

Executive Summary

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The Virginia Department of Transportation (VDOT) identified the need to evaluate transportation deficiencies on U.S. Route 13 and portions of Route 175 on Virginia's Eastern Shore. This report documents the findings of the Eastern Shore Safety Study and presents the final recommendations and plan of action for the corridors. The goal of the study was to develop the basis of an action plan that VDOT can use to implement the countermeasures to make U.S. Route 13 and Route 175 safer transportation facilities for all who use them.

The study provided a historical safety comparison to the 2002 U.S. Route 13/Wallops Island Access Management Study (2002 Study), produced a detailed tabulation of recommendations of safety treatments, and provided the corresponding information for implementation.



E.1 2002 Study Comparison

A crash data comparison between the three-year period from the 2002 Study (1997-1999) and the most recent three-year period (2012-2014) was prepared. The results show that there were 80 more crashes, a 10% increase, in the more recent period. Although there are more crashes, U.S. Route 13 and Route 175 serve more traffic on a daily basis. As a result, the crash rate calculations indicate that 13 of the 19 segments show a reduction in their crash rates.

Since 2002, some of the recommendations made in the earlier study to enhance safety and efficiency of the operation of the Eastern Shore corridors were implemented: 16 crossovers were closed, drainage grates were reconstructed, rumble strips on the left and right shoulder edges were installed where existing

geometry could accommodate them, and advance intersection warning signs with beacons were installed. With the exception of the rumble strips, due to the timing and nature of the techniques applied, clear associated safety benefits from the measures could not be drawn. The enhanced safety of the corridors is recognized; however, the empirical data could not be used as documentation of lasting results. A comparison of 2010 versus 2014 roadway departure crashes showed a 27% reduction, attributed to the installation of the rumble strips.

E.2 Recommendations and Action Plan

The study utilized five years of crash data (2010 – 2014) to assess the current safety of the U.S. Route 13 and Route 175 corridors in accordance with the Corridor Safety Assessment (CSA) Process Guideline prepared for Corridors of Statewide Significance (CoSS). The data set included 1,574 crash records categorized as roadway departure, crash with an animal, angle, rear end, pedestrian, or other. The distribution by crash type is shown in Figure ES.1.

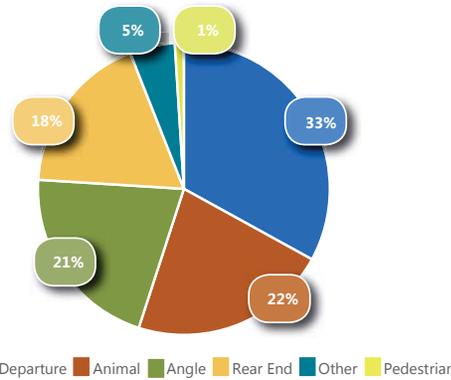


Figure ES.1. Crash Types.

The data was processed from multiple perspectives to provide the most comprehensive evaluation of the roadway conditions. The results were used to prepare a set of countermeasures which can predictively produce facilities with reduced crash rates after implementation when referencing the Federal Highway Administration's (FHWA) Crash Modification Factors Clearinghouse (<http://www.cmfclearinghouse.org>).

The safety techniques can be organized into three categories. These categories including some examples are:

- ◆ Positive guidance and recovery measures – widening shoulders, installing safety edge, enhancing roadway delineation and lighting where needed;
- ◆ Unsignalized intersection measures – constructing left turn lanes at every median opening, if left-turn lane installation is not feasible, the median opening should be moved where turn lanes can be constructed or the opening closed, controlling access near all intersections, installing intersection warning signs; and
- ◆ Access management measures – modifying driveways and property frontage for improved control, consolidate and/or close median openings utilizing Restricted Crossing U-Turn (RCUT) intersections.

The countermeasures were assigned throughout the U.S. Route 13 and Route 175 corridors using the hybrid approach of crash history and compliance with the Virginia Supplement to the Manual of Uniform Traffic Control Devices (MUTCD). The safety analysis led to a series of recommendations which emerged from three processes: Systemic Evaluation, Crossover and Intersection Assessment, and Site Specific Evaluation. The associated costs within these categories are summarized in Table ES.1. All details can be found in the full document and appendices.

Table ES.1. Cost Summary of Recommendations.

Treatment	Northampton County	Accomack County
Systemic Treatments	\$4,224,613	\$4,468,840
Crossover and Intersection Treatments	\$5,022,934	\$7,393,608
Site Specific Treatments	\$2,304,607	\$4,946,642
Total	\$11,552,154	\$16,809,090

The 2002 Study provided an access management evaluation and recommendations. This 2016 Study supersedes the 2002 Study recommendations with the exception of those discussed in Section 6.2.1 of the 2002 Study regarding U.S. Route 13 new roadway alignments and grade separated intersections.

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