chapter

5

Crossovers

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5.1 Introduction

Crossovers, or median openings, inherently create increased risk for crashes along a corridor due to the introduction of potential right-angle and rear end conflicts with other traffic. This risk is more significant when travel speeds are high and turn lanes are not sufficient to allow slower moving turning vehicles to move out of the main travel lane. Openings in a median can be classified in three manners: signalized intersection, unsignalized intersection or crossover. There are 268 openings in the median along the U.S. Route 13 corridor, of which, 169 are crossovers. Crossovers provide access to residential/commercial driveways, farm entrances, or areas for u-turns. The 2002 Study recommended that 101 crossovers be closed. Since that time, 16 crossovers have been closed. This chapter reevaluates the signalized intersections, unsignalized intersections and remaining crossovers to determine if any should be closed and if not, what improvements should be made at each opening.

5.2 Evaluation

Many of the crossovers along U.S. Route 13 do not have left turn lanes. If turn lanes do exist, the total turn lane storage and taper lengths are less than the 400 feet guideline provided in VDOT's Road Design manual for rural roads. During the evaluation of the crossovers, the study team examined the intersection and crossover spacing to determine if they were in compliance with VDOT's Access Management guidelines. The study team also took into account the usage of the crossover, crash history in the vicinity of the crossover, and the improvements necessary to improve the overall safety of the corridor. U.S. Route 13 was evaluated as a system of access management in balance with enhanced safety.

The general steps in the evaluation began in sequence with distance from the adjacent opening, direct land use access or connector to local roadway network, crash history, and convenience of the closest u-turn opportunity if closed. If closure was not recommended, then left turn lanes were recommended to be lengthened or added. The recommendations establish a standard for every median opening to have northbound and southbound left turn lanes with tapers.

A specific treatment recommendation in this Chapter is the use of the Restricted Crossing U-turn Intersection (RCUT) as shown in Figure 5.1. The RCUT, or superstreet intersection, removes the left-turn and through movements from the side street approaches. Instead, these movements are accommodated by a right turn onto the main road and then a u-turn maneuver approximately 400 feet after the intersection. Left turns from the main road remain unchanged. This is a proven technique in reducing crashes since the side street traffic is limited to right turns only whereas the driver only has to find acceptable gaps in one direction of traffic at a time instead of simultaneous gaps. Essentially, the complete maneuver is broken down into simpler steps. The FHWA RCUT Brief is provided in Appendix F.

Figures 5.2 to 5.10 present the location of all crossovers and intersections, the crossovers recommended for closure in the 2002 Study, the crossovers closed since 2002, recommendations from VDOT during a 2014 evaluation, and the recommended closure or treatment based on this current study. Of the 85 remaining crossovers identified to be closed in the previous study, only 45 are still recommended to be closed. There are also 15 partial closures or RCUT median openings recommended. The detailed tabulated results of the evaluation can be found in Appendix D.

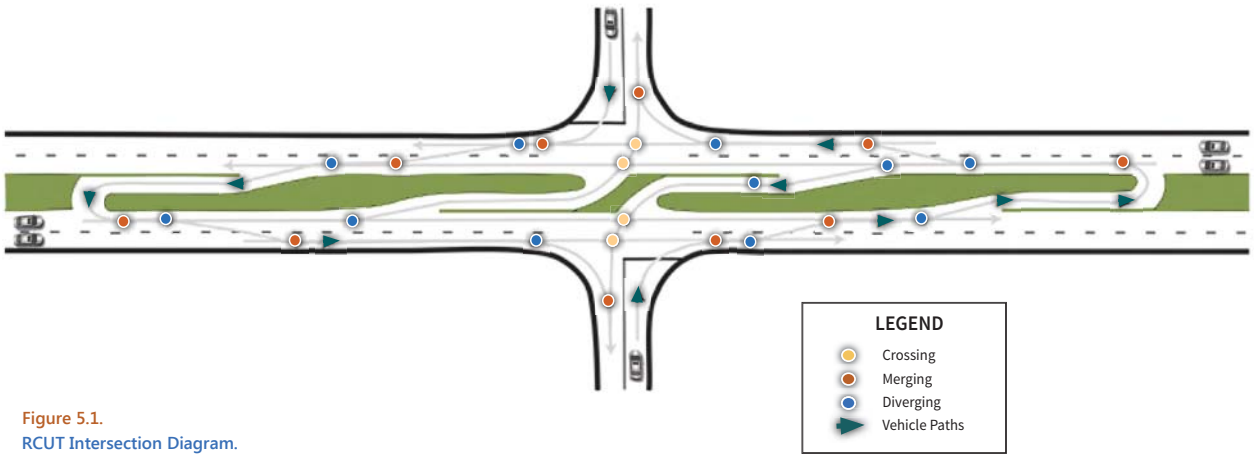


Figure 5.1.
RCUT Intersection Diagram.

Table 5.1.
U.S. Route 13 Segment Locations.

Segment #	Start Mile Post	End Mile Post	Corridor
1	70.00	74.78	Route 600 (Kiptopeke) to Route 624 (Cape Charles)
2	74.78	78.91	Route 624 (Cape Charles) to Route 642 (Cape Charles)
3	78.91	86.55	Route 642 (Cape Charles) to Route 630 (Martin Siding)
4	86.55	89.03	Route 630 (Martin Siding) to Route 628 (Treherneville and Machipongo)
5	89.03	93.90	Route 628 (Treherneville and Machipongo) to Route 617 (Nassawadox)
6	93.90	98.48	Route 617 (Nassawadox) to Route 618 (Exmore)
7	98.48	103.03	Route 618 (Exmore) to Route 607 (Melfa, Keller, Painter)
8	103.03	110.41	Route 607 (Melfa, Keller, Painter) to Route 639 (Accomac and Onley)
9	110.41	117.54	Route 639 (Accomac and Onley) to Business 13/ Route 663 (Mary N Smith Area)
10	117.54	120.23	Business 13/Route 663 (Mary N Smith Area) to Route 679
11	120.23	123.47	Route 679 to Route 681 (Nelsonia)
12	123.47	125.57	Route 681 (Nelsonia) to Route 729 (Mappsville)
13	125.57	128.90	Route 729 (Mappsville) to Route 692 (Oak Hall and Temperanceville)
14	128.90	133.93	Route 692 (Oak Hall and Temperanceville) to Route 175
15	133.93	138.10	Route 175 to Maryland State Line
RT 175	0.00	6.98	Route 175 from US Route 13 to Mosquito Creek

Source: 2002 U.S. Route 13/Wallops Island Access Management Study..

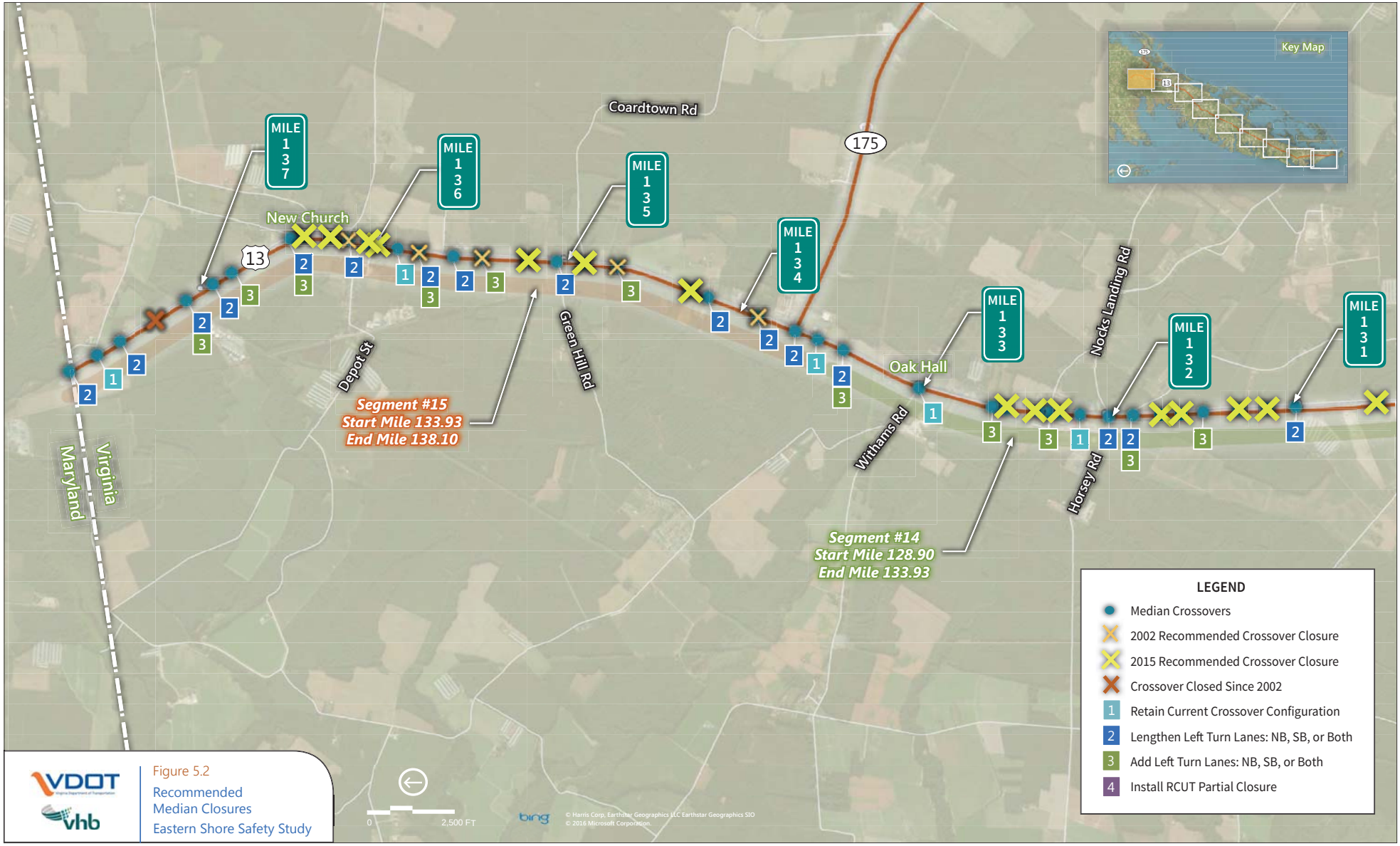
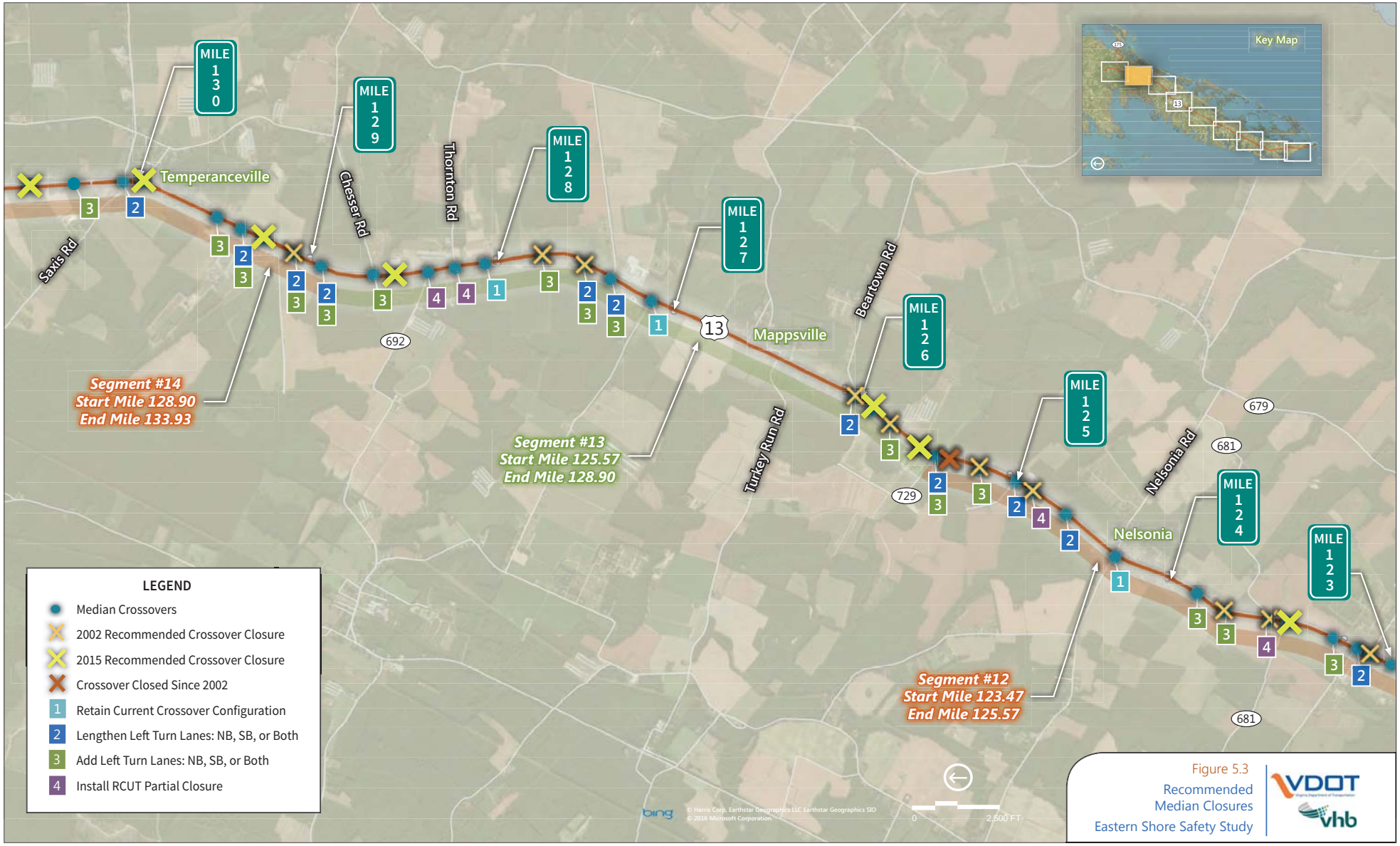


Figure 5.2
Recommended Median Closures
Eastern Shore Safety Study



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Recommended Median Closures
Eastern Shore Safety Study

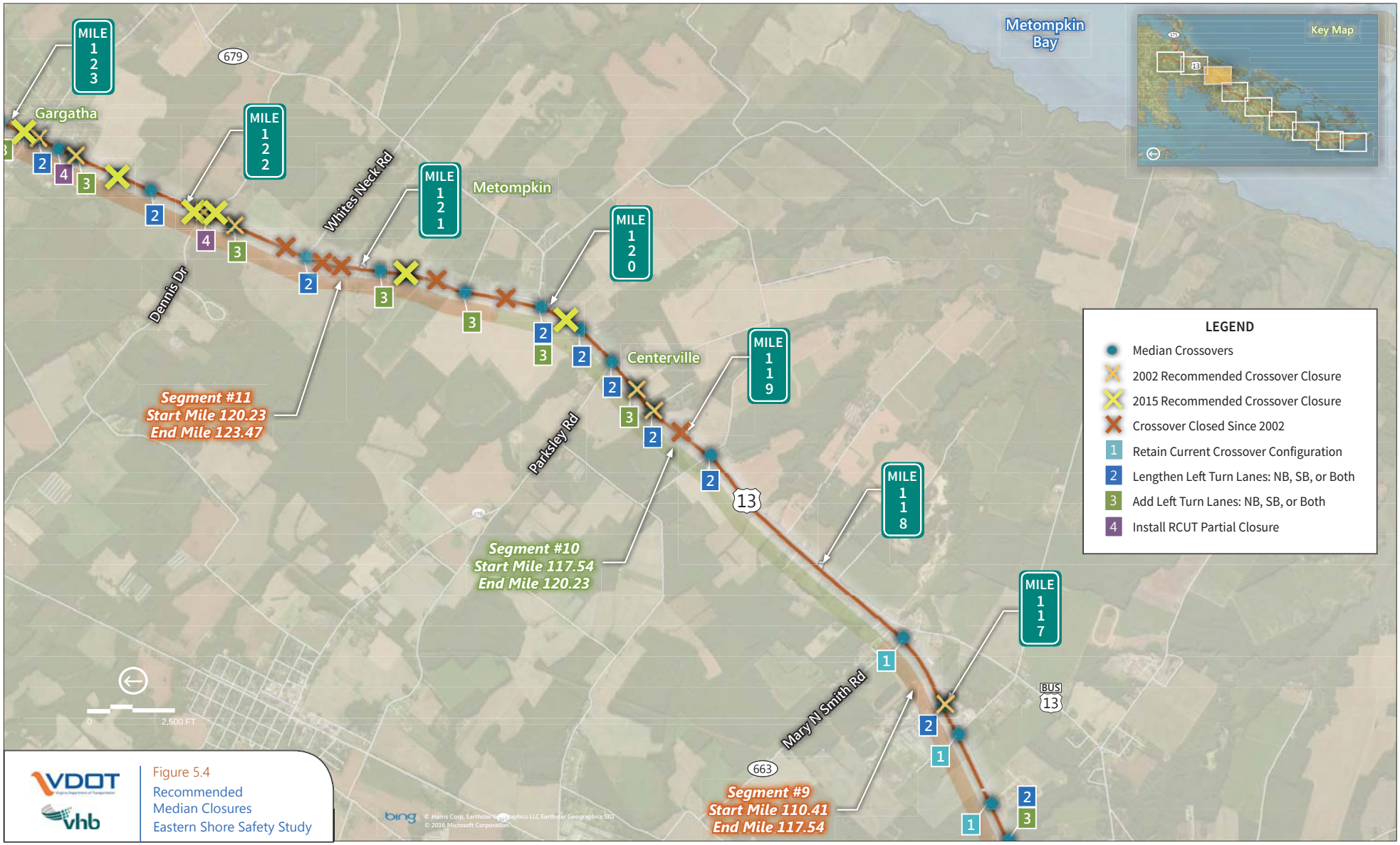

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Figure 5.4
Recommended
Median Closures
Eastern Shore Safety Study

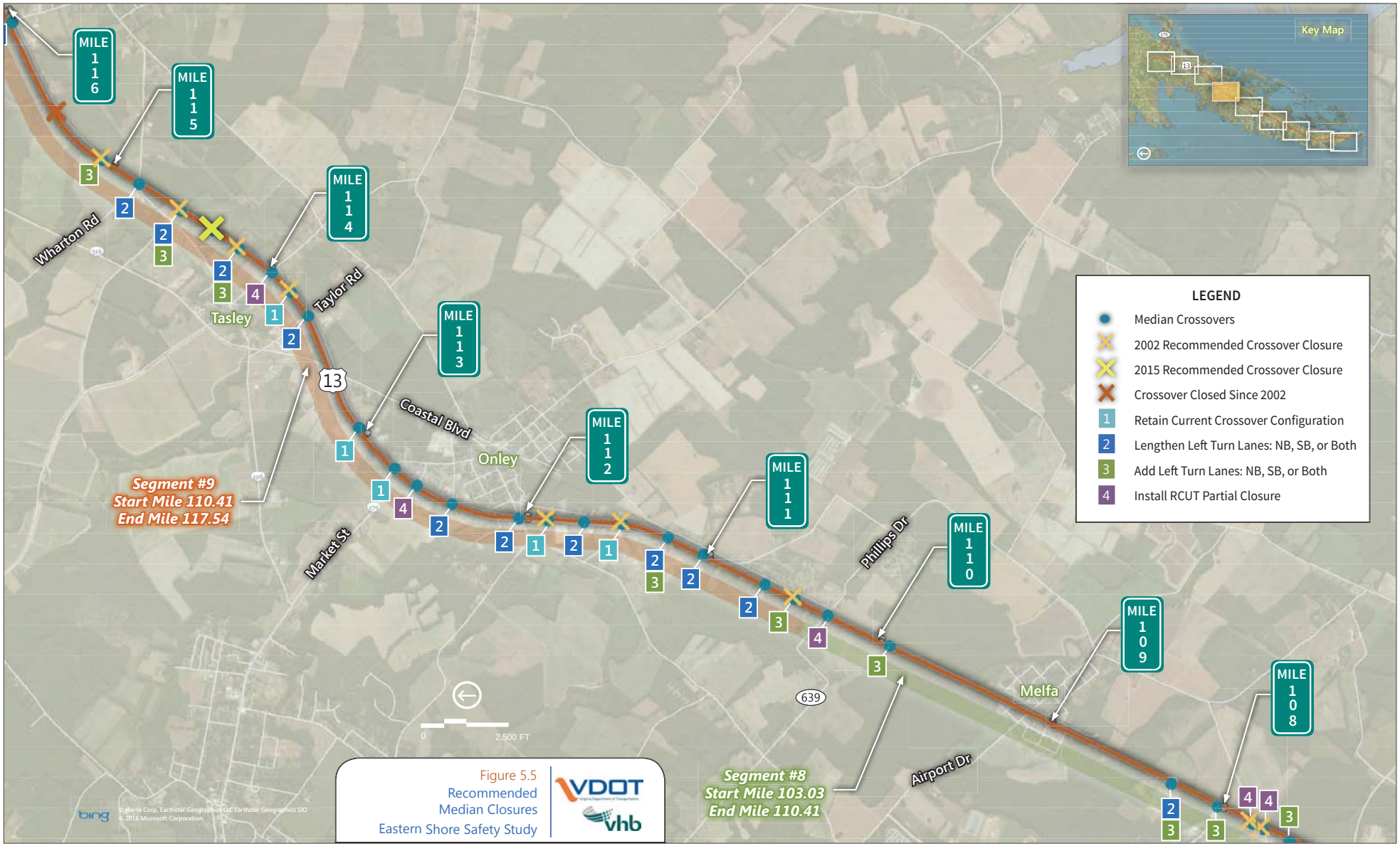

Figure 5.5
Recommended
Median Closures
Eastern Shore Safety Study

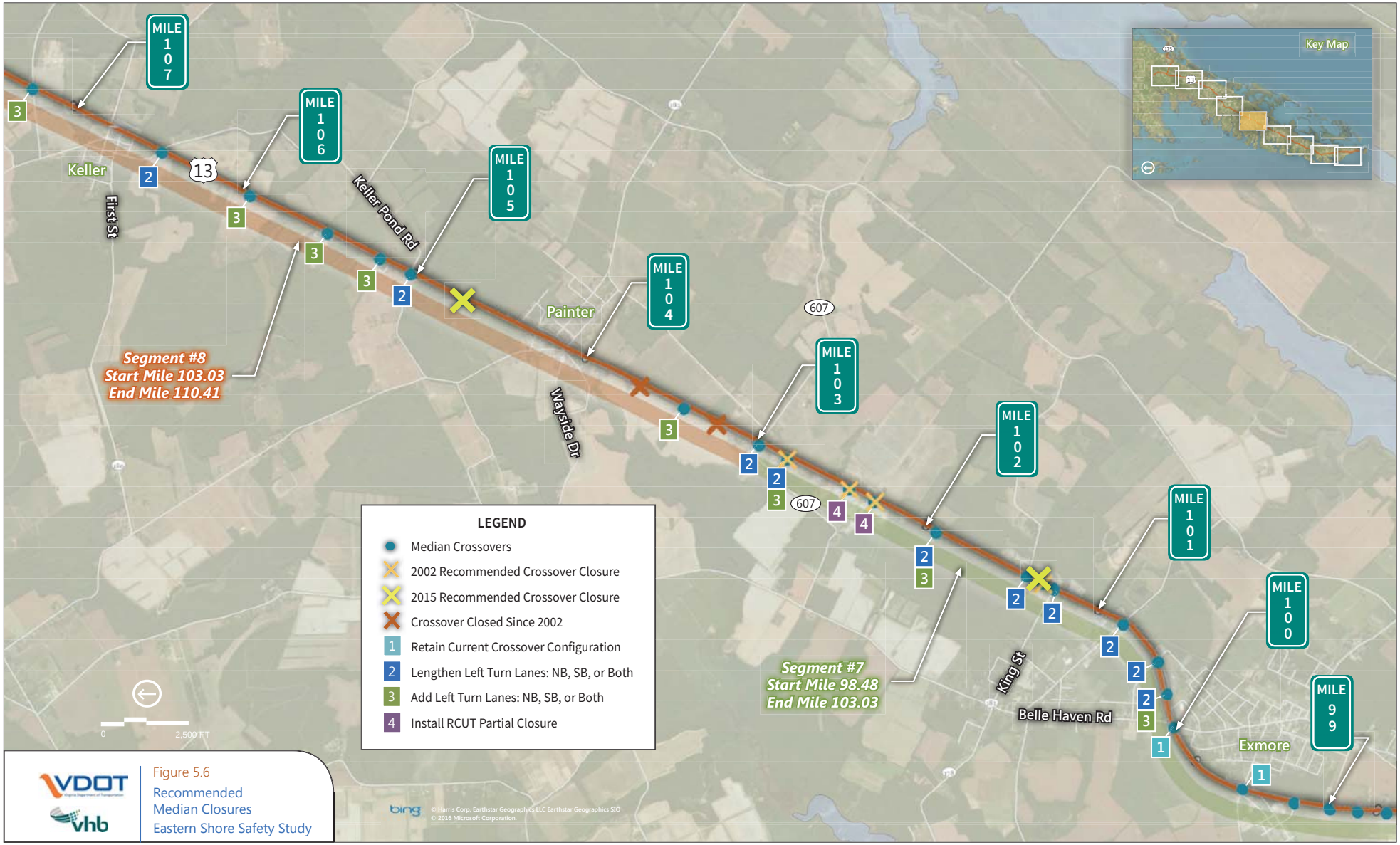

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Figure 5.6
Recommended
Median Closures
Eastern Shore Safety Study

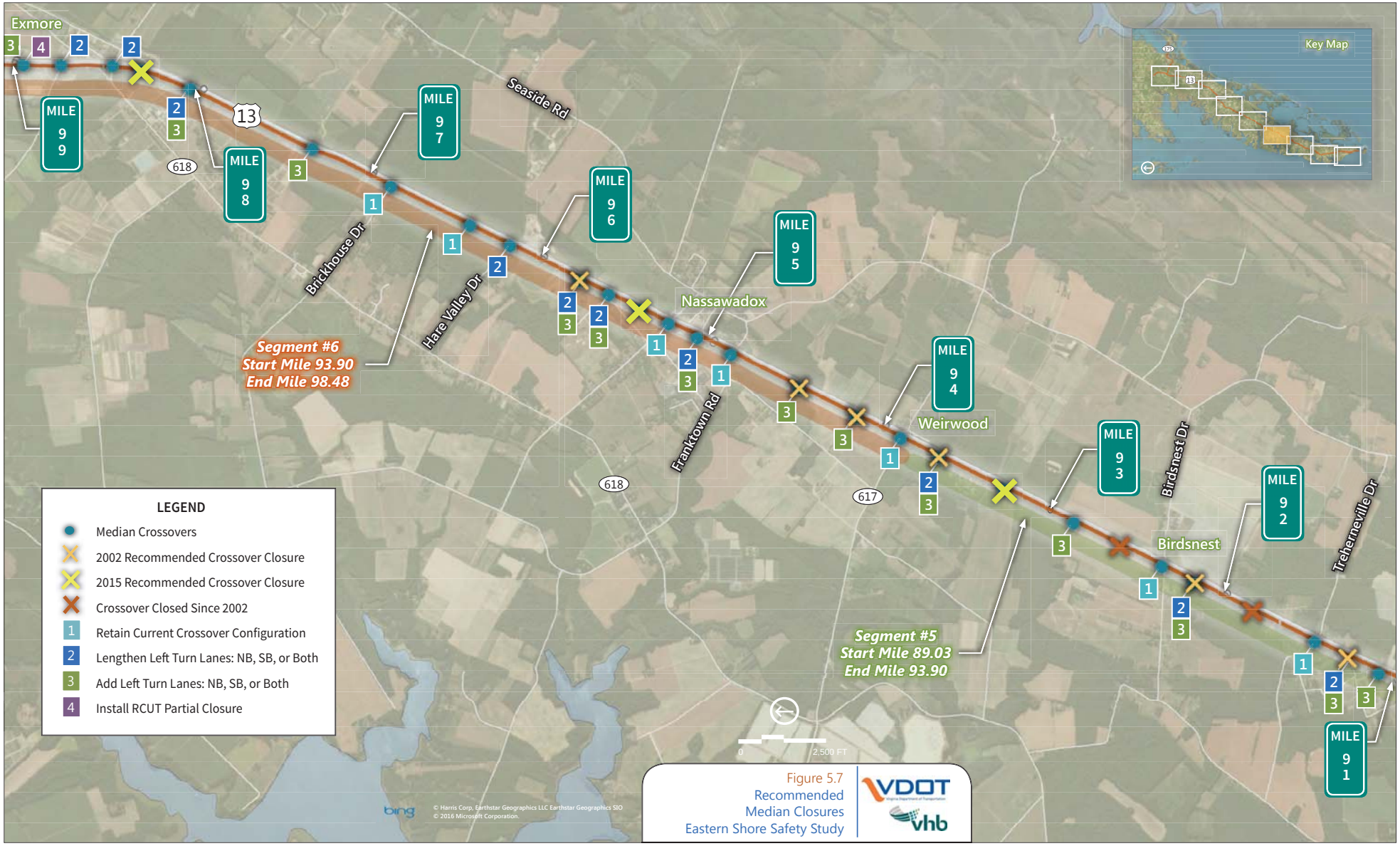

Figure 5.7
Recommended
Median Closures
Eastern Shore Safety Study

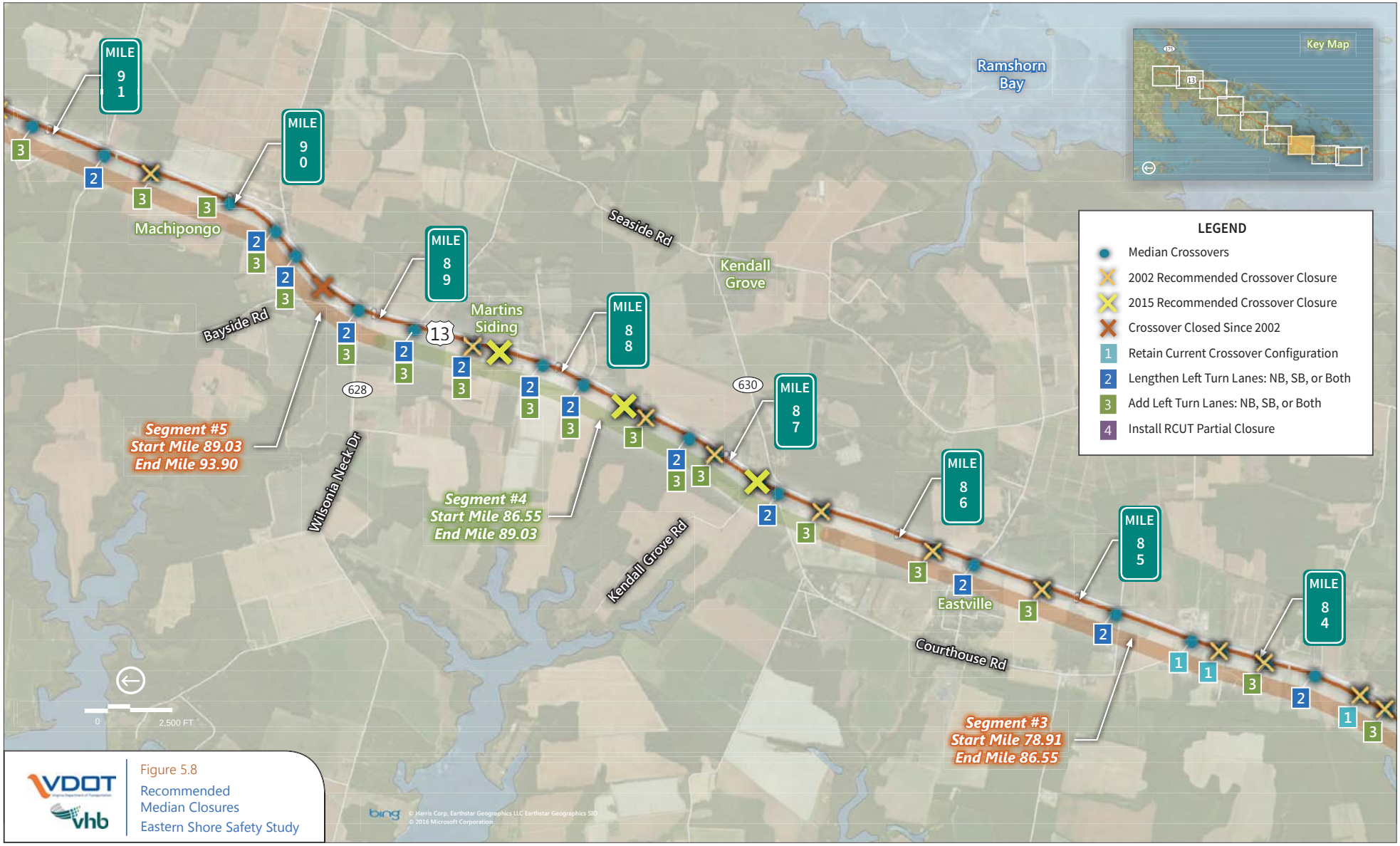

Figure 5.8
Recommended Median Closures
Eastern Shore Safety Study

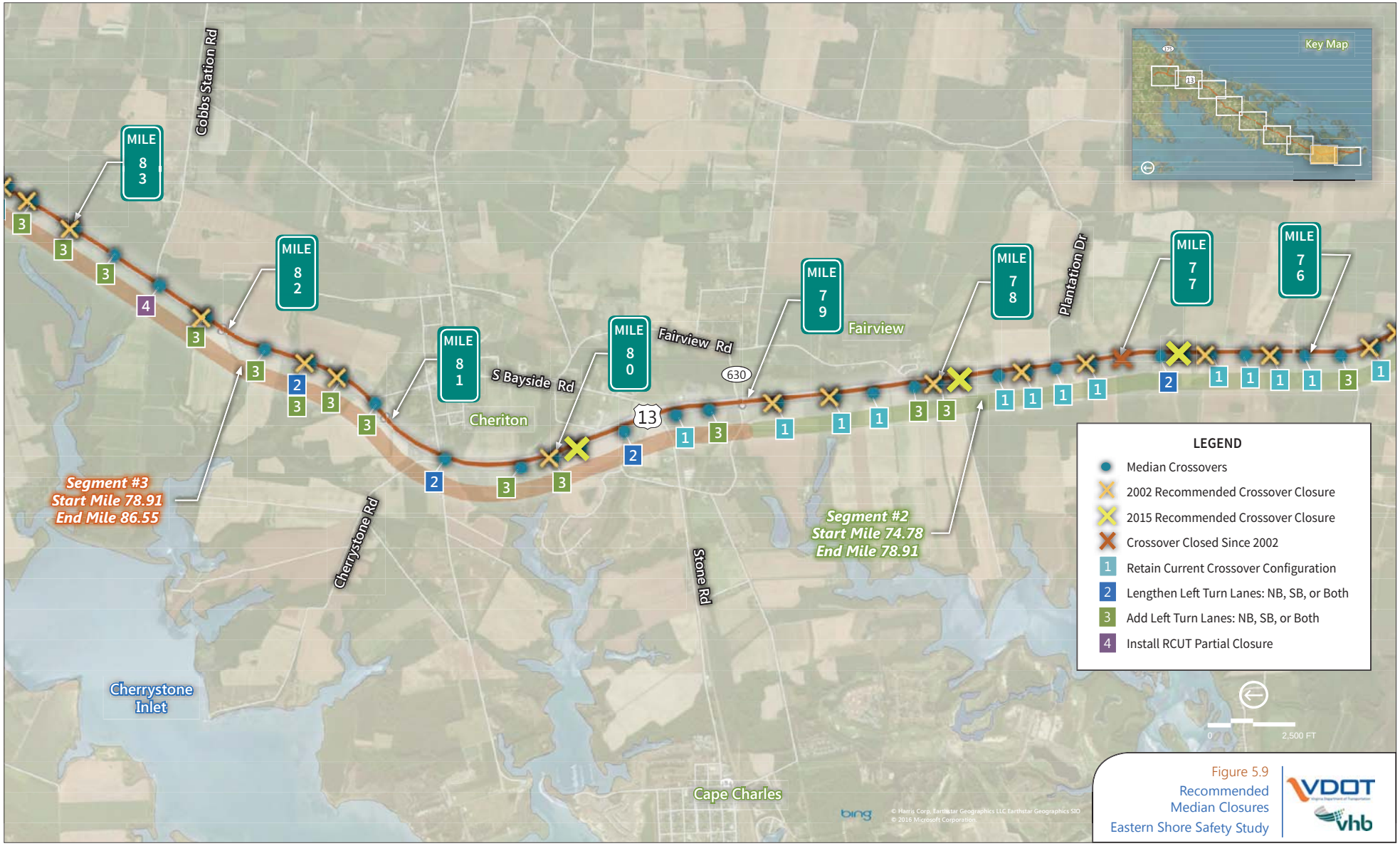

Figure 5.9
Recommended
Median Closures
Eastern Shore Safety Study

Figure 5.10
Recommended Median Closures
Eastern Shore Safety Study