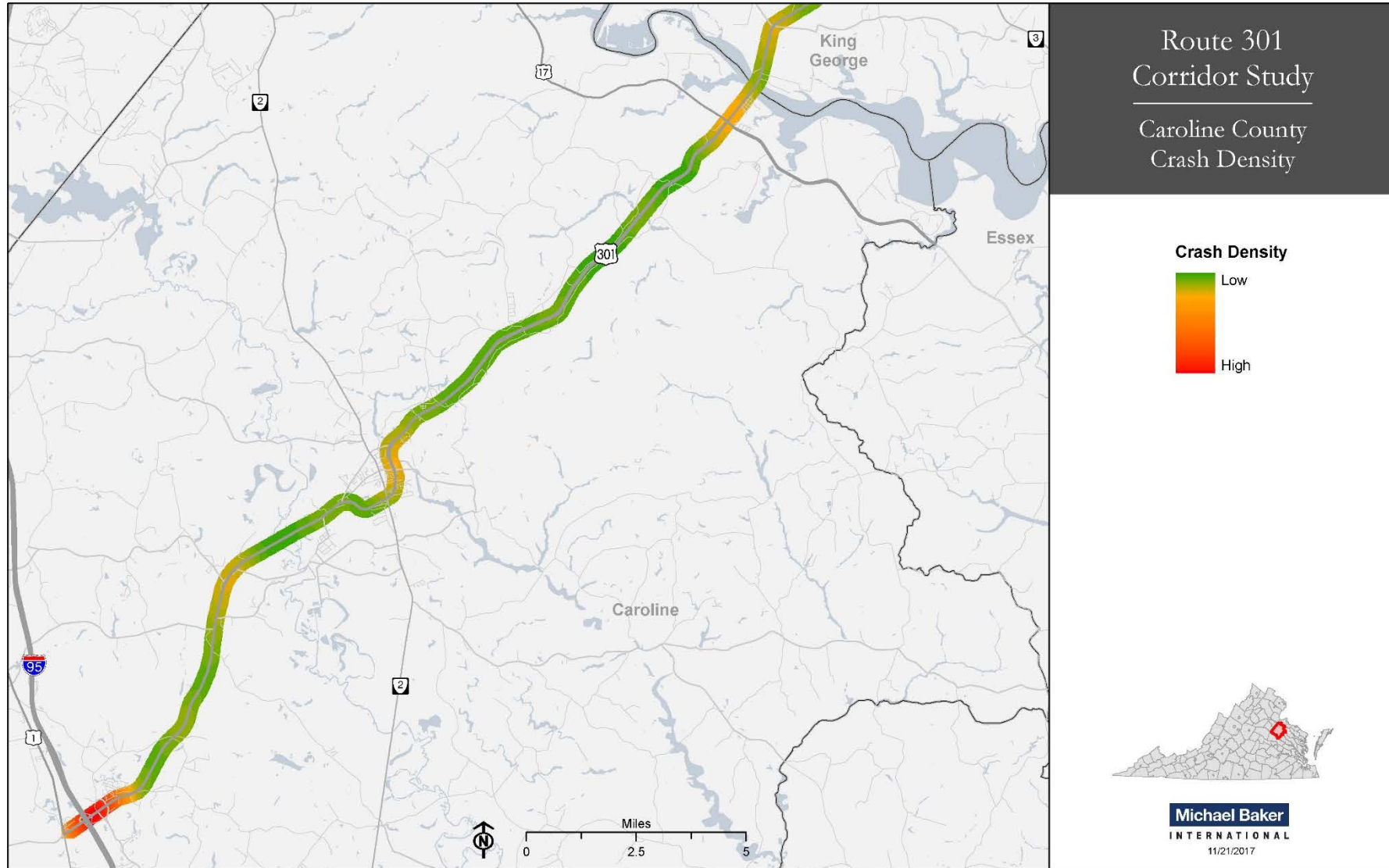
VDOT Statewide Program Perspective

State Traffic Engineer approval and District Engineer/Administrator concurrence is required for Signal Justification Reports (SJR) justifying new traffic signals on the Arterial Preservation Network.

Source: IIM-TE-387.0, July 2017

Existing Corridor Conditions

Crash Analysis Results



Existing Corridor Conditions

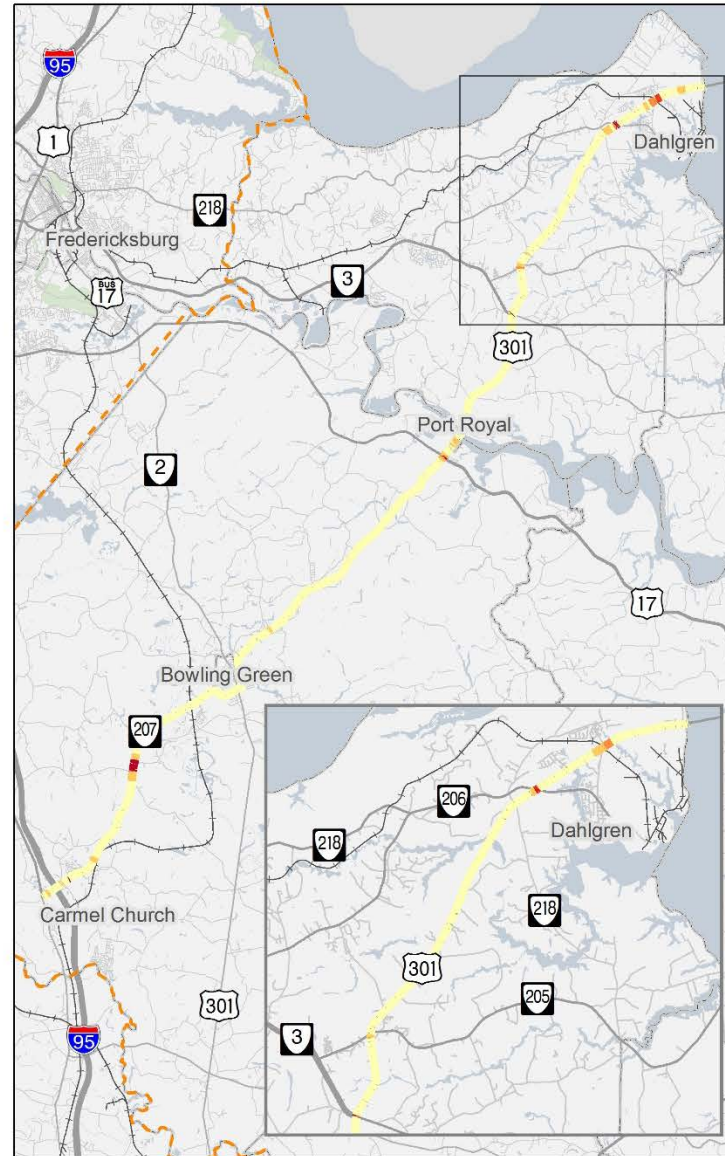
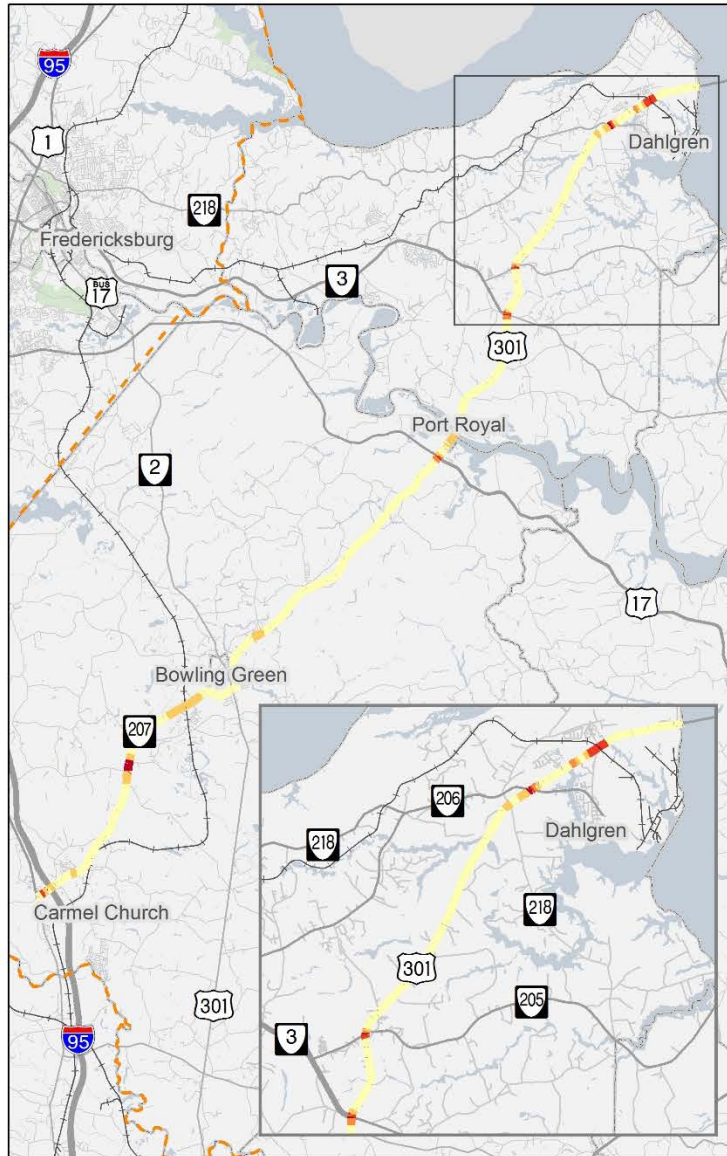
AM Travel Time Results

Northbound

Southbound

Route 301/207

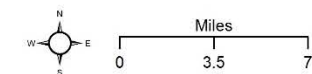
Peak AM Travel Time Ratio



Peak AM TTR

- 1.00 - 1.05
- 1.06 - 1.10
- 1.11 - 1.15
- 1.16 - 1.20
- 1.21 - 1.58

- MPO Boundary
- Jurisdictions



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6/21/2017

Existing Corridor Conditions

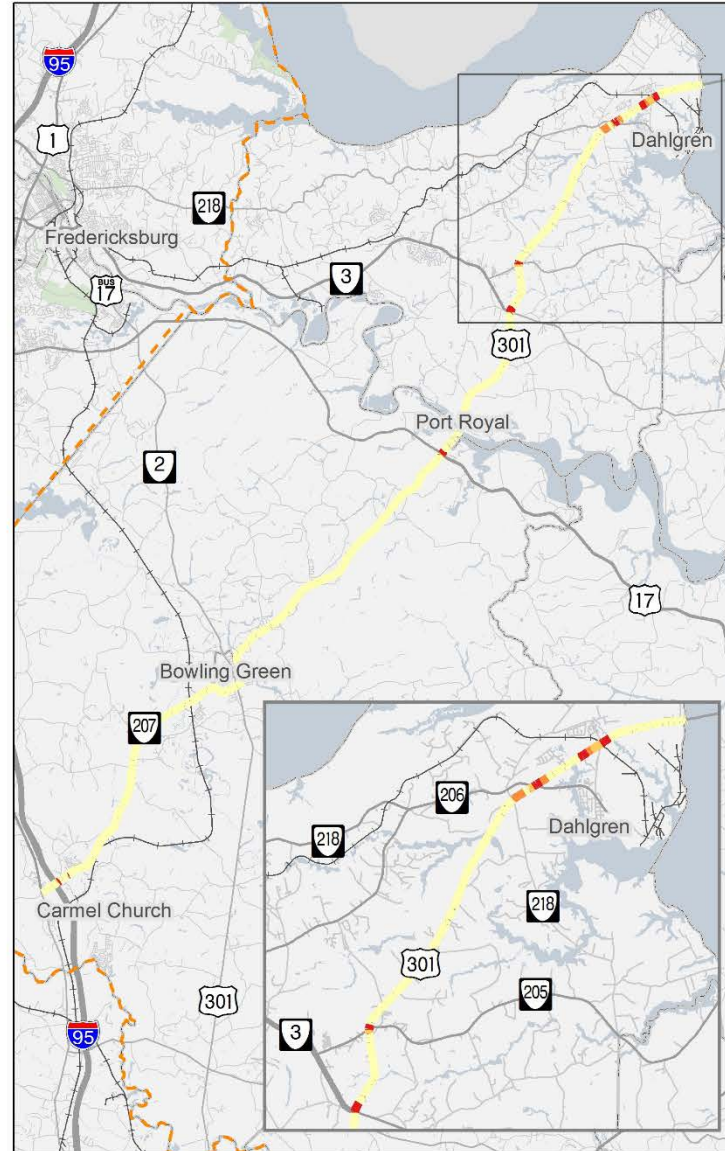
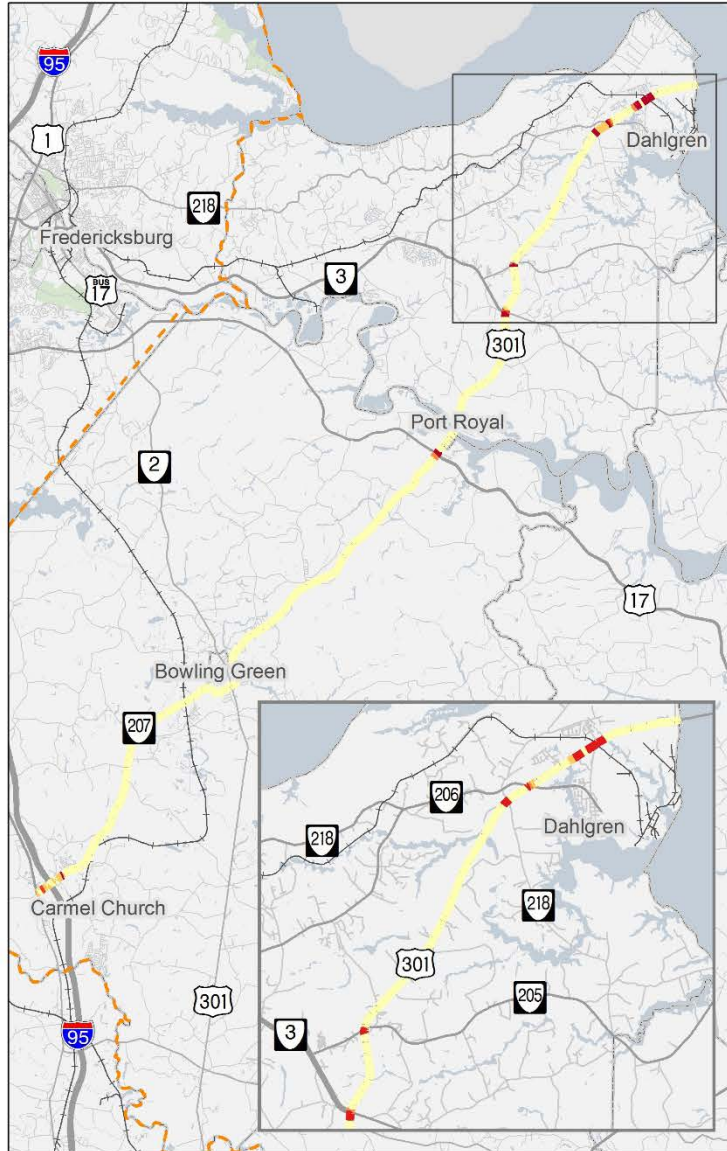
PM Travel Time Results

Northbound

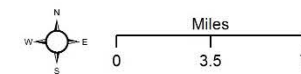
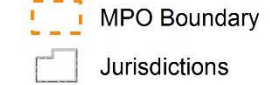
Southbound

Route 301/207

Peak PM Travel Time Ratio

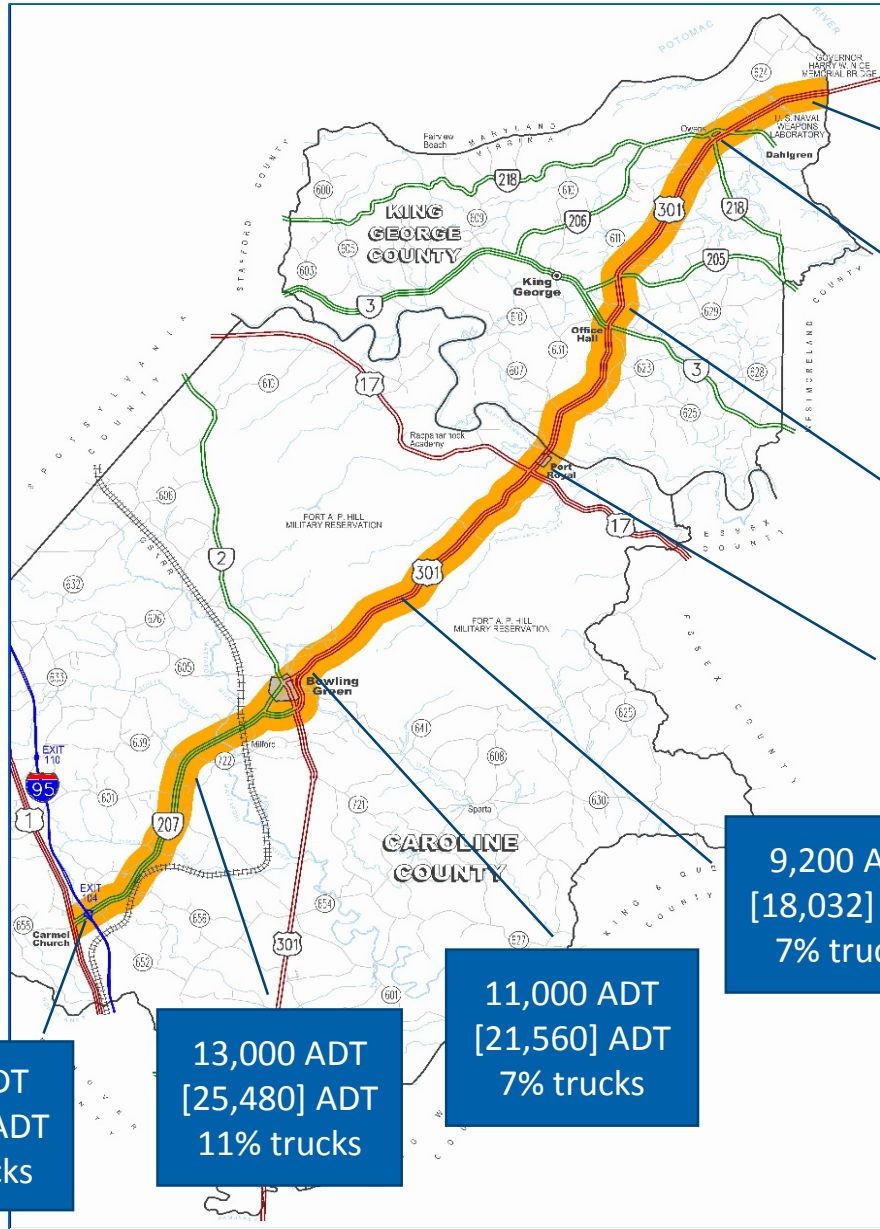


Peak PM TTR



Traffic Volume Highlights

2016 – X,XXX ADT
 2040 – [X,XXX] ADT
 X% Trucks



26,000 ADT
 [50,960] ADT
 6% trucks

21,000 ADT
 [41,160] ADT
 6% trucks

14,000 ADT
 [27,440] ADT
 6% trucks

14,000 ADT
 [24,440] ADT
 11% trucks

9,200 ADT
 [18,032] ADT
 7% trucks

11,000 ADT
 [21,560] ADT
 7% trucks

13,000 ADT
 [25,480] ADT
 11% trucks

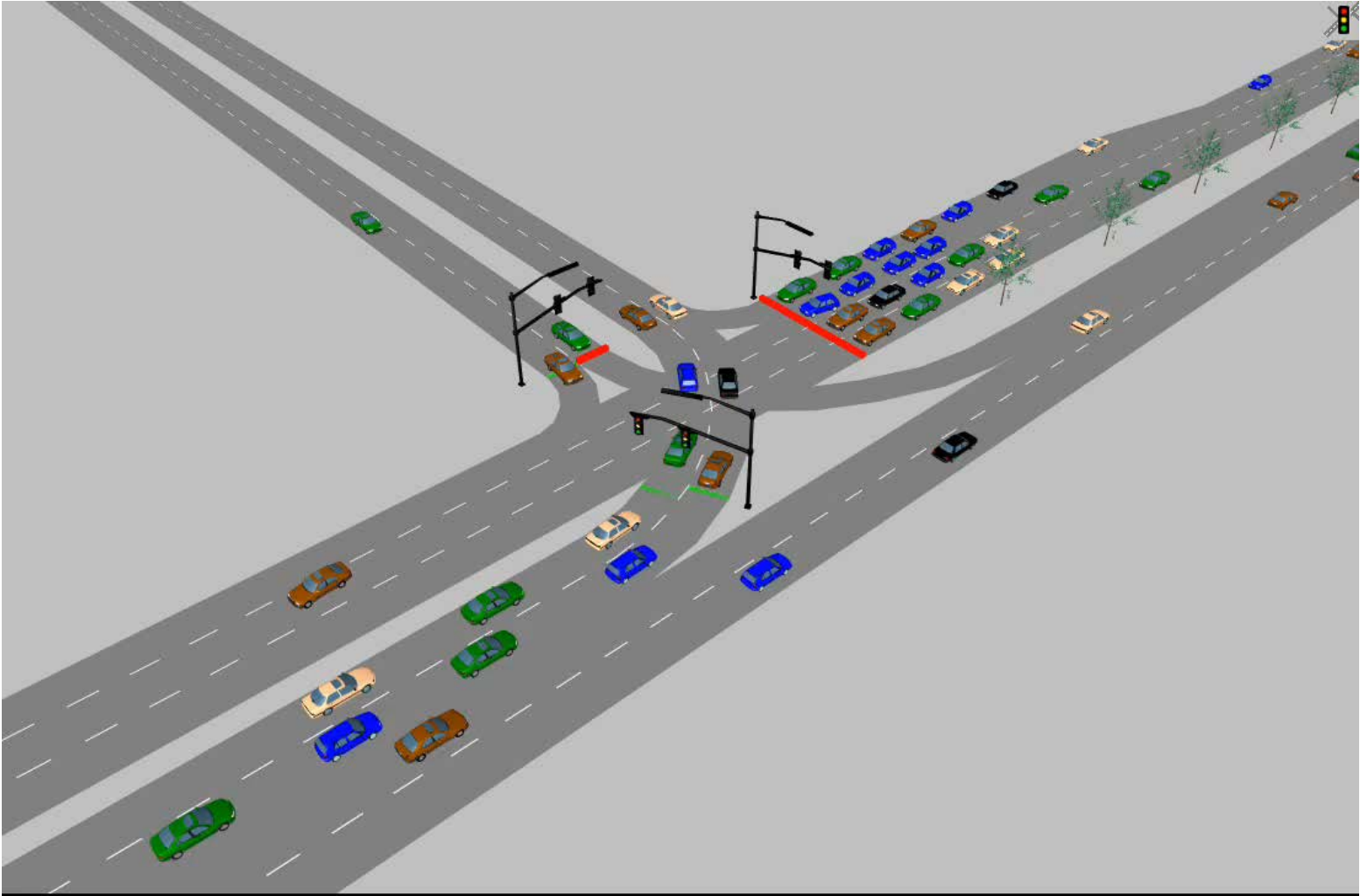
8,000 ADT
 [15,680] ADT
 11% trucks

Innovative Intersections

Continuous Green-T (CGT)



Continuous Green-T (CGT)



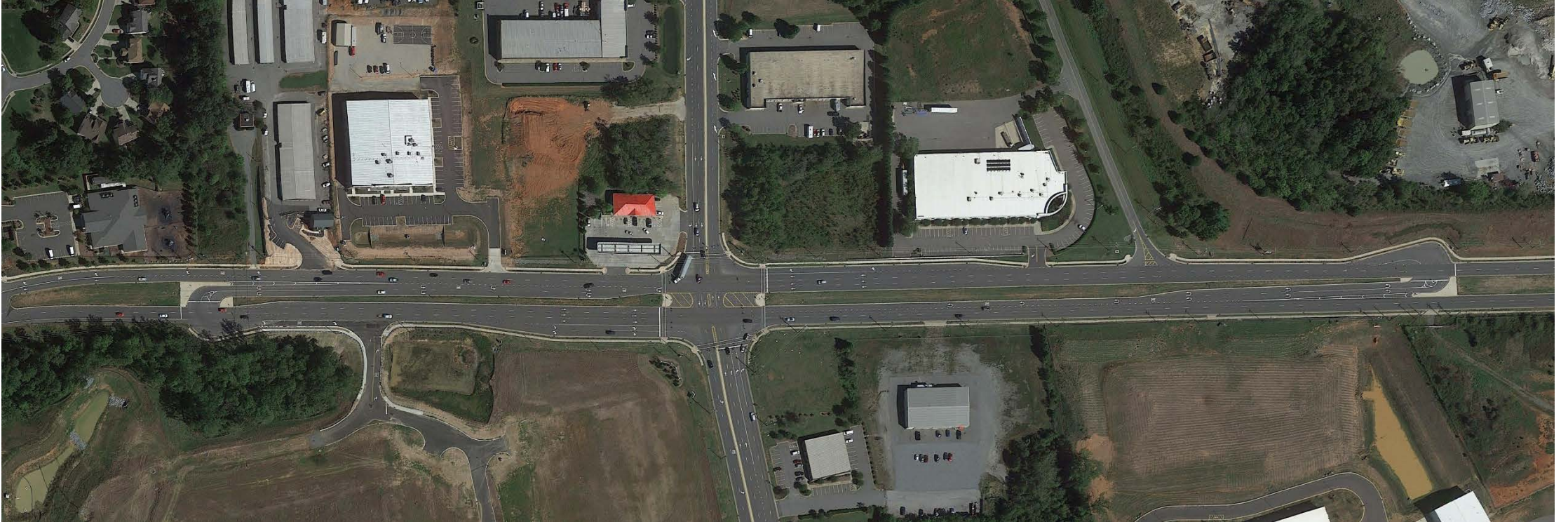
Restricted Crossing U-Turn (RCUT)



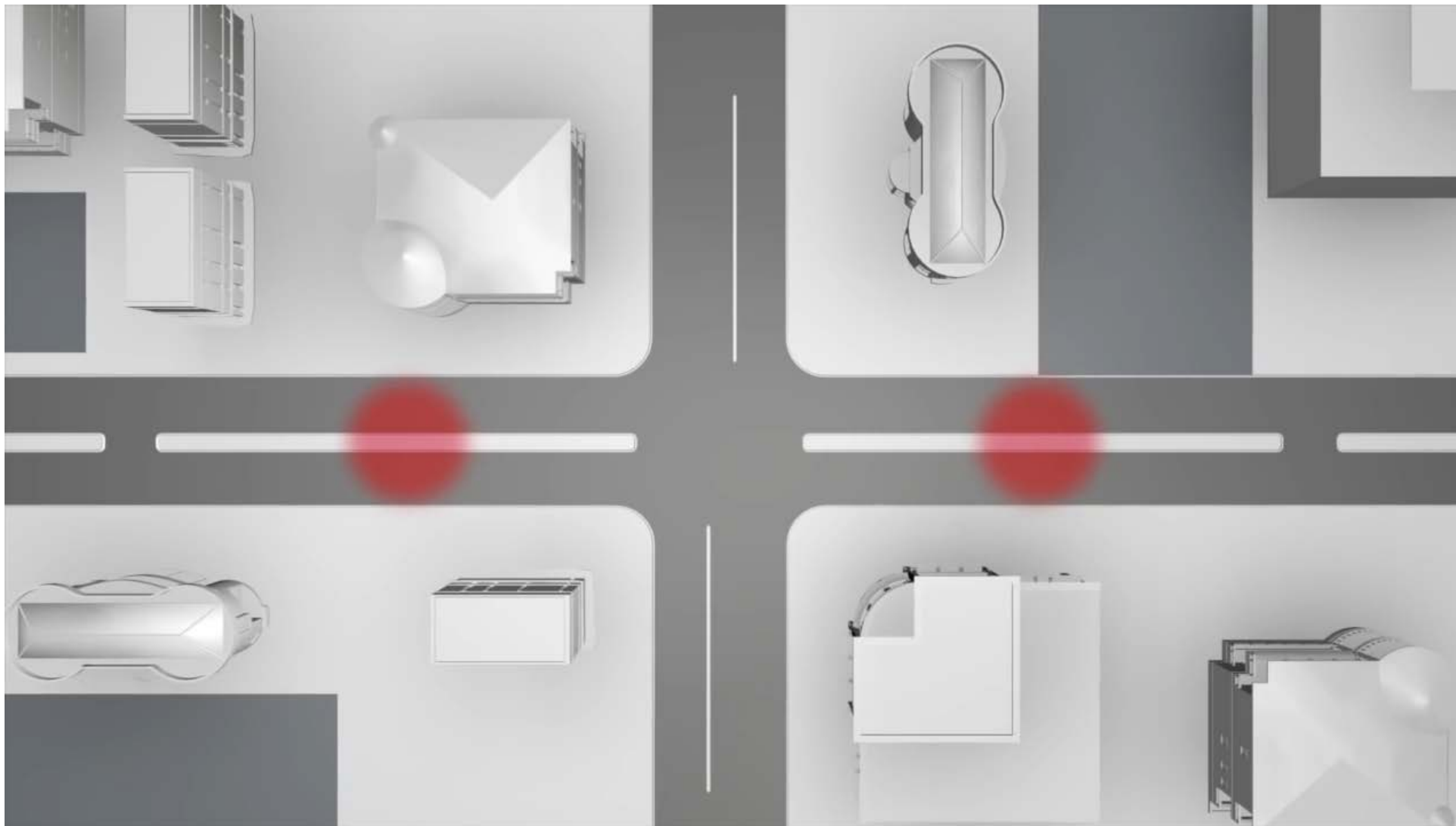
Restricted Crossing U-Turn (RCUT)



Median U-Turn (MUT)



Median U-Turn (MUT)



Preliminary Recommendations



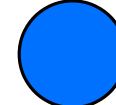





US 301/RTE 207 ARTERIAL PRESERVATION PLAN

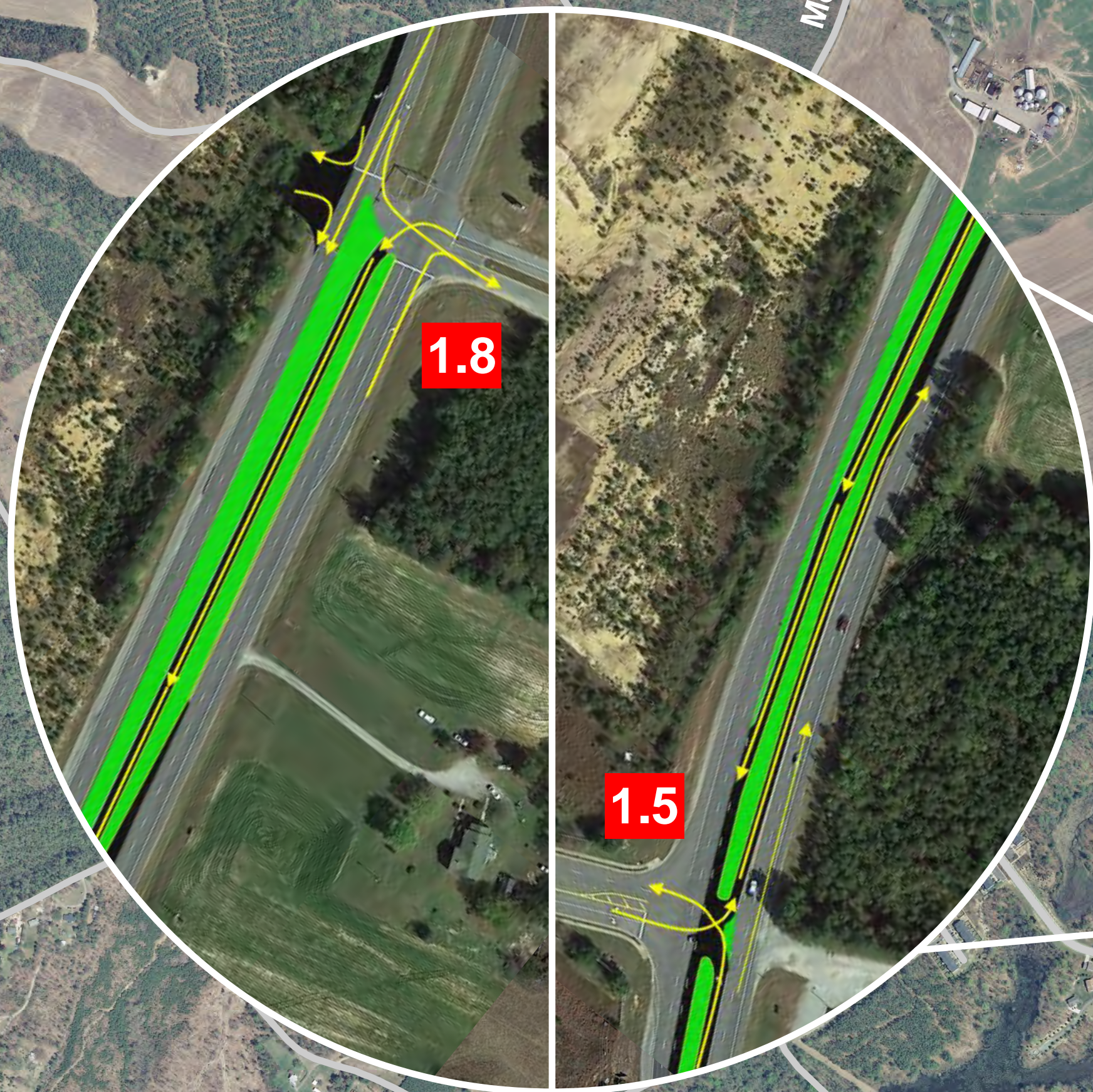
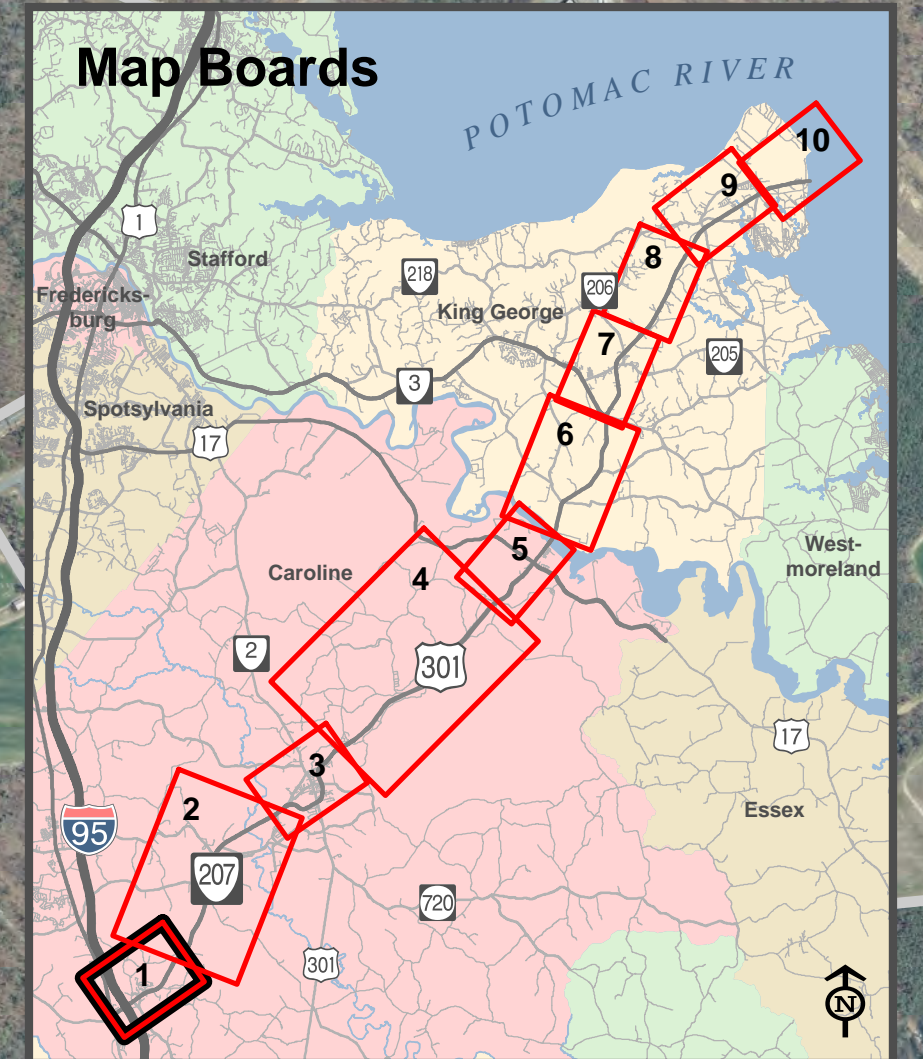
PRELIMINARY RECOMMENDATIONS

BOARD 1/5



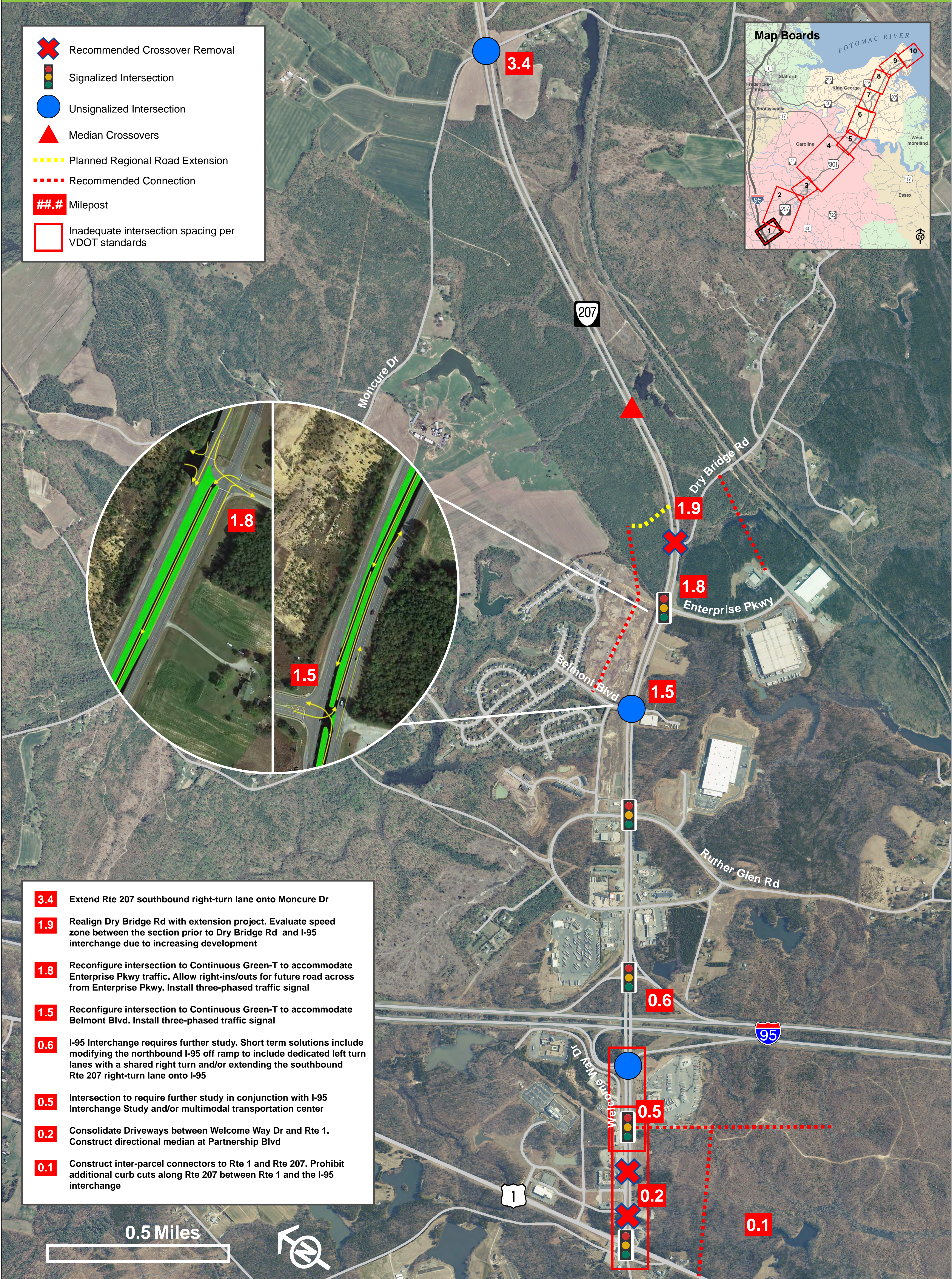
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-  Recommended Crossover Removal
-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Planned Regional Road Extension
-  Recommended Connection
-  Milepost
-  Inadequate intersection spacing per VDOT standards



- 3.4** Extend Rte 207 southbound right-turn lane onto Moncure Dr
- 1.9** Realign Dry Bridge Rd with extension project. Evaluate speed zone between the section prior to Dry Bridge Rd and I-95 interchange due to increasing development
- 1.8** Reconfigure intersection to Continuous Green-T to accommodate Enterprise Pkwy traffic. Allow right-ins/outs for future road across from Enterprise Pkwy. Install three-phased traffic signal
- 1.5** Reconfigure intersection to Continuous Green-T to accommodate Belmont Blvd. Install three-phased traffic signal
- 0.6** I-95 Interchange requires further study. Short term solutions include modifying the northbound I-95 off ramp to include dedicated left turn lanes with a shared right turn and/or extending the southbound Rte 207 right-turn lane onto I-95
- 0.5** Intersection to require further study in conjunction with I-95 Interchange Study and/or multimodal transportation center
- 0.2** Consolidate Driveways between Welcome Way Dr and Rte 1. Construct directional median at Partnership Blvd
- 0.1** Construct inter-parcel connectors to Rte 1 and Rte 207. Prohibit additional curb cuts along Rte 207 between Rte 1 and the I-95 interchange

0.5 Miles



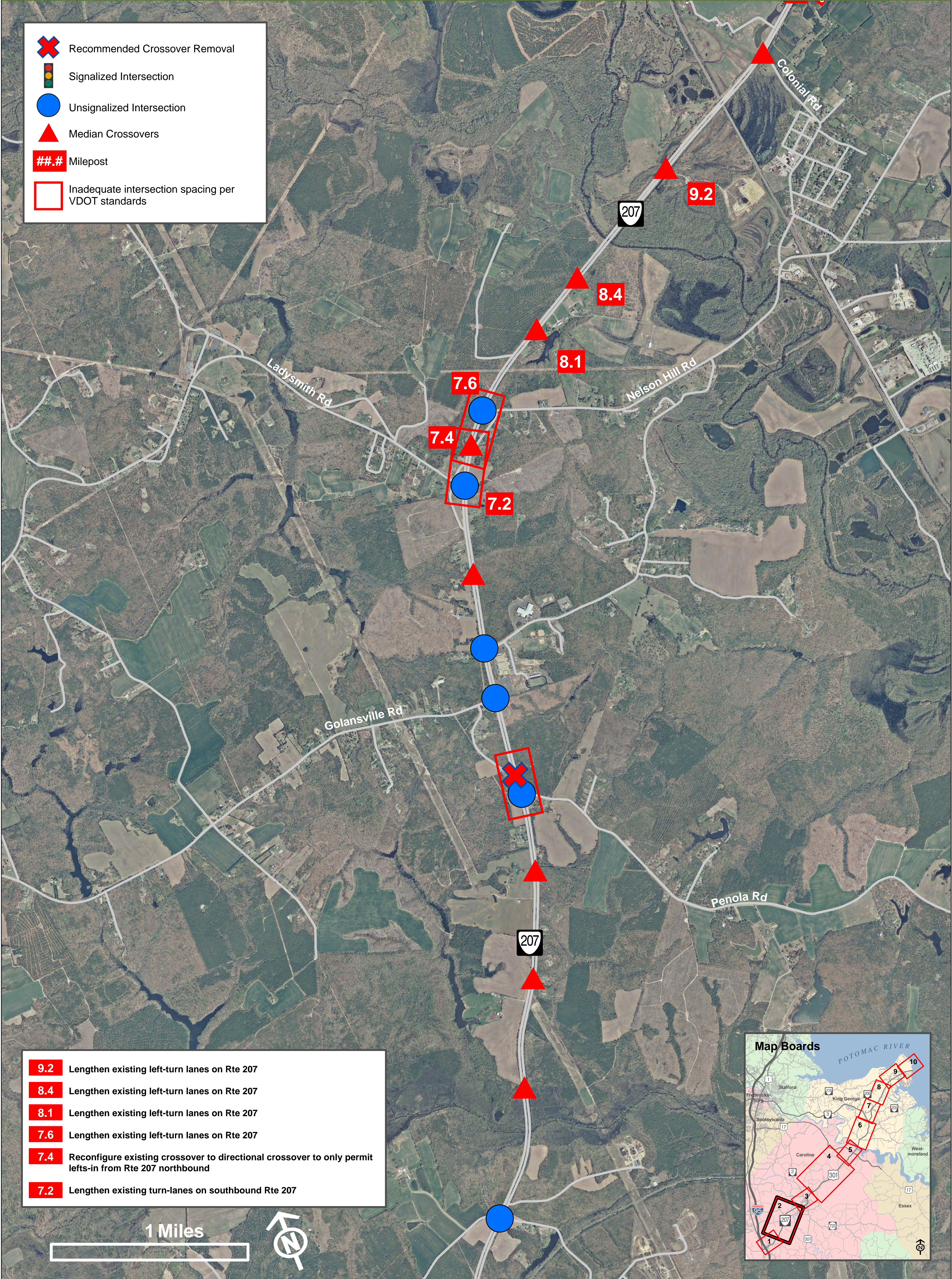
US 301/RTE 207 ARTERIAL PRESERVATION PLAN

PRELIMINARY RECOMMENDATIONS

BOARD 2/5

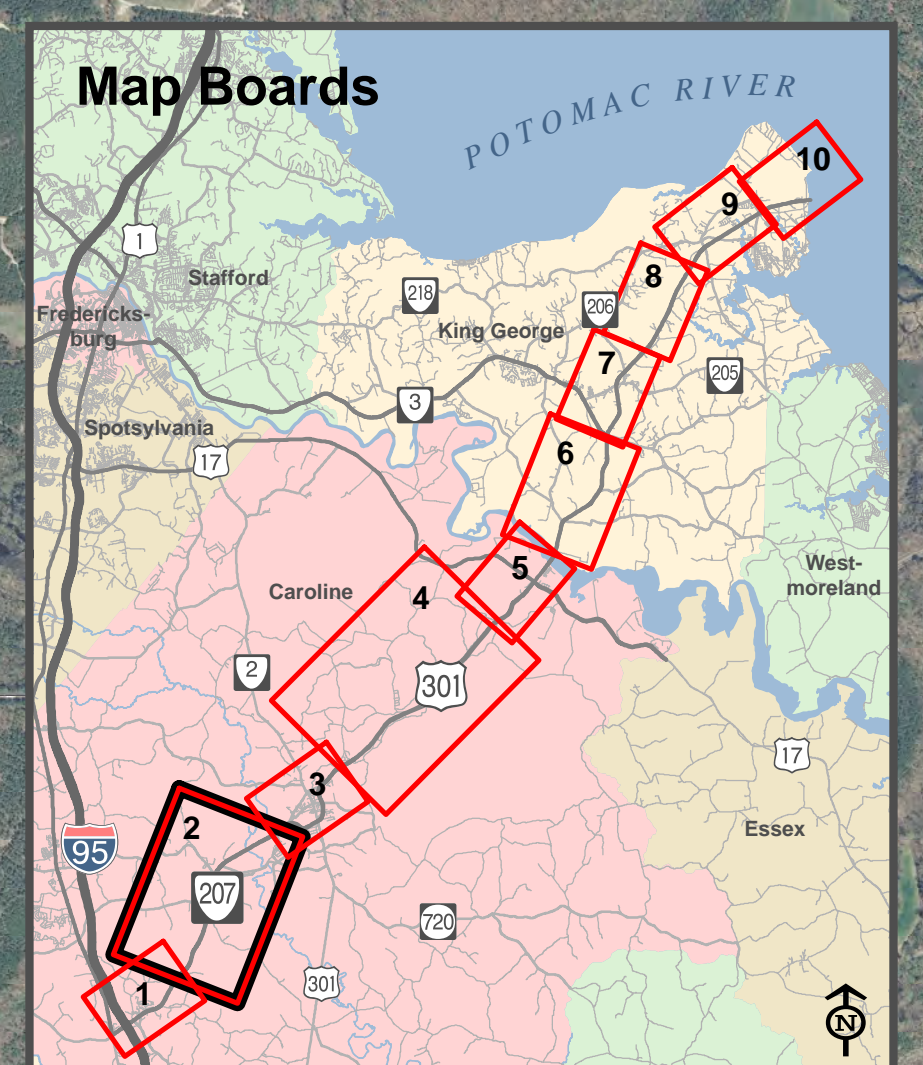


- Recommended Crossover Removal
- Signalized Intersection
- Unsignalized Intersection
- Median Crossovers
- Milepost
- Inadequate intersection spacing per VDOT standards



- 9.2** Lengthen existing left-turn lanes on Rte 207
- 8.4** Lengthen existing left-turn lanes on Rte 207
- 8.1** Lengthen existing left-turn lanes on Rte 207
- 7.6** Lengthen existing left-turn lanes on Rte 207
- 7.4** Reconfigure existing crossover to directional crossover to only permit lefts-in from Rte 207 northbound
- 7.2** Lengthen existing turn-lanes on southbound Rte 207

1 Miles




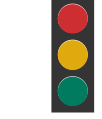




US 301/RTE 207 ARTERIAL PRESERVATION PLAN

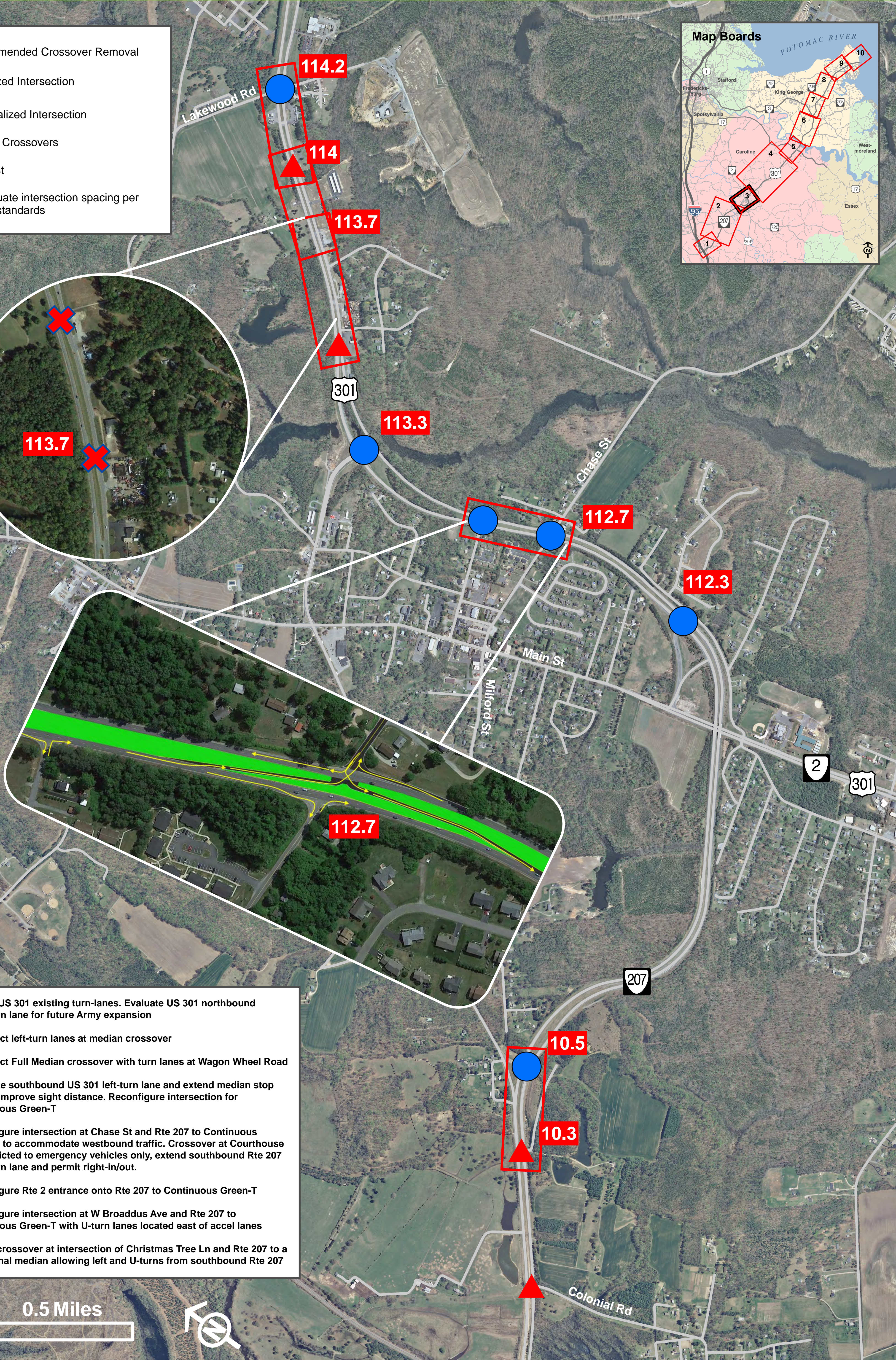
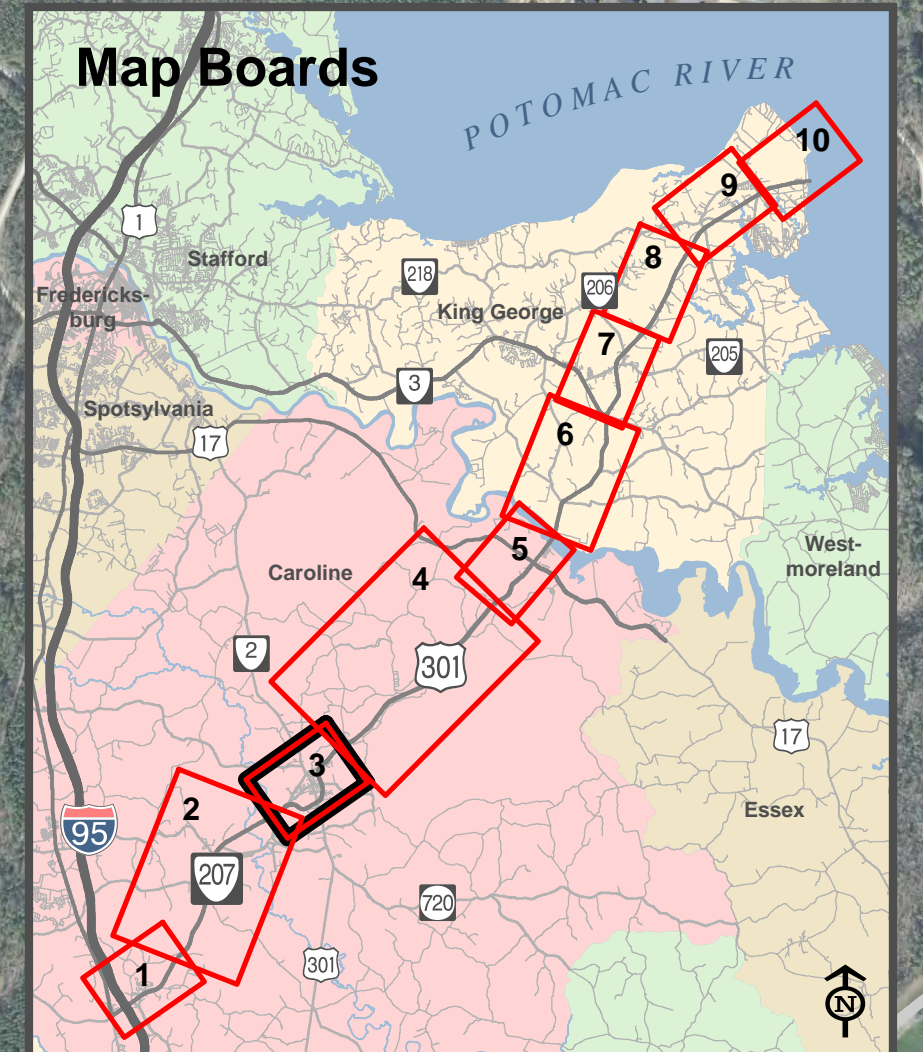
PRELIMINARY RECOMMENDATIONS

BOARD 3/5



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-  Recommended Crossover Removal
-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Milepost
-  Inadequate intersection spacing per VDOT standards



- 114.2** Extend US 301 existing turn-lanes. Evaluate US 301 northbound right-turn lane for future Army expansion
- 114.0** Construct left-turn lanes at median crossover
- 113.7** Construct Full Median crossover with turn lanes at Wagon Wheel Road
- 113.3** Eliminate southbound US 301 left-turn lane and extend median stop bars to improve sight distance. Reconfigure intersection for Continuous Green-T
- 112.7** Reconfigure intersection at Chase St and Rte 207 to Continuous Green-T to accommodate westbound traffic. Crossover at Courthouse Ln restricted to emergency vehicles only, extend southbound Rte 207 right-turn lane and permit right-in/out.
- 112.3** Reconfigure Rte 2 entrance onto Rte 207 to Continuous Green-T
- 10.5** Reconfigure intersection at W Broaddus Ave and Rte 207 to Continuous Green-T with U-turn lanes located east of accel lanes
- 10.3** Modify crossover at intersection of Christmas Tree Ln and Rte 207 to a directional median allowing left and U-turns from southbound Rte 207

0.5 Miles



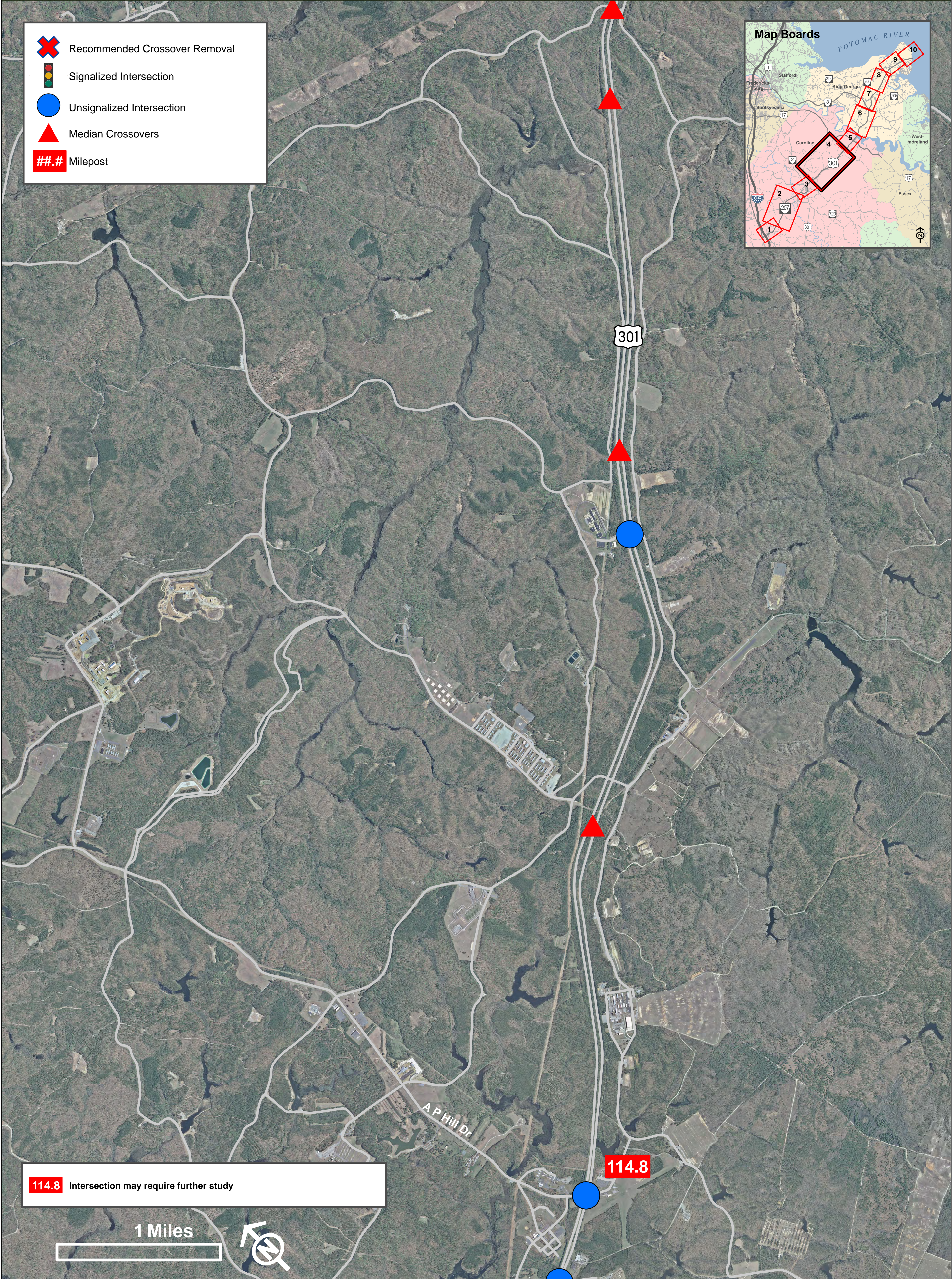
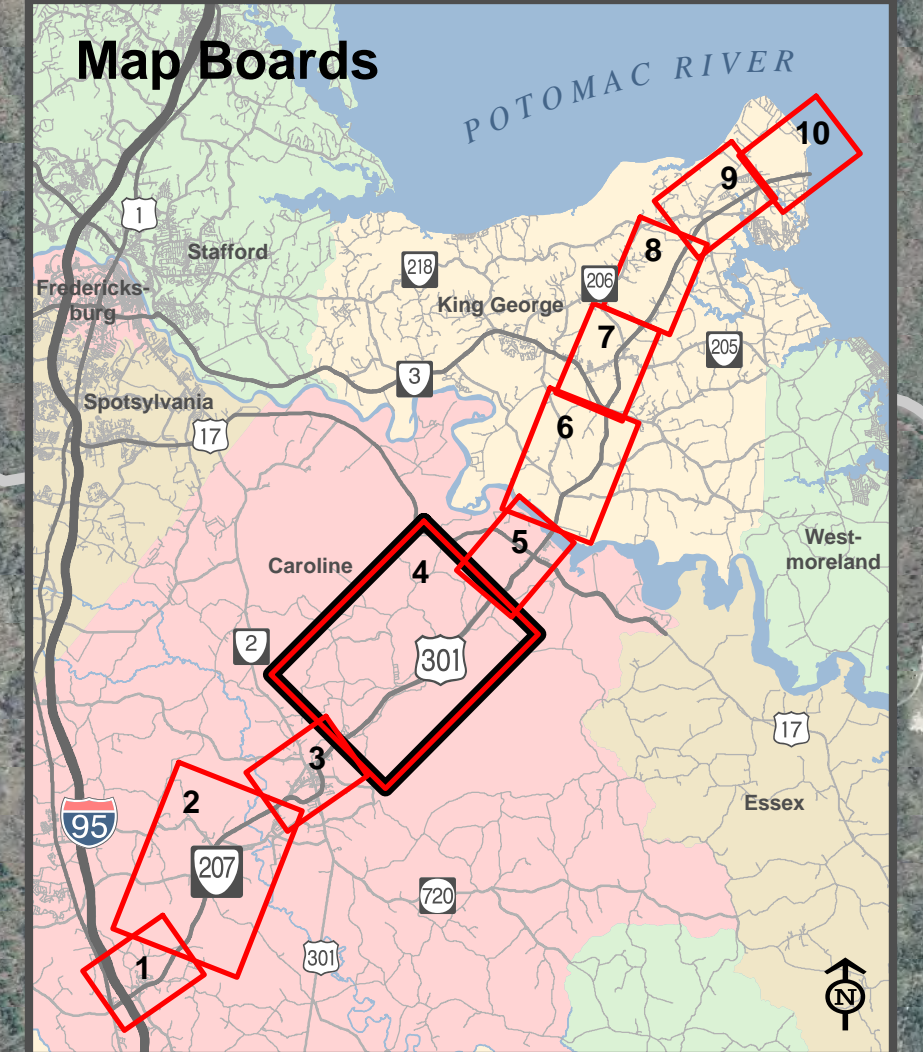
US 301/RTE 207 ARTERIAL PRESERVATION PLAN

PRELIMINARY RECOMMENDATIONS

BOARD 4/5



- Recommended Crossover Removal
- Signalized Intersection
- Unsignalized Intersection
- Median Crossovers
- Milepost



114.8 Intersection may require further study





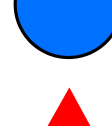



US 301/RTE 207 ARTERIAL PRESERVATION PLAN

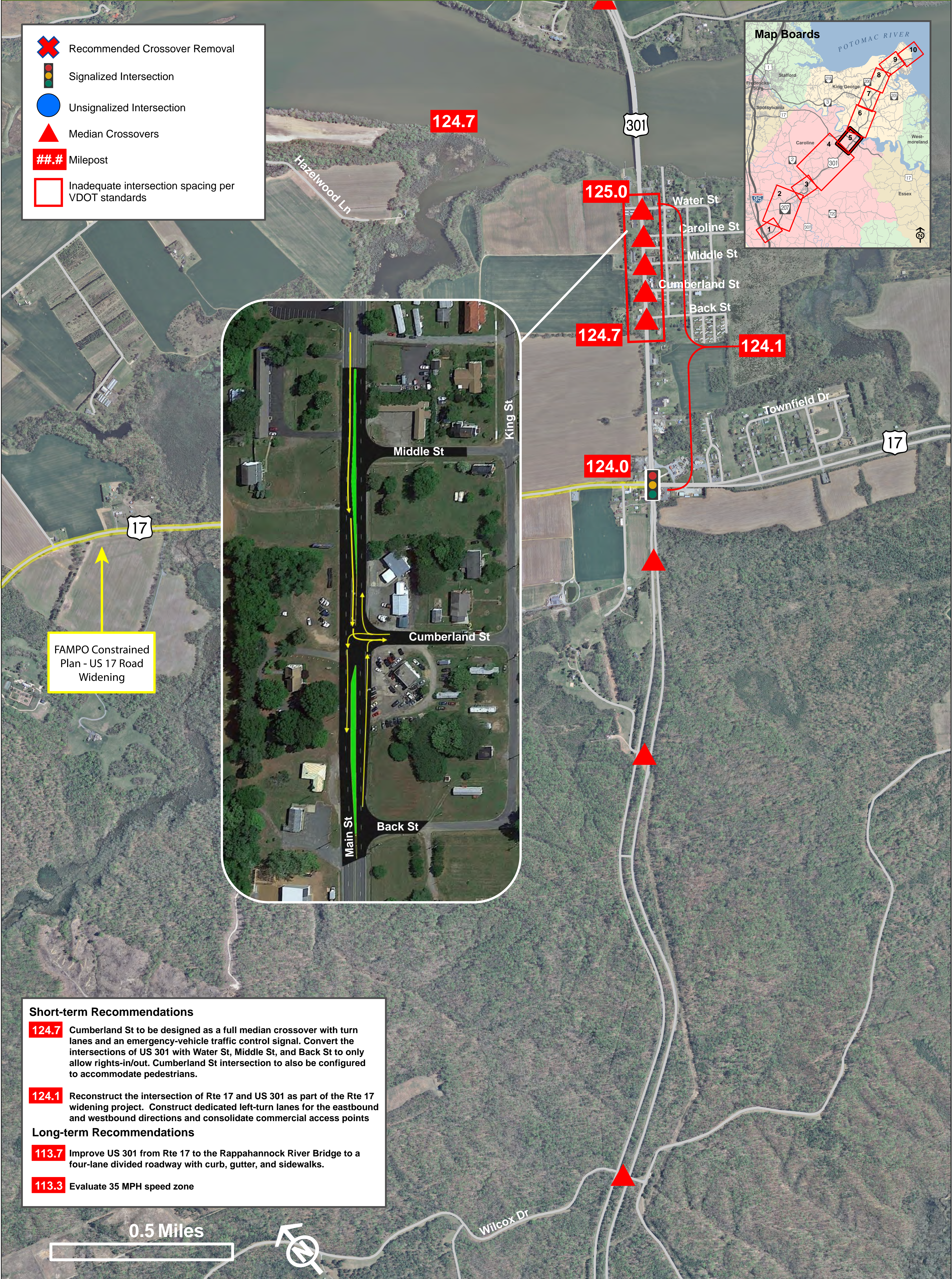
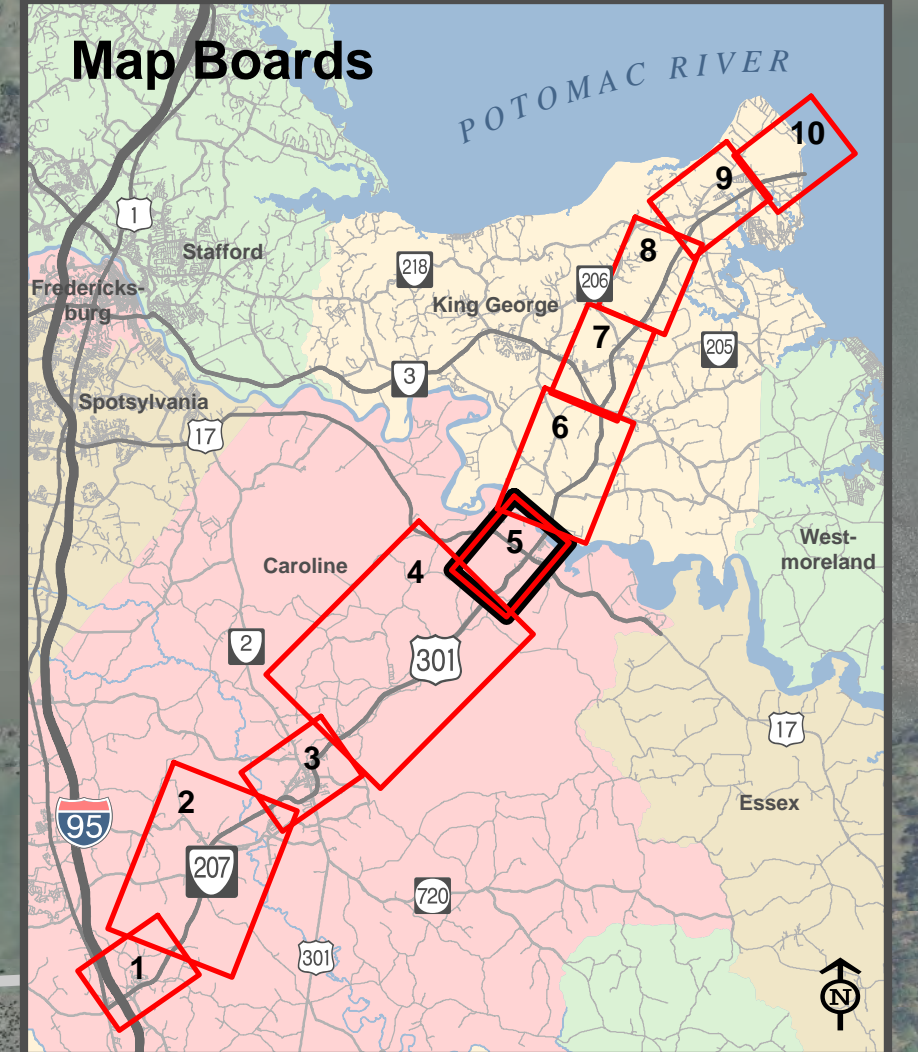
PRELIMINARY RECOMMENDATIONS

BOARD 5/5



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-  Recommended Crossover Removal
-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Milepost
-  Inadequate intersection spacing per VDOT standards



FAMPO Constrained Plan - US 17 Road Widening

Short-term Recommendations

124.7 Cumberland St to be designed as a full median crossover with turn lanes and an emergency-vehicle traffic control signal. Convert the intersections of US 301 with Water St, Middle St, and Back St to only allow rights-in/out. Cumberland St intersection to also be configured to accommodate pedestrians.

124.1 Reconstruct the intersection of Rte 17 and US 301 as part of the Rte 17 widening project. Construct dedicated left-turn lanes for the eastbound and westbound directions and consolidate commercial access points

Long-term Recommendations

113.7 Improve US 301 from Rte 17 to the Rappahannock River Bridge to a four-lane divided roadway with curb, gutter, and sidewalks.

113.3 Evaluate 35 MPH speed zone

0.5 Miles



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Open Discussion