

Spot Safety Project Evaluation

Project Information

Order ID: 41000033824

Project ID: 04-10-3980

Location: NC 55 at NC 111

County: Wayne

City: Southwest of Seven Springs

Division: 4

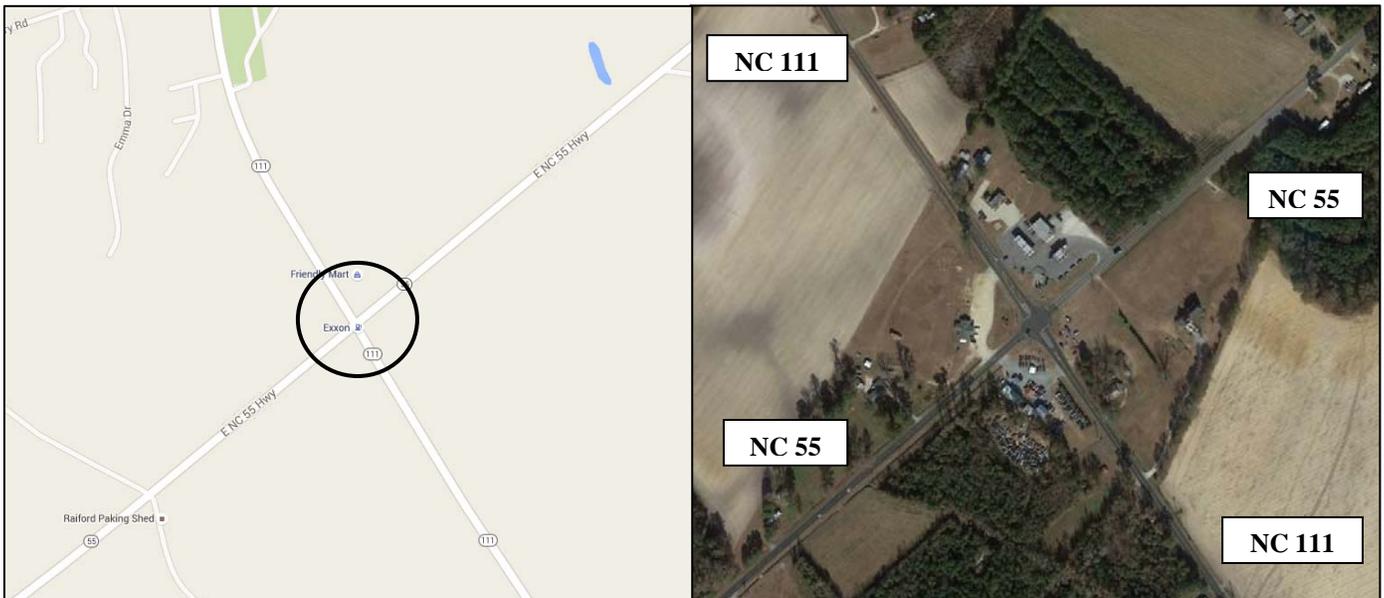
Signal ID: 04-0528

Countermeasure: Install all-way stop by modifying existing overhead warning beacon to all red indications on all approaches, adding dual shoulder-mounted Stop Ahead warning flashers on both approaches of NC 55, supplementing existing right shoulder-mounted Stop Ahead warning flashers on both approaches of NC 111 with identical assemblies on the left shoulder, and widening shoulders at the intersection to improve recovery area and improve visibility of existing islands.

Project Completion: April 6, 2011

Project Cost: \$90,000

Map and Aerial (from Google Maps – Coordinates are 35.201104, -77.888144)



Naive Before and After Analysis

Before Period: April 1, 2007 through February 28, 2011 (3 years 11 months)

Const. Period: March 1, 2011 through May 31, 2011

After Period: June 1, 2011 through April 30, 2015 (3 years 11 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the NC 55 and NC 111 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 – Countermeasure 4 Way Stop with Flasher</u>			
<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	33	7	- 78.8 %
Total Severity Index	6.66	2.06	- 69.1 %
Target Crashes	31	3	- 90.3 %
Target Crash Severity Index	7.03	3.47	- 50.6 %
Volume (2009, 2013)	7,500	9,400	+ 25.3 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	1	0	- 100.0 %
Class A injury Crashes	0	0	N/A
Class B injury Crashes	6	0	- 100.0 %
Class C Injury Crashes	9	1	- 88.9 %
Property Damage Only	17	6	- 64.7 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Frontal Impact Crashes (Target)	31	3	- 90.3 %
Angle Crashes	27	3	- 88.9 %
Rear End Crashes	2	4	+ 100.0 %

Table 1 Summary Results

Total Crashes:	- 79 %	(reduction)
Total Crash Severity:	- 69 %	(reduction)
Target Crashes:	- 90 %	(reduction)
Target Crash Severity:	- 51 %	(reduction)
Volume:	+ 25 %	(increase)

Additional Summary Results

Frontal Impact Crashes (Target):	- 90 %	(reduction)
Angle Crashes:	- 89 %	(reduction)
Rear End Crashes:	+ 100 %	(increase)

Items for Discussion/Concerns

The study intersection experienced a 79 % reduction in total crashes (33 to 7 crashes).

The target crashes (Frontal Impact Crashes) experienced a 90 % reduction (31 to 3 crashes).

The intersection experienced a reduction in Angle Crashes (27 to 3 crashes) and an increase in Rear End Crashes (2 to 4 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

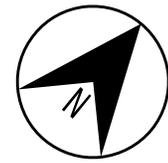
Date: June 5, 2015

SS# 04-10-3980
 Order # 41000033824
 Wayne County
 Before Period
 4/1/07 - 2/28/11

NC 111
 55 MPH
 2009 ADT 4,500

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		SIDESWIPE		30 MPH TO 39		DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49		WET
	HEAD ON		RAN OFF ROAD		50 MPH TO 59		ICY OR SNOW
	REAR END		INJURY		60 MPH TO 69		FATALITY
	RAN OFF ROAD		FATALITY		70 AND UP		ONLY
					SPEED UNKNOWN		

Friendly Mart

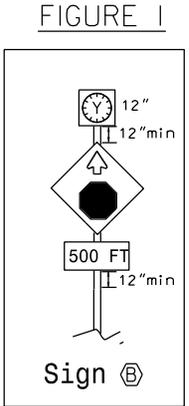
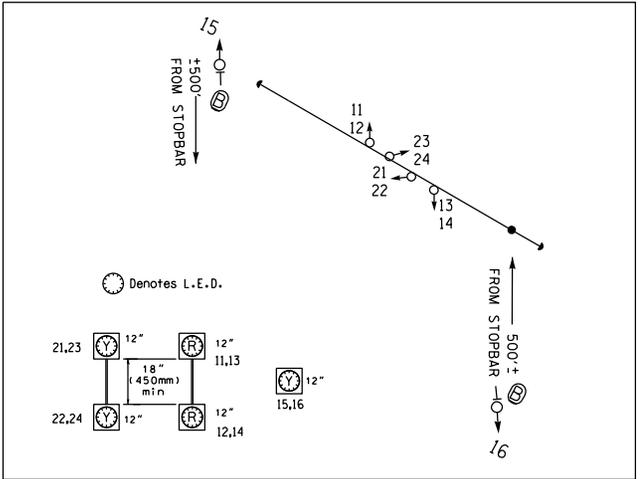


NC 55
 55 MPH
 2009 ADT 2,800

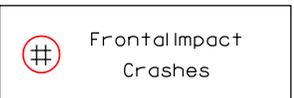
NC 55
 55 MPH
 2009 ADT 3,100

Note: Vehicle in Crash 26 was avoiding collision with a vehicle that failed to yield right of way

SIG ID 04-0528 (Two Circuit Flasher)



NC 111
 55 MPH
 2009 ADT 4,500



AECOM

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

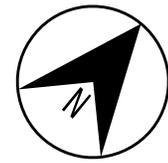
TRAFFIC SAFETY UNIT

Date: 6-5-2015 Prepared By: Andrew Covington, EI

SS# 04-10-3980
 Order # 41000033824
 Wayne County
 After Period
 6/1/11 - 4/30/15

NC 111
 55 MPH
 2013 ADT 6,200

LEGEND			
	MOVING VEHICLE		ANGLE
	PEDESTRIAN		TURNING
	PAKED VEHICLE		BACKING
	FIXED OBJECT		SKIDMARK
	HEAD ON		OUT OF CONTROL
	REAR END		RISKY
	RAN OFF ROAD		FATALITY
	1 MPH OR LESS		P PEDESTRIAN
	10 MPH TO 19		T TRAIN
	20 MPH TO 29		D DRIVER AT FAULT
	30 MPH TO 39		D DRY
	40 MPH TO 49		W WET
	50 MPH TO 59		I ICY OR SNOW
	60 MPH TO 69		O ONLY
	70 AND UP		
	SPEED UNKNOWN		



Friendly Mart

NC 55
 55 MPH
 2013 ADT 3,000

NC 55
 55 MPH
 2013 ADT 3,400

SIG ID 04-0528 (Two Circuit Flasher)

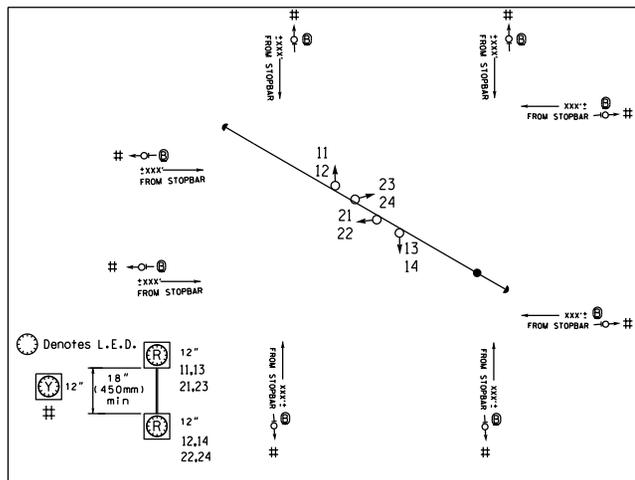
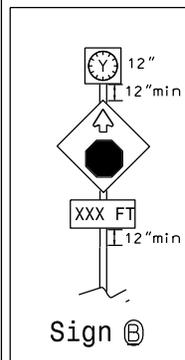
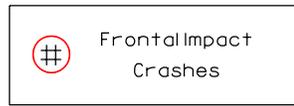


FIGURE 1



NC 111
 55 MPH
 2013 ADT 6,200



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

TRAFFIC SAFETY UNIT

Date: 6-5-2015

Prepared By: Andrew Covington, EI