

Spot Safety Project Evaluation

Project Information

Order ID: 41000030281

Project ID: 08-06-211

Location: NC 211 (Red Springs Highway) at SR 1105 (Old Wire Road)

County: Hoke

City: Antioch

Division: 8

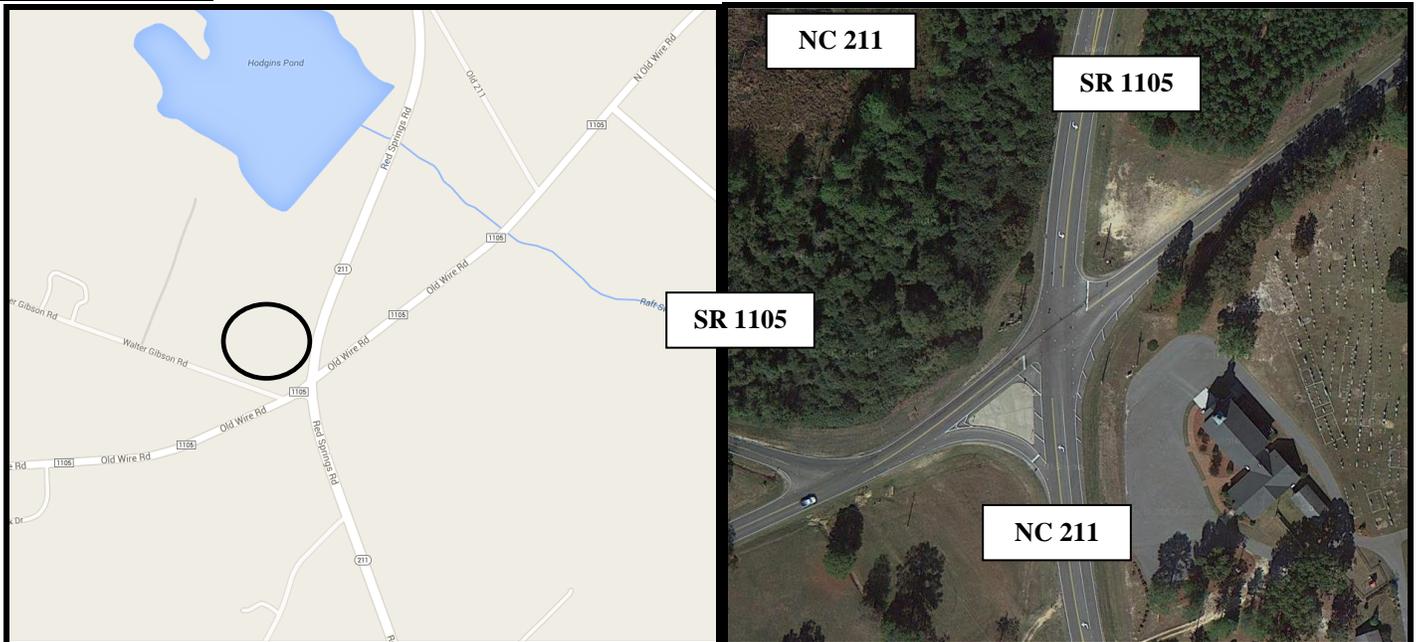
Signal ID: 08-0869

Countermeasure: Install left turn lanes on NC 211; improve sight distance with wedging and grading eastern leg of SR 1105 and additional clearing on southern leg of NC 211.

Project Completion: Between July 1, 2009 – September 30, 2009

Project Cost: \$250,000.00

Map and Aerial (from Google maps – Coordinates are 34.886142,-79.208186)



Naive Before and After Analysis

Before Period: August 1, 2004 through June 30, 2009 (4 years, 11 months)

Const. Period: July 1, 2009 through September 30, 2009 (3 months)

After Period: October 1, 2009 through August 31, 2014 (4 years, 11 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the SR 1105 (Old Wire Rd.) and NC 211 (Red Springs Hwy.) approaches.

Target Crashes: Target 1 – Frontal Impact Crashes
Target 2 – Rear End crashes on NC 211 approaches

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	16	33	106.3%
Total Severity Index	5.6	7.8	39.3%
Target 1 Crashes			
Target 1 Crashes	14	27	92.9%
Target 1 Crash Severity Index	6.3	9.0	42.9%
Target 2 Crashes			
Target 2 Crashes	1	0	-100.0%
Target 2 Crash Severity Index	1	0	-100.0%
Volume (2007, 2012)			
Volume (2007, 2012)	6,500	6,600	1.5%

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes per Year	0	0	-
Class A injury Crashes per Year	0	1	100.0%
Class B injury Crashes per Year	2	8	300.0%
Class C Injury Crashes per Year	8	12	50.0%
Property Damage Only per Year	6	12	100.0%

<u>Frontal Impact Crashes</u>	Before	After	Percent Reduction (-) Percent Increase (+)
SR 1105 Eastbound Approach (Target)	5.0	20.0	300.0%
SR 1105 Westbound Approach (Target)	8.0	7.0	-12.5%

Overall Summary Results

Total Crashes:	106.3 %	(Increase)
Total Crash Severity:	39.3 %	(Increase)
Target 1 (Frontal Impact) Crashes:	92.9 %	(Increase)
Target 1 Crash Severity:	42.9%	(Increase)
Target 2 (Rear End on NC 211) Crashes:	-100.0 %	(Reduction)
Target 2 Crash Severity:	-100.0%	(Reduction)
Volume:	1.5 %	(Increase)

Additional Information Results

Frontal Impact Crashes on SR 1105 Eastbound Approach:	300.0 %	(Increase)
Frontal Impact Crashes on SR 1105 Westbound Approach:	-12.5 %	(Reduction)

Items for Discussion/Concerns

The total crashes experienced an increase of 106.3% (16 to 33 crashes) between the before and after periods. Two target crash types were chosen for this analysis: all frontal impact crashes and rear end crashes on the NC 211 approaches. Target 1 crashes, all frontal impacts, experienced an increase of 92.9% between the before and after periods. Target 1 crash severity increased by 42.9% over the same time period. Target 2 crashes, rear end crashes along NC 211, were eliminated entirely between the before and after periods.

Frontal impact crashes while traveling eastbound on SR 1105 increased by 300.0% (5 to 20 crashes) between the before and after periods. In the before period, three of these crashes struck a vehicle that was traveling southbound on NC 211, one struck a vehicle that was traveling northbound on NC 211, and one struck a vehicle that was traveling westbound on SR 1105. In the after period, fifteen of these crashes struck a vehicle traveling southbound on NC 211 and five struck a vehicle that was traveling northbound on NC 211.

Frontal impact crashes while traveling westbound on SR 1105 decreased by 12.5% (8 to 7 crashes) between the before and after periods. In the before period, five of these crashes struck a vehicle that was traveling southbound on NC 211, two struck a vehicle that was traveling northbound on NC 211, and one struck another vehicle that was traveling eastbound on SR 1105. In the after period, three struck a vehicle that was traveling southbound on NC 211, three struck a vehicle that was traveling northbound on NC 211, and one struck another vehicle that was traveling eastbound on SR 1105.

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: Ross Oliver
Work Group/Consultant: Hatch Mott MacDonald
Date: November 12, 2014

LEGEND			
	MOVING VEHICLE		ANGLE
	PARKED VEHICLE		TURNING
	PARKING VEHICLE		BACKING
	MOVABLE OBJECT		SIDESWIPE
	HEAD ON		INJURY
	REAR END		FATALITY
	RAN OFF ROAD		9 MPH OR LESS
	DAYLIGHT CRASH		10 MPH TO 19
	NIGHT CRASH		20 MPH TO 29
	STOP SIGN		30 MPH TO 39
	ANIMAL		40 MPH TO 49
	PEDESTRIAN		50 MPH TO 59
	BICYCLE		60 MPH TO 69
	TRAIN		70 AND UP
	DRIVER AT FAULT		SPEED UNKNOWN
	DRY		
	WET		
	ICY OR SNOWY		
	Other		

SR 1105 (Old Wire Rd.)
55 mph

AADT (Year)
1900 (2007)

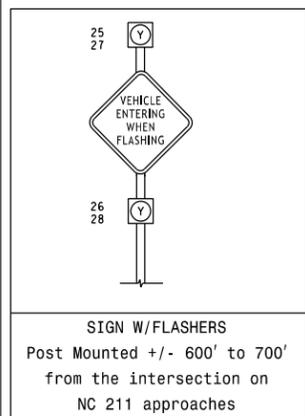
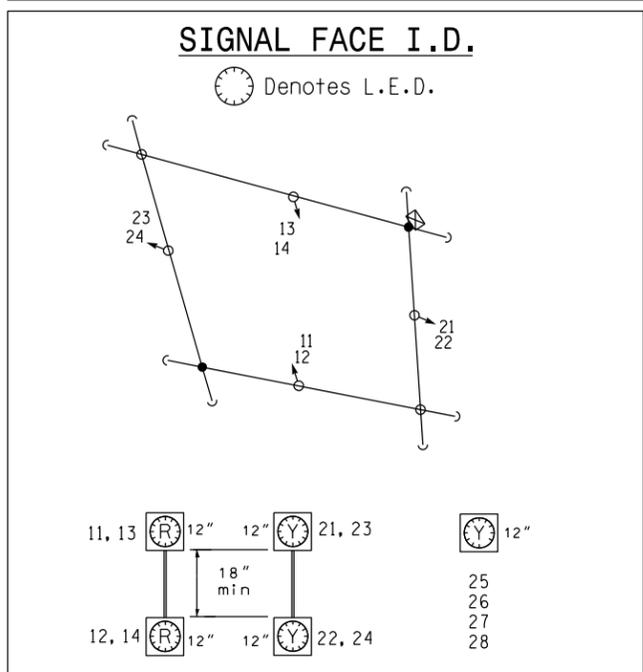
NC 211 (Red Springs Hwy.)
55 mph

AAADT (Year)
4500 (2007 est.)

SS# 08-06-211
Order# 41000030281
Hoke County
BEFORE Period
8/1/2004 - 6/30/2009



- Frontal Impact Crashes (Target 1)
- Rear End Crashes on NC 211 (Target 2)



NC 211 (Red Springs Hwy.)
55 mph
AADT (Year)
4500 (2007)

SR 1105 (Old Wire Rd.)
55 mph
AADT (Year)
2100 (2007)

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

TRAFFIC SAFETY UNIT

Date: 11/12/2014 Prepared By: R. Oliver

SR 1105 (Old Wire Rd.)
55 mph

AADT (Year)
1950 (2012 est.)

LEGEND

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

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AFTER Period
10/1/2009 - 8/31/2014

NC 211 (Red Springs Hwy.)
55 mph

AAADT (Year)
4800 (2012 est.)

NC 211 (Red Springs Hwy.)
55 mph
AADT (Year)
4800 (2012)

NC 211 (Red Springs Hwy.)
55 mph

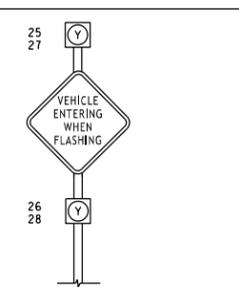
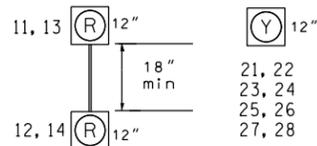
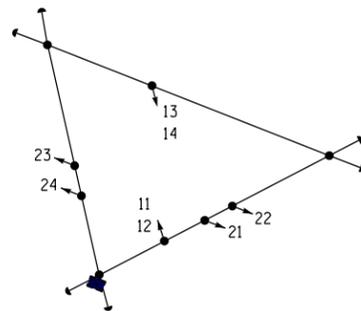
AAADT (Year)
1700 (2012 est.)



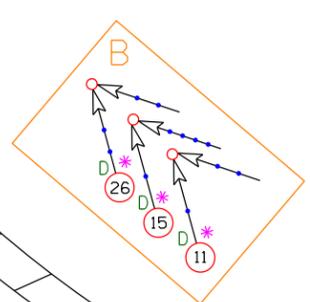
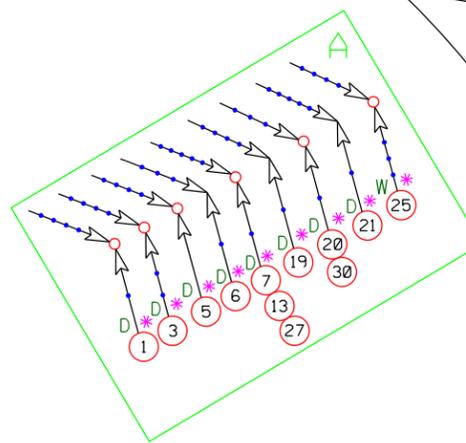
- Frontal Impact Crashes (Target 1)
- Rear End Crashes on NC 211 (Target 2)

SIGNAL FACE I.D.

Denotes L.E.D.



SIGN W/FLASHERS
Post Mounted +/- 600' to 700'
from the intersection on
NC 211 approaches



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TRAFFIC SAFETY UNIT

Date: 11/12/2014 Prepared By: R. Oliver