

Spot Safety Project Evaluation

Project Information

Order ID: 41000028033

Project ID: 13-07-201

Location: SR 2178 (Hardin Road) at Westview Street/Westwood Drive

County: Rutherford

City: Forest City

Division: 13

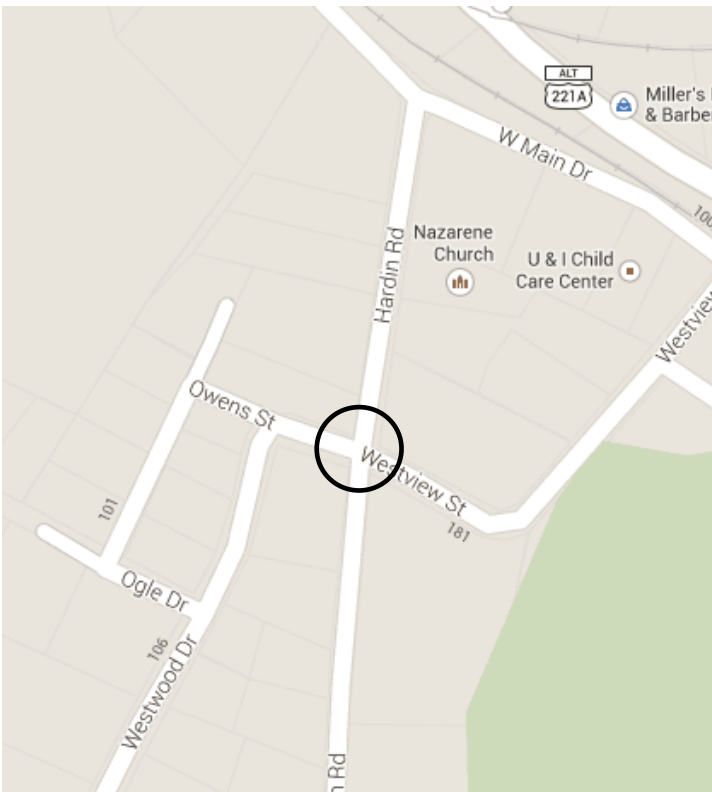
Signal ID: N/A

Countermeasure: Install a four-way stop with additional pavement markings and warning devices

Project Completion: August 4, 2009

Project Cost: \$6,000

Map and Aerial (from Google Maps)



Naive Before and After Analysis

Before Period: March 1, 2005 through June 30, 2009 (4 years 4 months)

Const. Period: July 1, 2009 through September 30, 2009

After Period: October 1, 2009 through January 31, 2014 (4 years 4 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the SR 2178, Westwood Drive and Westview Street approaches.

Target Crashes: Frontal Impact Crashes (left-turn, same roadway; left-turn, different roadway; right-turn, same roadway; right-turn, different roadway; head-on; and angle crashes)

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	28	3	- 89.3 %
Total Severity Index	4.17	5.93	+ 42.2 %
Target Crashes	27	2	- 92.6 %
Target Crash Severity Index	4.29	8.40	+ 95.8 %
Volume (2007, 2011)	6,700	6,000	- 10.4 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	N/A
Class A injury Crashes	0	0	N/A
Class B injury Crashes	5	0	- 100.0 %
Class C Injury Crashes	7	2	- 71.4 %
Property Damage Only	16	1	- 93.8 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Frontal Impact Crashes (Target)	27	2	- 92.6 %
Angle Crashes	23	2	- 91.3 %
Left-turn, different roadway	2	0	- 100.0 %
Left-turn, same roadway	2	0	- 100.0 %

Overall Summary Results

Total Crashes:	- 89 %	(reduction)
Total Crash Severity:	+ 42 %	(increase)
Target Crashes:	- 93 %	(reduction)
Target Crash Severity:	+ 96 %	(increase)
Volume:	- 10 %	(decrease)

Additional Summary Results

Frontal Impact Crashes (Target):	- 93 %	(reduction)
Angle Crashes:	- 91 %	(reduction)
Left-turn, same roadway:	- 100 %	(reduction)
Left-turn, different roadway:	- 100 %	(reduction)

Items for Discussion/Concerns

The target crashes (frontal impact crashes) experienced a 93% percent reduction (27 to 2 crashes). There was a reduction in angle crashes (23 to 2). It should be noted that the target crash severity index increased by 96 %; however, there was only 2 target crashes in the after period that were both injury crashes.

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: Heath Gore, PE
Work Group/Consultant: AECOM
Date: March 28, 2013

SS# 13-07-201
 Order No# 4000028033
 Rutherford County
 BEFORE Period
 3/1/05 - 6/30/09

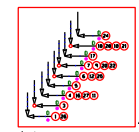
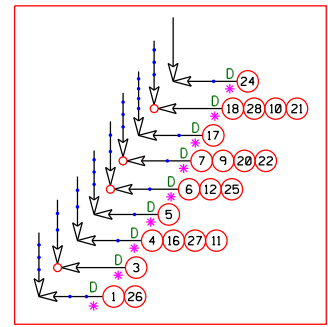
SR 2178 (Hardin Road)
 35 MPH
 2007 ADT-5,400

LEGEND

	MOVING VEHICLE		ANGLE		1 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	PARKED VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	PARKING VEHICLE		SIDEWAVE		30 MPH TO 39		DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49		WET
	HEAD ON		HURRY		50 MPH TO 59		ICY OR SNOWY
	REAR END		FATALITY		TO AND UP		SPEED UNKNOWN
	RAN OFF ROAD				60 MPH TO 69		



Westwood Drive
 35 MPH
 2007 ADT-1,500 (Assumed)



Westview Street
 35 MPH
 2007 ADT-1,000 (Assumed)

SR 2178 (Hardin Road)
 35 MPH
 2007 ADT-5,400

Frontal Impact Crashes

AECOM

Prepared For:
 N.C. DEPARTMENT of TRANSPORTATION
 DIVISION of HIGHWAYS
 TRANSPORTATION MOBILITY and SAFETY DIVISION

TRAFFIC SAFETY UNIT

Date: 3-28-2014 Prepared By: Heath Gore, PE

SS# 13-07-201
 Order No# 4000028033
 Rutherford County
 AFTER Period
 10/1/09 - 1/31/14

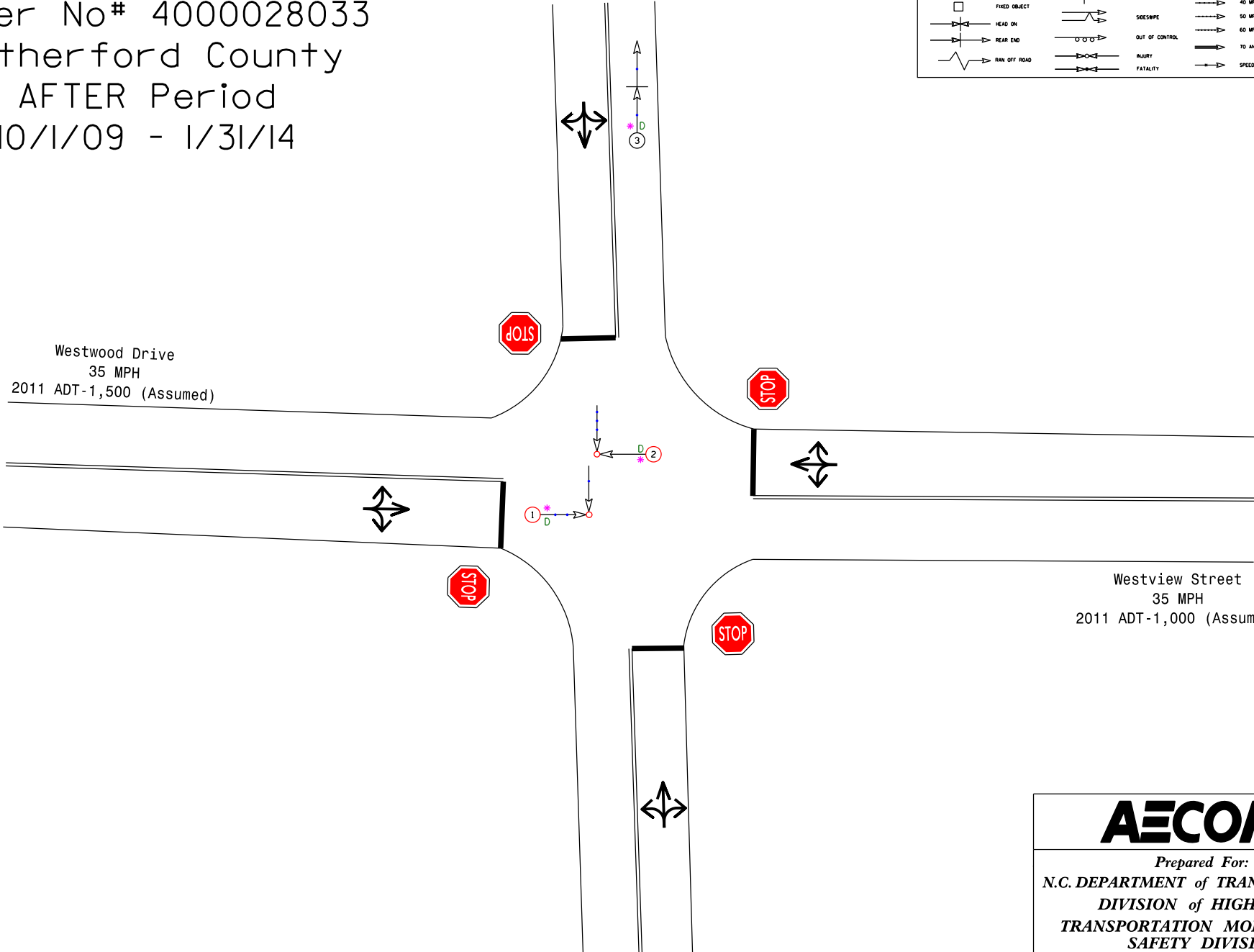
SR 2178 (Hardin Road)
 35 MPH
 2011 ADT-4,700

Westwood Drive
 35 MPH
 2011 ADT-1,500 (Assumed)

Westview Street
 35 MPH
 2011 ADT-1,000 (Assumed)

SR 2178 (Hardin Road)
 35 MPH
 2011 ADT-4,700

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	PARKED VEHICLE		BACKING		20 MPH TO 29		DRIVER AT FAULT
	PARKED VEHICLE		SIDESWIPE		30 MPH TO 39		DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49		WET
	HEAD ON		HURRY		50 MPH TO 59		ICY OR SNOWY
	REAR END		FATALITY		60 MPH TO 69		SPEED UNKNOWN
	RAN OFF ROAD				TO AND UP		ONLY



Frontal Impact Crashes

AECOM

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 N.C. DEPARTMENT of TRANSPORTATION
 DIVISION of HIGHWAYS
 TRANSPORTATION MOBILITY and SAFETY DIVISION

TRAFFIC SAFETY UNIT

Date: 3-28-2014 Prepared By: Heath Gore, PE