

# Spot Safety Project Evaluation

## Project Information

Order ID: 41000033912

Project ID: 07-10-3927

Location: US 220/NC 150 and NC 150/SR 1002 (Scalesville Road/Oak Ridge Road)

County: Guilford

City: Summerfield

Division: 7

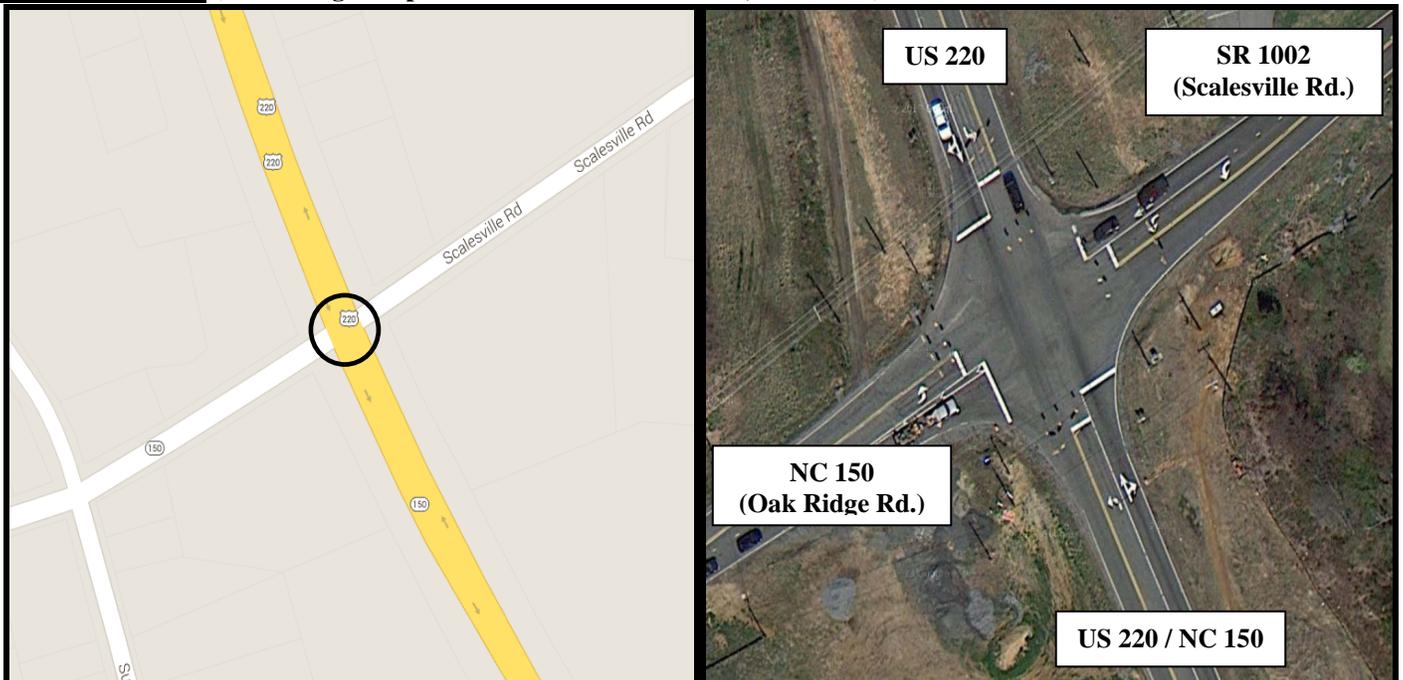
Signal ID: 07-0924

Countermeasure: Installation of flashing yellow arrows on all approaches of the existing signalized intersection.

Project Completion: August 24, 2010

Project Cost: \$17,500.00

## Map and Aerial (from Google maps – Coordinates are 36.20886,-79.904519)



## Naive Before and After Analysis

Before Period: September 1, 2005 to May 31, 2010 (4 years, 9 months)

Const. Period: June 1, 2010 to August 31, 2010 (3 months)

After Period: September 1, 2010 to May 31, 2010 (4 years, 9 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the US 220/NC 150 and NC 150/SR 1002 approaches.

Target Crashes: Left-turn, same roadway type crashes for all approaches

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	22	27	22.7%
Total Severity Index	7.80	3.20	-59.0%
<b>Target Crashes</b>			
Target Crashes	9	3	-66.7%
Target Crash Severity Index	8.40	3.50	-58.3%
<b>Volume (2008, 2013)</b>			
Volume (2008, 2013)	20,000	19,200	-4.0%

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	-
Class A injury Crashes	1	0	-100%
Class B injury Crashes	2	3	50.0%
Class C Injury Crashes	8	5	-37.5%
Property Damage Only	11	19	72.7%

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Northbound Left Turn, Same Roadway (Target)	6	1	-83.3%
Southbound Left Turn, Same Roadway (Target)	0	0	N/A
Eastbound Left Turn, Same Roadway (Target)	2	1	-50.0%
Westbound Left Turn, Same Roadway (Target)	1	1	0.0%
<b>Rear End Crashes</b>			
Rear End Crashes	3	19	533.3%
<b>Running Red Light Crashes</b>			
Running Red Light Crashes	6	4	-33.3%

## **Overall Summary Results**

Total Crashes:	22.7 %	(Increase)
Total Crash Severity:	-59.0 %	(Reduction)
Target Crashes:	-66.7 %	(Reduction)
Target Crash Severity:	-58.3 %	(Reduction)
Volume:	-4.0 %	(Reduction)

## **Items for Discussion/Concerns**

The total crashes saw an increase of 22.7% (22 to 27 crashes) between the before and after periods. The total crash severity decreased by 59.0%. Similarly, the target crashes decreased by 66.7% (9 to 3 crashes) and the target crash severity decreased by 58.3%.

The northbound approach on US 220 saw a reduction in target crashes of 83.3% (6 to 1 crashes), while the eastbound approach on NC 150 saw a reduction in target crashes of 50.0% (2 to 1 crashes). The amount of rear end type crashes increased between the before and after periods by 533.3% (3 to 19 crashes). Additionally, crashes involving red-light running experienced a slight decrease of 33.3% (6 to 4 crashes) between the before and after periods.

It should be noted that at the time of this report, the study area is a part of an ongoing, active work zone for R-2309AB which will widen US 220 to a 4-lane divided highway. Additionally, it appears that the signal head for the US 220 southbound left-turn approach was converted to a 4-section head with protected/permitted phasing in 2013 at the study intersection.

## **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: July 24, 2015

SS# 07-10-3927  
 Order# 41000033912  
 Guilford County  
 BEFORE Period  
 9/1/2005 - 5/31/2010

US 220  
 55 MPH

AADT (Year)  
 13000 (2008 est.)

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
			30 MPH TO 39
			40 MPH TO 49
			50 MPH TO 59
			60 MPH TO 69
			70 AND UP
			SPEED UNKNOWN
	STOP		A ANIMAL
	P PEDESTRIAN		B BICYCLE
	T TRAIN		* DRIVER AT FAULT
	D DRY		W WET
	I ICY OR SNOWY		O Other

NC 150 (Oak Ridge Rd.)  
 35 MPH

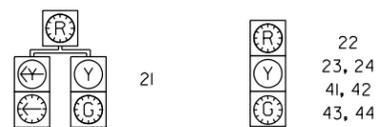
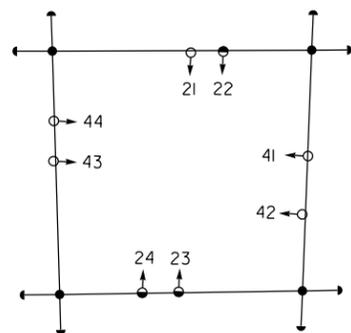
AADT (Year)  
 7950 (2008 est.)

SR 1002 (Scalesville Rd.)  
 45 MPH

AADT (Year)  
 4000 (2008 est.)

**SIGNAL FACE I.D.**

Denotes L.E.D.



US 220 / NC 150  
 55 MPH

AADT (Year)  
 15000 (2008 est.)

Target Crashes



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

**TRAFFIC SAFETY UNIT**

Date: 7/24/2015

Prepared By: R. Oliver



SS# 07-10-3927  
 Order# 41000033912  
 Guilford County  
 AFTER Period  
 9/1/2010 - 5/31/2015

US 220  
 55 MPH

AADT (Year)  
 13000 (2013)

NC 150 (Oak Ridge Rd.)  
 35 MPH

AADT (Year)  
 7400 (2013)

SR 1002 (Scalesville Rd.)  
 45 MPH

AADT (Year)  
 3900 (2013)

US 220 / NC 150  
 55 MPH

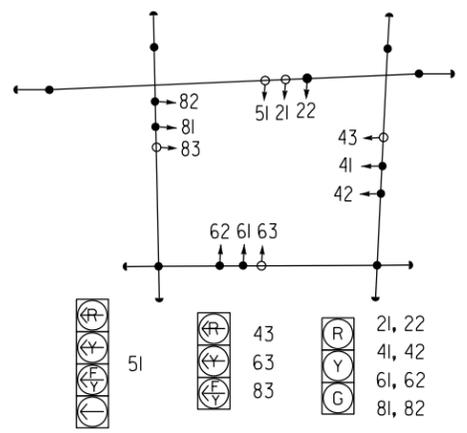
AADT (Year)  
 14000 (2013)

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
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	D DRY		W WET
	I ICY OR SNOWY		O Other

**SIGNAL FACE I.D.**

All Heads L.E.D.

\*Signal head 63 modified to 4-section head protected/permitted phasing in 2013.



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Target Crashes

