

Spot Safety Project Evaluation

Project Information

Order ID: 41000029849

Project ID: 12-08-204

Location: NC 16 at I-40 Westbound On/Off Ramps (Exit 132)

County: Catawba

City: Conover

Division: 12

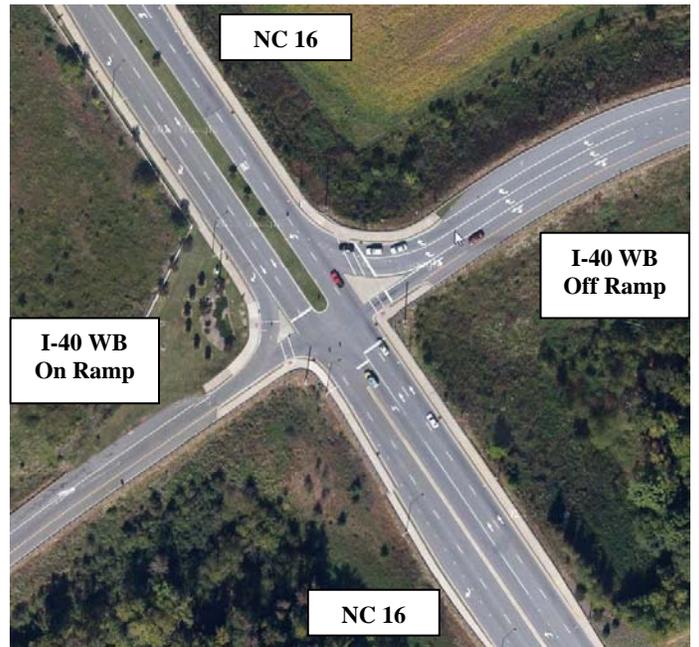
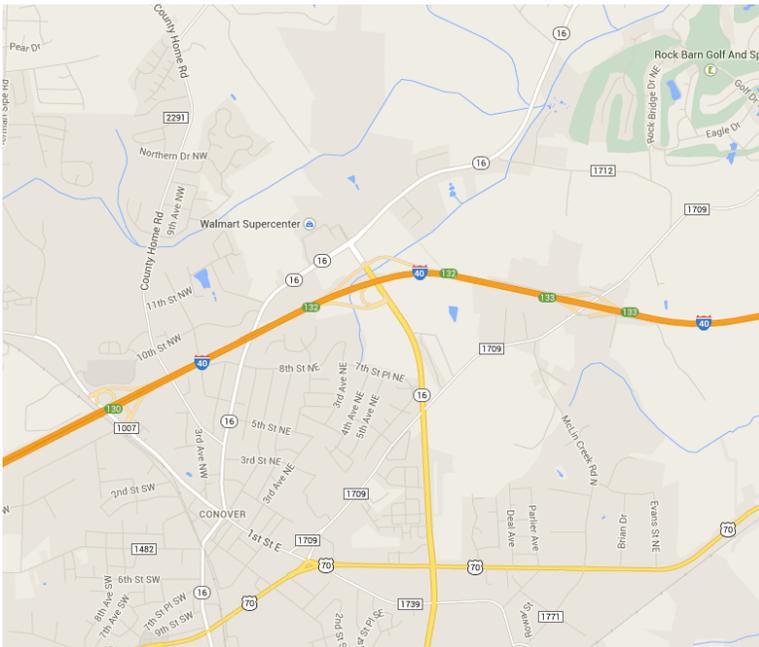
Signal ID: 12-1627

Countermeasure: Change the left turn for northbound NC 16 from permissive to protected/permissive

Project Completion: April 22, 2009

Project Cost: \$15,000

Map and Image (from Google Maps – Coordinates are 35.724418,-81.206034)



Naive Before and After Analysis

Before Period: April 1, 2004 through February 28, 2009 (4.92 years)

Const. Period: March 1, 2009 through May 31, 2009

After Period: June 1, 2009 through April 30, 2014 (4.92 years)

Analysis Criteria: Treatment data consists of all crashes within 150 feet of the subject intersection.

Target Crashes: Left Turn Same Roadway (LTSR) Crashes involving left turners on the Northbound NC 16 approach are the target crashes for the applied countermeasure.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	27	42	+ 55.6 %
Total Severity Index	4.56	4.57	+ 0.2 %
Target Crashes	7	9	+ 28.6 %
Target Crash Severity Index	5.23	4.29	- 18.0 %
Volume (2006, 2011)	11,800	17,200	+ 45.8 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	1	N/A
Class A injury Crashes	0	0	N/A
Class B injury Crashes	4	0	- 100.0 %
Class C Injury Crashes	9	10	+ 11.1 %
Property Damage Only	14	31	+ 121.4 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Rear End Crashes	7	17	+ 142.9 %

Overall Summary Results

Total Crashes:	+ 56 %	(increase)
Total Crash Severity:	0 %	(no change)
Target Crashes:	+ 29 %	(increase)
Target Crash Severity:	- 18 %	(reduction)
Volume:	+ 46 %	(increase)

Additional Summary Results

Rear End Crashes:	+ 143 %	(increase)
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Items for Discussion/Concerns

Total crashes and target crashes increased at the study intersection. The crash type with the largest increase in frequency was rear end crashes, which increased by 143%. Increases in crashes may be influenced by the significant increase in the intersection volume, which increased by nearly 50% from the before to the after period.

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: Carrie L. Simpson, PE
Work Group/Consultant: NCDOT - Safety Evaluation Group
Date: October 2, 2014

SS #12-08-204
 Order # 41000029849
 CATAWBA County
 Before Period
 4/1/2004 - 02/28/2009

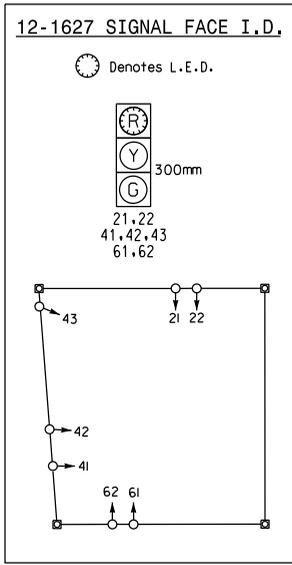
NC 16 (THORNBURG DR)
 45 MPH
 ADT (Year)
 8,900 (2006)

I-40 WB RAMPS
 65 MPH - Mainline
 ADT (Year)
 5,500 (2006)

I-40 WB RAMPS
 65 MPH - Mainline
 ADT (Year)
 1,400 (2006)

LEGEND

	MOVING VEHICLE		ANGLE		9 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		ANIMAL
	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		INJURY		50 MPH TO 59		ICY OR SNOWY
	REAR END		FATALITY		60 MPH TO 69		ONLY
	RAN OFF ROAD				70 AND UP		
					SPEED UNKNOWN		



NC 16 (THORNBURG DR)
 45 MPH
 ADT (Year)
 7,700 (2006)

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

TRAFFIC SAFETY UNIT

Date: 06-27-2014

Prepared By: Troy S Finn

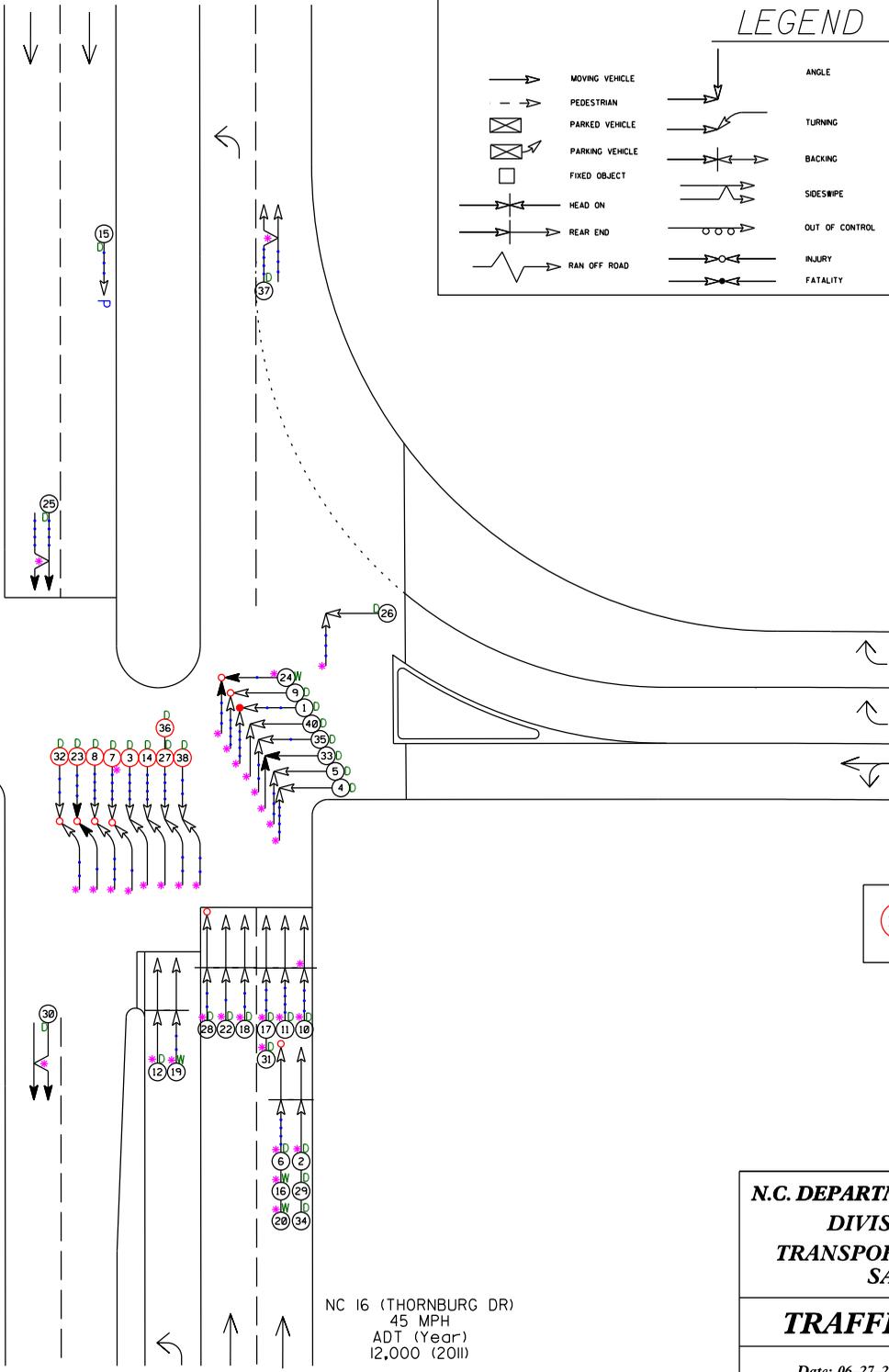
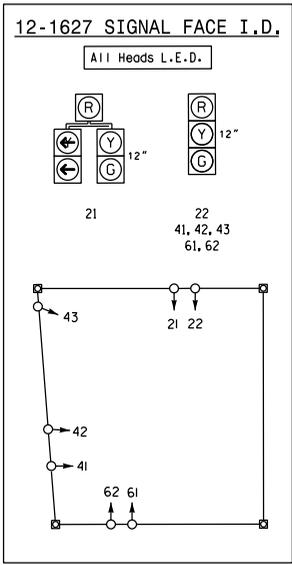
SS #12-08-204
 Order # 41000029849
 CATAWBA County
 After Period
 6/1/2009 - 04/30/2014

NC 16 (THORNBURG DR)
 45 MPH
 ADT (Year)
 16,000 (2011)

I-40 WB RAMPS
 65 MPH - Mainline
 ADT (Year)
 5,000 (2011)

I-40 WB RAMPS
 65 MPH - Mainline
 ADT (Year)
 1,300 (2011)

LEGEND							
	MOVING VEHICLE		ANGLE		9 MPH OR LESS	P	PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19	A	ANIMAL
	PARKED VEHICLE		BACKING		20 MPH TO 29	*	DRIVER AT FAULT
	PARKING VEHICLE		SIDESWIPE		30 MPH TO 39	D	DRY
	FIXED OBJECT		OUT OF CONTROL		40 MPH TO 49	W	WET
	HEAD ON		INJURY		50 MPH TO 59	I	ICY OR SNOWY
	REAR END		FATALITY		60 MPH TO	O	ONLY
	RAN OFF ROAD				70 AND UP		



NC 16 (THORNBURG DR)
 45 MPH
 ADT (Year)
 12,000 (2011)

N.C. DEPARTMENT of TRANSPORTATION
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TRAFFIC SAFETY UNIT

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