

Hazard Elimination Project Evaluation

Project Information

Order ID: 41000037562

Project ID: W-5214A

Location: US-25 from 0.3 mile north of the NC/SC State Line to SR 1858 (Old Zirconia Rd)

County: Henderson

City: Near Zirconia

Division: 14

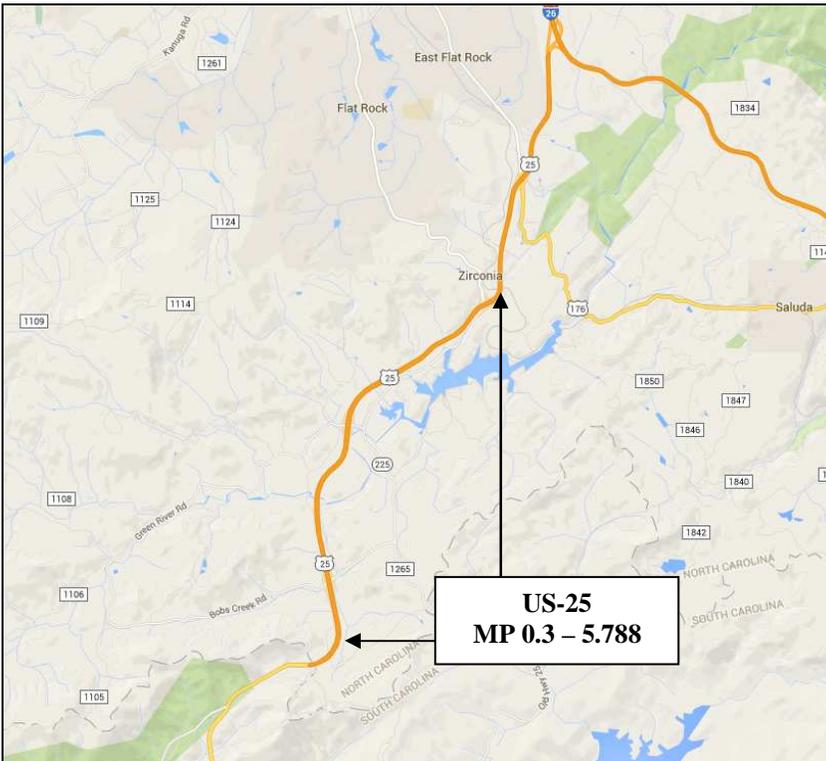
Signal ID: N/A

Countermeasure: Install Median Guardrail (multiple types)

Project Completion: September 15, 2010

Project Cost: \$1,025,000

Map and Aerial (from Google Maps) – Coordinates 35.238984, -82.412318



Naive Before and After Analysis

Before Period: April 1, 2005 through February 28, 2010 (4 years, 11 months)

Const. Period: March 1, 2010 through September 30, 2010

After Period: October 1, 2010 through August 31, 2015 (4 years, 11 months)

Analysis Criteria: Treatment data consisted of all crashes along US-25 from 0.3 mile north of the South Carolina State Line to the SR 1858 (Old Zirconia Road) overpass (Milepost 0.3 to 5.788) with a 0-foot y-line and no ramp crashes.

Target Crashes: Median Lane Departure crashes were the selected Target Crashes and include the following: Ran-Off Road (Left, Straight); Fixed Object; and Head-On – each crash was examined and determined if the first event was the vehicle leaving the roadway towards the median.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	47	78	66.0 %
Total Severity Index	7.73	6.41	- 17.1 %
Target Crashes – Median Lane Departure	12	31	158.3 %
Target Crash Severity Index	4.08	7.32	79.4 %
Cross Median Crashes	3	0	- 100.0 %
Vehicle Struck Median Guardrail	5	29	200+ %
Volume (2007, 2013)	12,800	13,500	5.5 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	2	1	- 50.0 %
Class A injury Crashes	1	3	200.0 %
Class B injury Crashes	7	6	- 14.3 %
Class C Injury Crashes	5	10	100.0 %
Property Damage Only	32	58	81.3 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Lane Departure Crashes	32	52	62.5 %
Lane Departure Crash Severity Index	10.42	8.25	- 20.8 %
Lane Departure Wet Crashes	8	22	175.0 %
Wet-LD Crash Severity Index	3.78	5.79	53.2 %
Lane Departure Winter Crashes	6	7	16.7 %
Winter-LD Crash Severity Index	4.70	2.06	- 56.2 %

Overall Summary Results

Total Crashes:	66 %	(increase)
Total Crash Severity:	- 17 %	(reduction)
Target Crashes:	158 %	(increase)
Target Crash Severity:	79 %	(increase)
Volume:	6 %	(increase)

Additional Summary Results

Lane Departure Wet Roadway:	175 %	(increase)
Lane Departure Winter Roadway:	17 %	(increase)

Items for Discussion/Concerns

Lane Departure crashes along this segment have increased in the after period as stated in the charts above. GIS Collision Diagrams are provided that indicate lane departure dry, wet, and winter crashes only along this segment.

There was an After Period fatal collision along this route in the evaluation. The crash was excluded and a fatal investigation report was not completed. The incident involved a DWI motorist leaving the scene of the single vehicle crash.

Weather Data was also examined at the closest data point which was the Asheville Airport located approximately 15 miles away. Weather data was requested from the North Carolina State Climate Office and all measurements above 0.01 inches per event were included.

<u>Weather Data – Asheville Airport</u>	Before 1795 Days	After 1796 Days	Percent Reduction (-) Percent Increase (+)
Total Number of Wet Days	613 Days	658 Days	7.3 %
Percentage of Wet Days	34 %	37 %	3.0 %
Total Precipitation in Inches	231.89 in	247.22 in	6.6 %
Average Precipitation per Wet Event	0.38 in/event	0.38 in/event	0.0 %

The weather data indicates more days of wet roadway conditions in the after period but no change in the average precipitation per event.

Data Prepared For

The Traffic Safety Unit *of the*
Transportation Mobility and Safety Division *of the*
Division of Highways *of the*
North Carolina Department of Transportation

Data Prepared By

Principal Investigator: Jason B. Schronce, PE

Work Group/Consultant: NCDOT - Safety Evaluation Group

Date: November 9, 2015

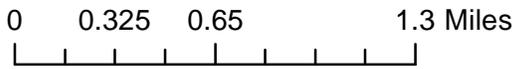
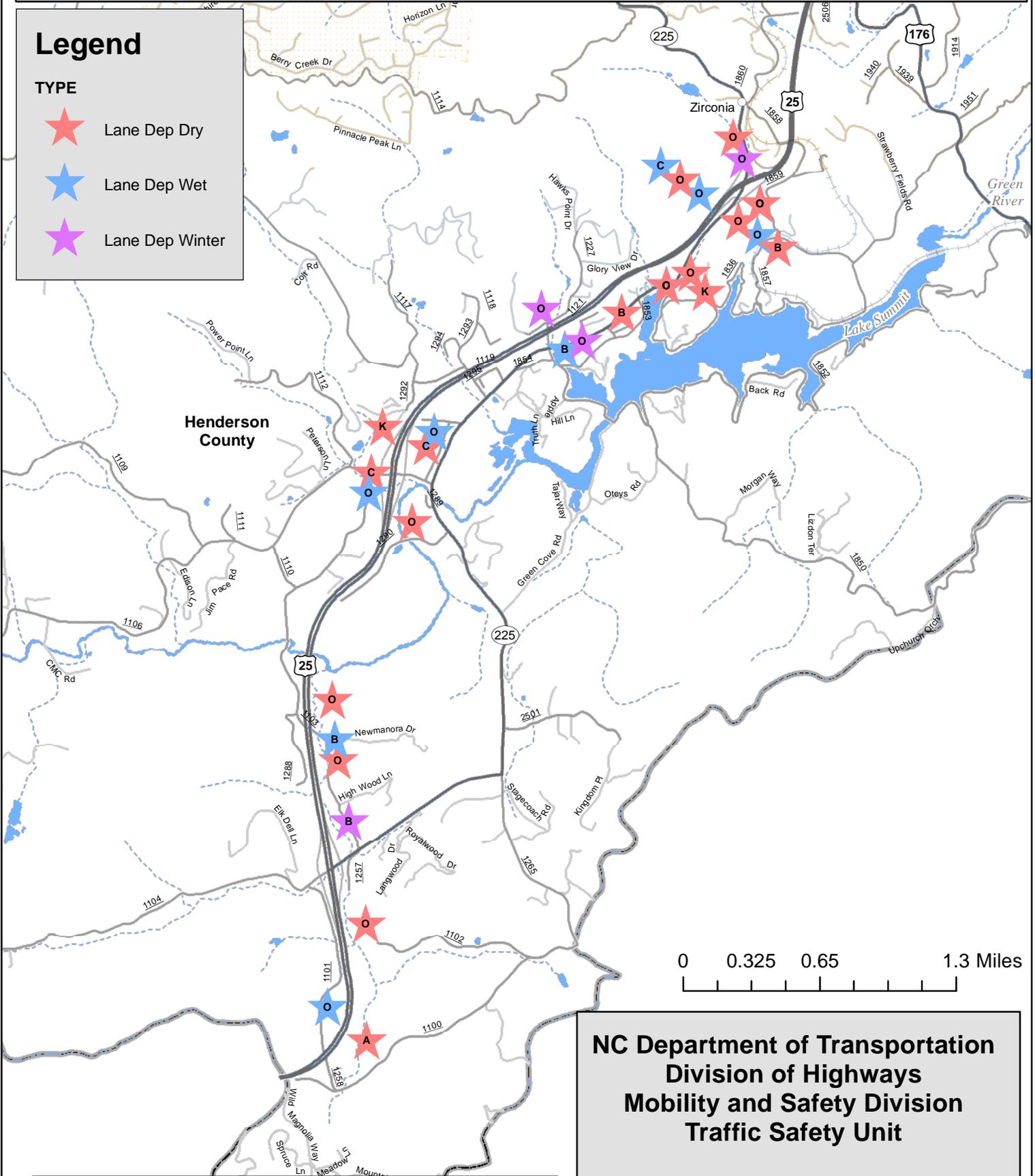
W-5214A - HENDERSON County
US-25 from 0.3 mile north of SC-Line to SR 1858 (MP 0.3-5.788)
BEFORE PERIOD - 4/1/2005 to 2/28/2010 (4.92 Yrs)



Legend

TYPE

- ★ Lane Dep Dry
- ★ Lane Dep Wet
- ★ Lane Dep Winter



NC Department of Transportation
Division of Highways
Mobility and Safety Division
Traffic Safety Unit

Date: 11/4/2015
J. Schronce

Crashes East Roadway = Travelling Northbound
Crashes West Roadway = Travelling Southbound

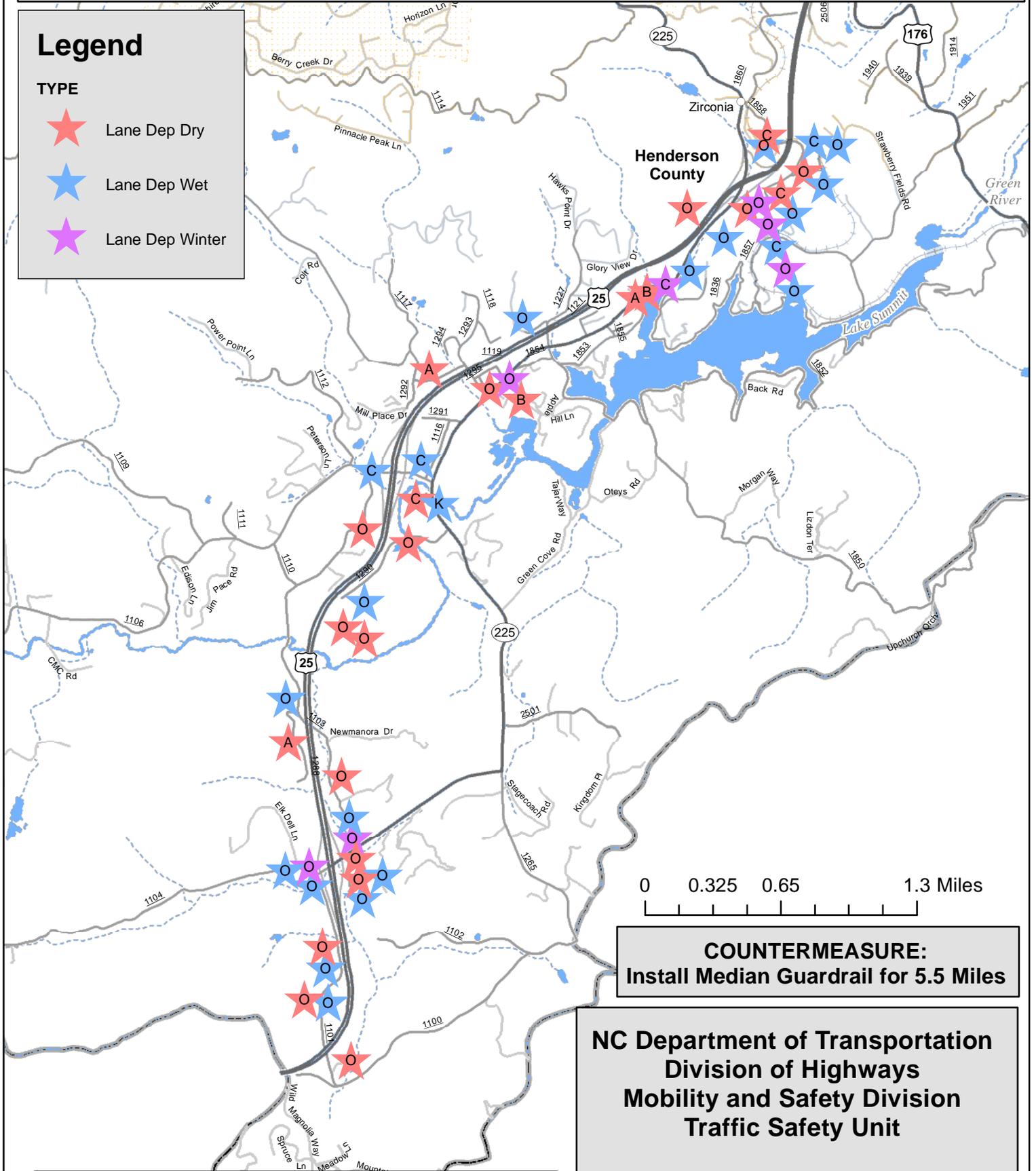
W-5214A - HENDERSON County
US-25 from 0.3 mile north of SC-Line to SR 1858 (MP 0.3-5.788)
AFTER PERIOD - 10/1/2010 to 8/31/2015 (4.92 Yrs)



Legend

TYPE

- ★ Lane Dep Dry
- ★ Lane Dep Wet
- ★ Lane Dep Winter



COUNTERMEASURE:
Install Median Guardrail for 5.5 Miles

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