

Spot Safety Project Evaluation

Project Information

Order ID: 41000030265
Project ID: 06-05-214
Location: SR 1112 (Stoney Point Rd) and SR 1109 (Dundle Rd)
County: Cumberland
City: Fayetteville
Division: 6
Signal ID: 06-1187
Countermeasure: Install left turn lanes on SR 1112 and install two phase signal
Project Completion: January 2010 Project Cost: \$250,000

Map and Aerial (from Google Maps – Coordinates are 34.988115,-79.028115)



Naive Before and After Analysis

- Before Period: March 1, 2005 through October 31, 2009 (4 years 8 months)
- Const. Period: November 1, 2009 through January 31, 2010 (Signal shown in January 2010)
- After Period: February 1, 2010 through September 30, 2014 (4 years 8 months)
- Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the SR 1112 and SR 1109 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) in the intersection.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	57	14	- 75.4 %
Total Severity Index	5.06	9.59	+ 89.5 %
Target Crashes	47	6	- 87.2 %
Target Crash Severity Index	5.29	4.70	- 11.1 %
Volume (2007, 2012)	10,900	11,900	+ 9.2 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	1	+ 100.0 %
Class A injury Crashes	1	0	- 100.0 %
Class B injury Crashes	2	2	0.00 %
Class C Injury Crashes	19	4	- 78.9 %
Property Damage Only	35	7	- 80.0 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Frontal Impact Crashes (Target)	47	6	- 87.2 %
Angle Crashes	35	3	- 91.4 %
Left-turn, same roadway Crashes	5	2	- 60.0 %
Left-turn, different roadway Crashes	8	3	- 62.5 %
Rear End Crashes	3	3	0.00 %
Night Time Crashes	11	5	- 54.5 %

Overall Summary Results

Total Crashes:	- 75 %	(reduction)
Total Crash Severity:	+ 90 %	(increase)
Target Crashes:	- 87 %	(reduction)
Target Crash Severity:	- 11 %	(reduction)
Volume:	+ 9 %	(increase)

Additional Summary Results

Frontal Impact Crashes (Target):	- 87 %	(reduction)
Angle Crashes:	- 91 %	(reduction)
Night Time Crashes	- 55 %	(reduction)

Items for Discussion/Concerns

The study intersection experienced a 75 % reduction in total crashes (57 to 14 crashes).

The target crashes (Frontal Impact Crashes) experienced an 87 % reduction (47 to 6 crashes).

The intersection experienced a decrease in angle crashes (35 to 3 crashes) and in night time crashes (11 to 5 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: Andrew Covington, EI

Work Group/Consultant: AECOM

Date: November 7, 2014

LEGEND

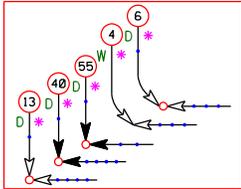
	MOVING VEHICLE		ANGLE		9 MPH OR LESS		A ANIMAL
	PARKED VEHICLE		TURNING		10 MPH TO 19		P PEDESTRIAN
	PARKABLE VEHICLE		BACKING		20 MPH TO 29		B BICYCLE
	MOVABLE OBJECT		SIDESWIPE		30 MPH TO 39		T TRAIN
	HEAD ON		INJURY		40 MPH TO 49		• DRIVER AT FAULT
	REAR END		FATALITY		50 MPH TO 59		D DRY
	RAN OFF ROAD		SPEED UNKNOWN		60 MPH TO 69		W WET
	DAYLIGHT CRASH				70 AND UP		I ICE OR SNOW
	NIGHT CRASH				OTHER		O OTHER

SS# 06-05-214
 Order# 41000030265
 Cumberland County
 BEFORE Period
 3/1/2005 - 10/31/2009
 4.67 Years

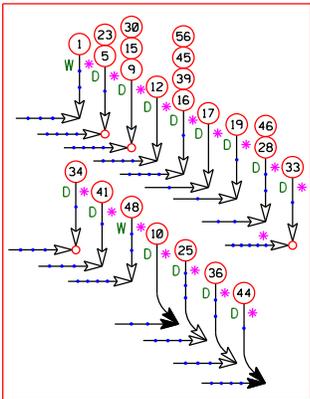
SR 1109 (Dundle Rd)
 55 MPH
 2007 ADT - 3,100



Note:
 Vehicle in Crash #7
 caught on fire



SR 1112 (Stoney Point Rd)
 45 MPH
 2007 ADT - 7,700



SR 1112 (Stoney Point Rd)
 45 MPH
 2007 ADT - 9,350

Note:
 Vehicle in Crash #47
 lost a tire which
 hit another vehicle

Note:
 Vehicle in Crash #52 swerved
 due to another vehicle
 failing to yield right of
 way while turning



SR 1109 (Dundle Rd)
 55 MPH
 2007 ADT - 1,550

AECOM

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

TRAFFIC SAFETY UNIT

Date: 11-7-2014 Prepared By: Andrew Covington, E.I.

LEGEND

	MOVING VEHICLE		ANGLE		9 MPH OR LESS		A ANIMAL
	PARKED VEHICLE		TURNING		10 MPH TO 19		P PEDESTRIAN
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					SPEED UNKNOWN		O OTHER

SS# 06-05-214
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 Cumberland County
 AFTER Period
 2/1/2010 - 9/30/2014
 4.67 Years



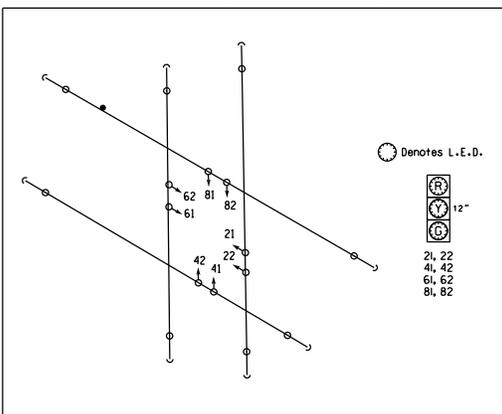
SR 1109 (Dundle Rd)
 55 MPH
 2012 ADT - 3,400

SR 1112 (Stoney Point Rd)
 45 MPH
 2012 ADT - 8,900

SR 1112 (Stoney Point Rd)
 45 MPH
 2012 ADT - 10,000

SR 1109 (Dundle Rd)
 55 MPH
 2012 ADT - 1,500

SIG ID No. 06-1187 (2 Phase Fully Actuated)



Frontal Impact Crashes

AECOM

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