

Spot Safety Project Evaluation

Project Information

Order ID: 41000030283

Project ID: 03-07-227S

Location: NC 53 (Western Blvd.) and Circuit Lane

County: Onslow

City: Jacksonville

Division: 3

Signal ID: 03-0750

Countermeasure: Install offset left turn lanes and left turn flashing yellow arrows along NC 53.

Project Completion: Between July 1, 2009 – March 30, 2010

Project Cost: \$322,000.00

Map and Aerial (from Google maps – Coordinates are 34.782351,-77.397587)



Naive Before and After Analysis

Before Period: February 1, 2005 through June 30, 2009 (4 years, 5 months)

Const. Period: July 1, 2009 through March 30, 2010 (9 months)

After Period: April 1, 2010 through August 31, 2014 (4 years, 5 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the NC 53 and Circuit Lane approaches.

Target Crashes: Target crashes were considered to be left-turn, same roadway crashes on the NC 53 approaches.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	75	58	-22.7%
Total Severity Index	3.98	3.55	-10.8%
Target Crashes	34	7	-79.4%
Target Crash Severity Index	3.61	3.11	-13.9%
Volume (2007, 2012)	37,700	44,700	18.6%

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0.0	0.0	N/A
Class A injury Crashes	1.0	0.0	-100.0%
Class B injury Crashes	5.0	6.0	20.0%
Class C Injury Crashes	15.0	14.0	-6.7%
Property Damage Only	54.0	38.0	-29.6%

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
NB NC 53 Left-Turn Same Roadway (Target)	22	3	-86.4%
SB NC 53 Left-Turn Same Roadway (Target)	12	2	-83.3%
All Left-Turn Same Roadway	36	10	-72.2%
Angle	2	6	200.0%
All Rear End Crashes	25	26	4.0%
NB Rear End Crashes	7	4	-42.9%
SB Rear End Crashes	12	14	16.7%

Overall Summary Results

Total Crashes:	-22.7 %	(reduction)
Total Crash Severity:	-10.8 %	(reduction)
Target Crashes:	-79.4 %	(reduction)
Target Crash Severity:	-13.9 %	(reduction)
Volume:	+18.6 %	(increase)

Additional Summary Results

Northbound NC 53 Left-Turn Same Roadway (Target):	-86.4 %	(reduction)
Southbound NC 53 Left-Turn Same Roadway (Target):	-83.3 %	(reduction)
All Left-Turn Same Roadway Crashes:	-72.2 %	(reduction)
Angle Crashes:	+200.0 %	(increase)
All Rear End Crashes:	+4.0 %	(increase)
Northbound Rear End Crashes:	-42.9 %	(reduction)
Southbound Rear End Crashes:	+16.7 %	(increase)

Items for Discussion/Concerns

The total crashes experienced a reduction of 22.7% (75 to 58 crashes) between the before and after periods, while the target crashes experienced a more significant reduction of 79.4% (34 to 7 crashes). Both the total crash severity and target crash severity experienced similar reductions of 10.8% and 13.9%, respectively, between the before and after periods.

Left-turn same roadway crashes (target crashes) experienced similar reductions on each of the NC 53 approaches, with an 86.4% reduction on the northbound approach and an 83.3% reduction on the southbound approach.

Rear end crashes for the entire intersection experienced a slight increase of 4.0% (25 to 26 crashes) between the before and after periods; however, the northbound approach experienced a reduction of 42.9% (7 to 4 crashes) and the southbound approach experienced an increase of 16.7% (12 to 14 crashes) during those periods.

Angle crashes for the entire intersection increased 200% (2 to 6 crashes) between the before and after periods.

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: R. Travis Braswell, PE, PTOE

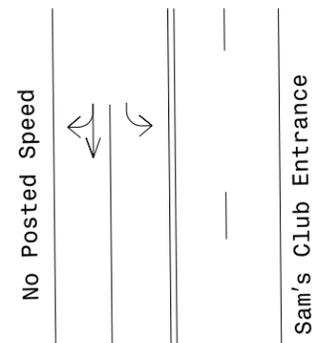
Work Group/Consultant: Hatch Mott MacDonald

Date: November 26, 2014

SS# 03-07-227S
 Order# 41000030283
 Onslow County

ADT (Year)
 6,200 (2007 est.)
 6,200 (2012 est.)

Sam's Club



LEGEND

	MOVING VEHICLE		ANGLE		9 MPH OR LESS		A ANIMAL
	PARKED VEHICLE		TURNING		10 MPH TO 19		P PEDESTRIAN
	PARKING 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 ICY OR SNOWY
	NIGHT CRASH				SPEED UNKNOWN		O Other

ADT (Year)
 32,000 (2007 est.)
 39,590 (2012 est.)

Southbound NC 53
 Rear End Crashes
 Before 12
 After 14

Northbound NC 53
 Rear End Crashes
 Before 7
 After 4

NC 53 (Western Boulevard)

45 Mph

Southbound NC 53
 Left-turn, same roadway crashes
 Before 12
 After 2

Angle Crashes
 Before 2
 After 6

Northbound NC 53
 Left-turn, same roadway crashes
 Before 22
 After 3

45 Mph

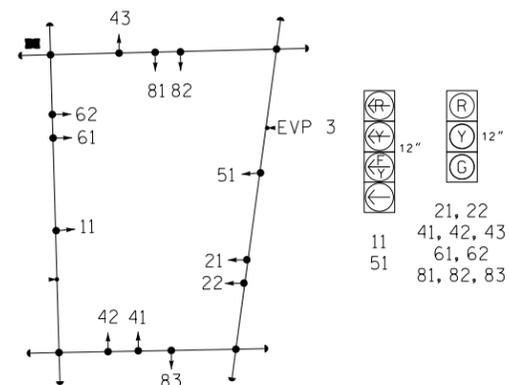
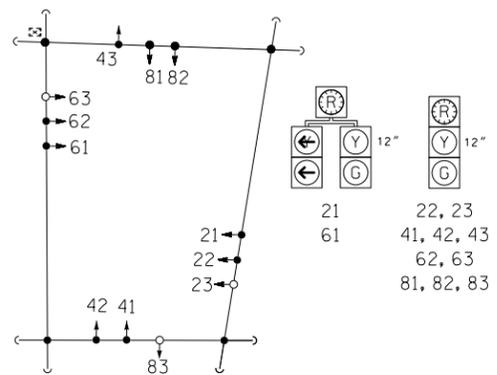
ADT (Year)
 32,000 (2007 est.)
 39,590 (2012 est.)

NC 53 (Western Boulevard)

SIGNAL I.D. 03-0750 (5 Phase Fully Actuated w/ EM Preemption)

Before (2/1/2005 - 6/30/2009)

After (4/1/2010 - 8/31/2014)



ADT (Year)
 5,200 (2007 est.)
 4,100 (2012 est.)

Circuit Lane

No Posted Speed

McDonald's

Target Crashes



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

TRAFFIC SAFETY UNIT

Date: 10/27/2014

Prepared By: T. Braswell

