

Spot Safety Project Evaluation

Project Information

Order ID: 41000028588

Project ID: 01-09-204

Location: NC 11 at NC 561

County: Hertford

City: N/A

Division: 1

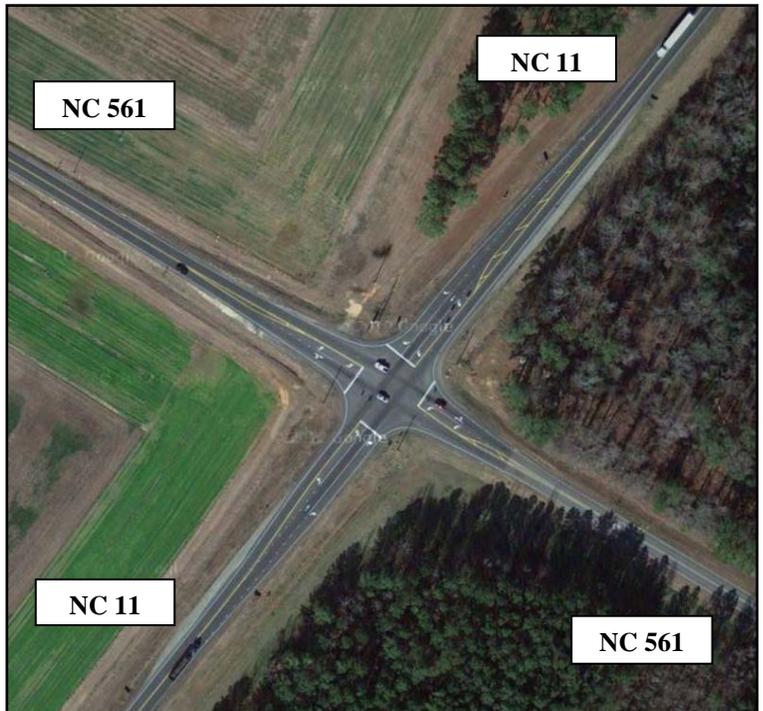
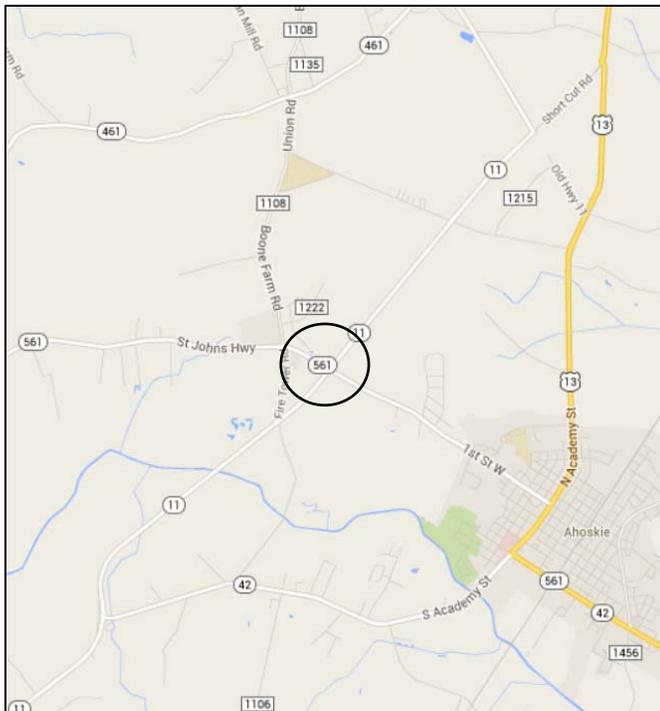
Signal ID: 01-0422

Countermeasure: Upgrade existing traffic signal for Dynamic All-Red Interval Extension on NC 11 approaches. Note other changes were made at this time, including double red signal indication on signal heads, updating existing “Prepare to Stop” LED signs on NC 11, and implementing red rest operation.

Project Completion: February 16, 2011

Project Cost: \$115,000

Map and Aerial (from Google Maps – Coordinates are 36.304275,-77.018993)



Naive Before and After Analysis

Before Period: February 1, 2008 through January 31, 2011 (3 years)

Const. Period: February 1, 2011 through February 28, 2011

After Period: March 1, 2011 through February 28, 2014 (3 years)

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

Target Crashes: Crashes involving red light runners on both NC 11 approaches

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	8	6	- 25.0 %
Total Severity Index	23.65	4.70	- 80.1 %
Target Crashes	5	0	-100.0%
Target Crash Severity Index	35.76	0	-100.0%
Volume (2009, 2012)	9,200	10,400	13.0 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	1	0	-100.0%
Class A injury Crashes	1	0	-100.0%
Class B injury Crashes	4	0	-100.0%
Class C Injury Crashes	0	3	N/A
Property Damage Only	2	3	50.0 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Northbound NC 11 Target Crashes	3	0	-100.0%
Southbound NC 11 Target Crashes	2	0	-100.0%
NC 561 Rear End Crashes	1	4	300.0%

Overall Summary Results

Total Crashes:	- 25 %	(reduction)
Total Crash Severity:	- 80 %	(reduction)
Target Crashes:	- 100 %	(reduction)
Target Crash Severity:	- 100 %	(reduction)
Volume:	13.0 %	(increase)

Additional Summary Results

NC 561 Rear End Crashes:	300 %	(increase)
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Items for Discussion/Concerns

The intersection experienced an elimination of Target Crashes on NC 11 related to red light running (5 to 0 crashes). The intersection also experienced an elimination of Fatal, Class-A Injury and Class-B Injury Crashes (6 to 0 crashes).

The reduction in crashes may not be attributed solely to the implementation of the dynamic all-red interval extension due to other changes made to the signal at this time.

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: April 14, 2014

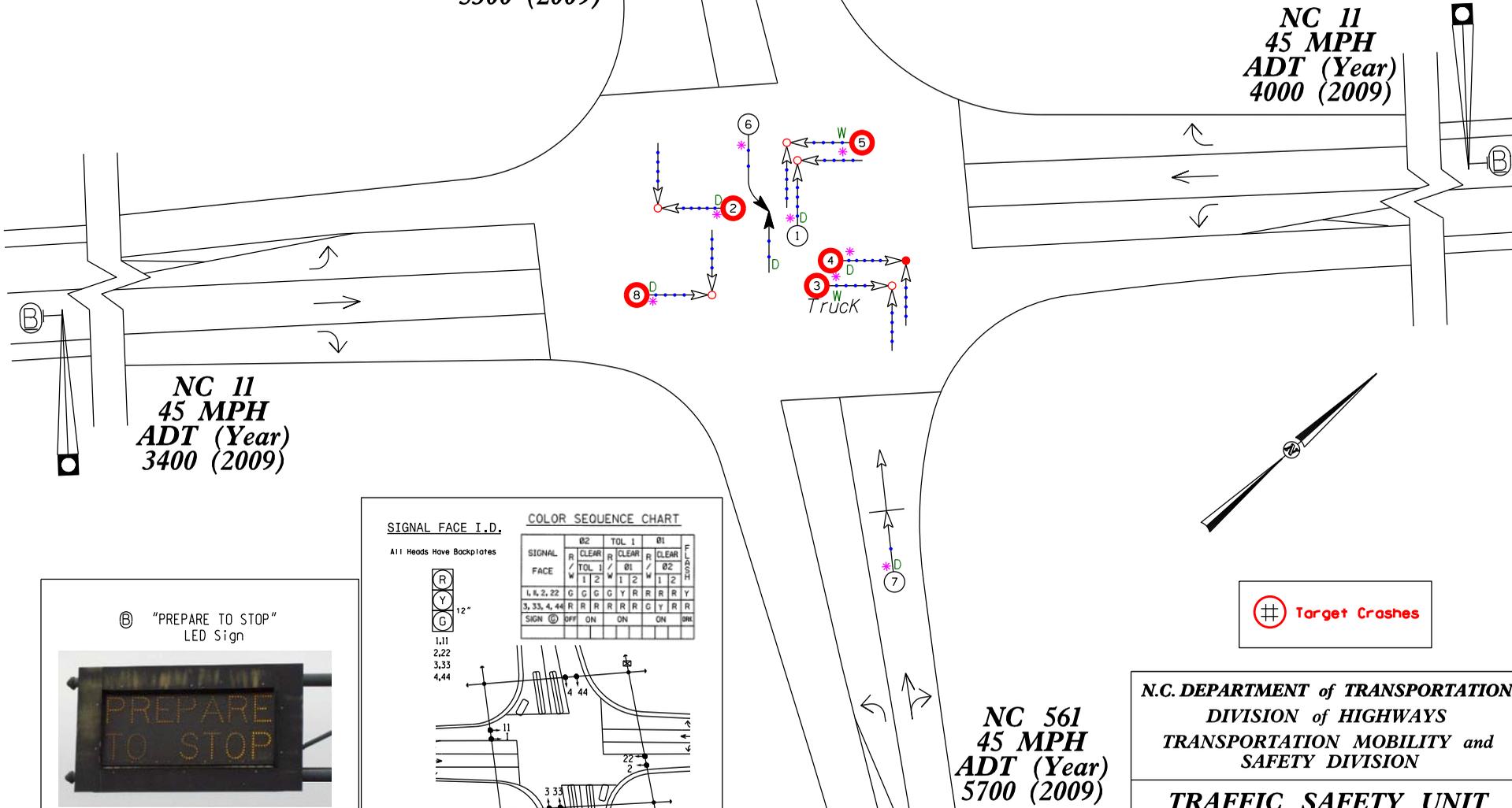
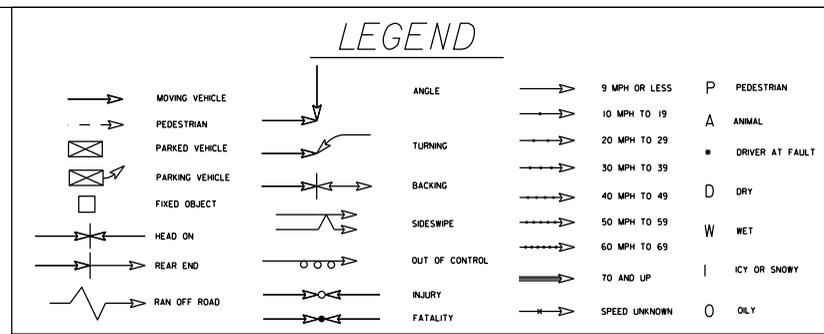
SS #01-09-204
Order # 4100028588
Hertford County
BEFORE Period
2/1/2008 - 1/31/2011

NC 561
45 MPH
ADT (Year)
5300 (2009)

NC 11
45 MPH
ADT (Year)
4000 (2009)

NC 11
45 MPH
ADT (Year)
3400 (2009)

NC 561
45 MPH
ADT (Year)
5700 (2009)



SIGNAL FACE I.D.
 All Heads Have Backplates

SIGNAL		TOL 1		TOL 2		TOL 3	
FACE	TYPE	FACE	TYPE	FACE	TYPE	FACE	TYPE
L, L, 2, 22	G	G	G	Y	R	R	R
3, 33, 4, 44	R	R	R	R	R	G	Y
SIGN	OFF	ON	ON	ON	ON	ON	ON



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

TRAFFIC SAFETY UNIT

Date: 4/10/2014 Prepared By: C. Simpson

SS #01-09-204
Order # 41000028588
Hertford County
AFTER Period
3/2011 - 2/28/2014

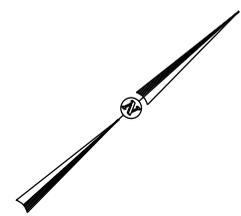
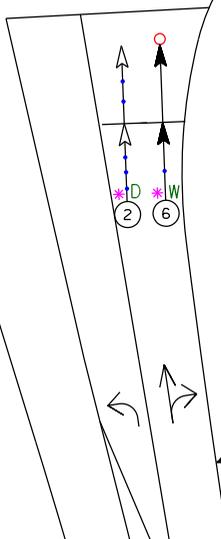
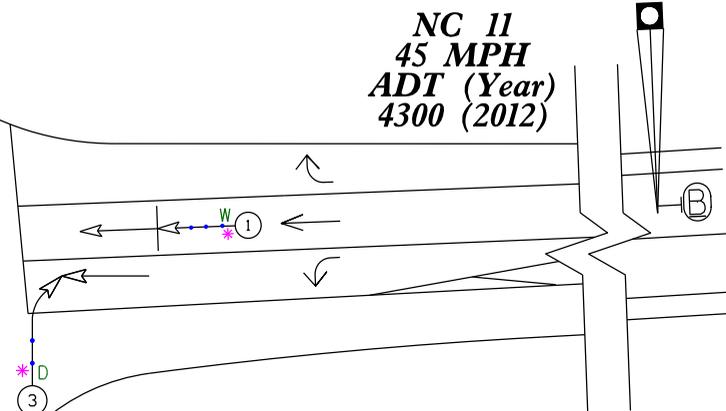
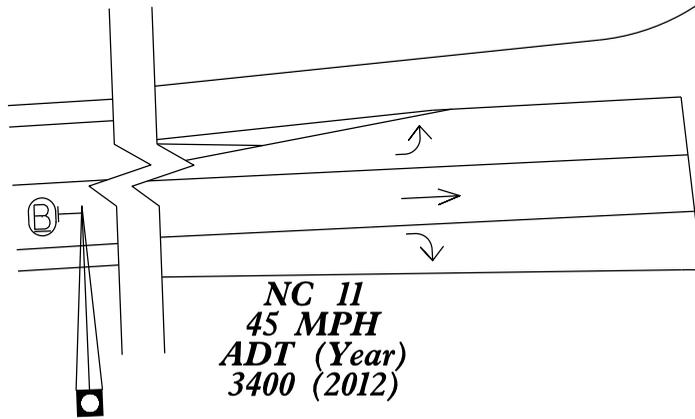
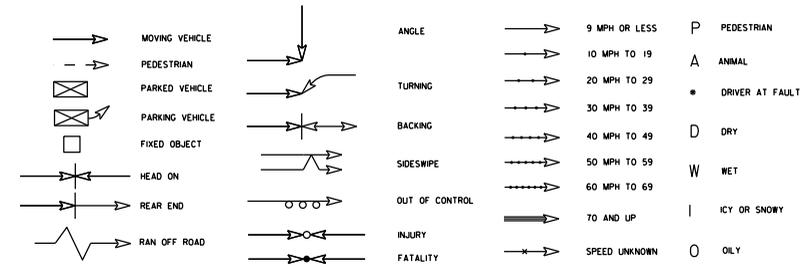
NC 561
45 MPH
ADT (Year)
6000 (2012)

NC 11
45 MPH
ADT (Year)
4300 (2012)

NC 11
45 MPH
ADT (Year)
3400 (2012)

NC 561
45 MPH
ADT (Year)
7100 (2012)

LEGEND



Target Crashes

SIGNAL FACE I.D.
 All Heads L.E.D.
 Install Backplates on all Heads

SIGNAL FACE	PHASE			
	THRU	THRU	THRU	THRU
21,22	G	R	R	R
41,42	R	G	R	R
61,62	G	R	R	R
81,82	R	G	R	R
Sign "B"	OFF	ON	ON	ON



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TRAFFIC SAFETY UNIT

Date: 4/10/2014

Prepared By: C. Simpson