

Spot Safety Project Evaluation

Project Information

Order ID: 41000028045
Project ID: 08-06-208
Location: US 401 at SR 1418 (Lindsey Road)
County: Hoke
City: Raeford
Division: 8
Signal ID: 08-0444
Countermeasure: Install traffic signal and construct right turn lane on SR 1418
Project Completion: Between May 1, 2007 and April 30, 2008
Project Cost: \$103,500.00

Map and Aerial (from Google Maps – Coordinates are 35.03178,-79.092196)



Naive Before and After Analysis

- Before Period: June 1, 2001 through April 30, 2007 (4 years, 11 months)
- Const. Period: May 1, 2007 through April 30, 2008
- After Period: May 1, 2008 through March 31, 2014 (4 years, 11 months)
- Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the US 401 and SR 1418 approaches, including the mini storage facility driveway on the northern side of US 401.
- Target Crashes: Frontal Impact crashes including:
- Left-turn, same roadway (LTSR)
 - Left-turn, different roadways (LTDR)
 - Right-turn, same roadway
 - Right-turn, different roadways
 - Head-on
 - Angle

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	52	63	21.2%
Total Severity Index	5.55	5.84	5.2%
Target Crashes	32	34	6.3%
Target Crash Severity Index	6.55	7.15	9.1%
Volume (2004, 2011)	25,100	35,900	43.0%

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	N/A
Class A injury Crashes	0	1	N/A
Class B injury Crashes	4	6	50.0%
Class C Injury Crashes	28	25	-10.7%
Property Damage Only	20	31	55.0%

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Eastbound US 401 LTSR (Target)	0	2	N/A
Westbound US 401 LTSR (Target)	3	18	500.0%
Northbound SR 1418 LTDR (Target)	17	5	-70.6%
Rear End Crashes	9	23	155.6%

Overall Summary Results

Total Crashes:	+21.2 %	(increase)
Total Crash Severity:	+5.2 %	(increase)
Target Crashes:	+6.3 %	(increase)
Target Crash Severity:	+9.1 %	(increase)
Volume:	+43 %	(increase)

Additional Summary Results

Westbound US 401 LTSR (Target):	+500 %	(increase)
Northbound SR 1418 LTDR (Target):	-70.6 %	(reduction)
Rear End Crashes:	+155.6 %	(increase)

Items for Discussion/Concerns

Total crashes experienced an increase of 21.2 % (52 to 63 crashes) and the Target crashes experienced a slight increase of 6.3% (32 to 34 crashes) between the before and after periods.

There was a 500% increase in westbound US 401 left-turn, same roadway crashes between the before and after periods (3 to 18 crashes), while crashes involving northbound SR 1418 vehicles and eastbound US 401 vehicles decreased by 70.6% between the before and after periods (17 to 5 crashes).

Rear End Crashes experienced an increase of 155.6% between the before and after periods (9 to 23 crashes).

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: May 30, 2014

SS# 08-06-208
 Order# 41000028045
 Hoke County
 BEFORE Period
 6/1/2001 - 4/30/2007

AADT (Year)
 50 (2004 est.)

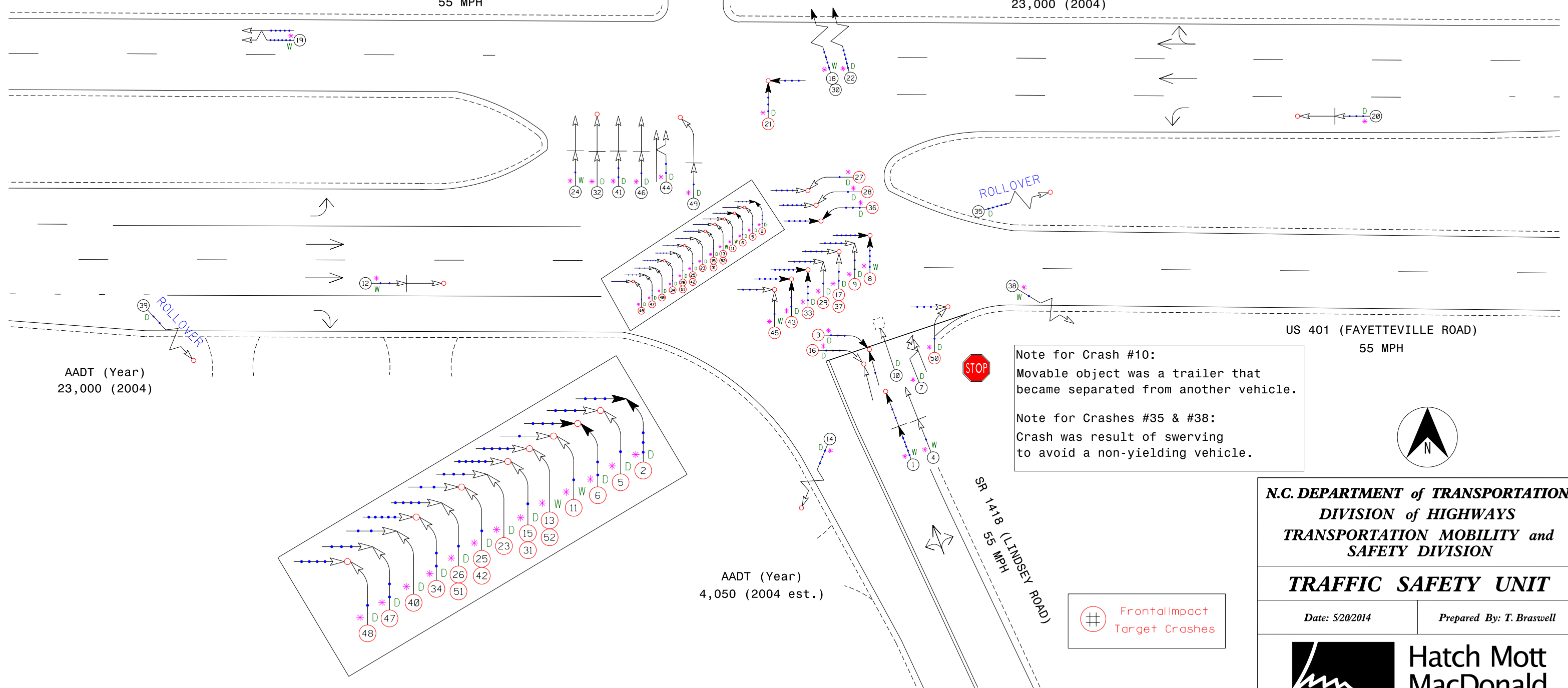
Private Driveway

US 401 (FAYETTEVILLE ROAD)
 55 MPH

AADT (Year)
 23,000 (2004)

LEGEND

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



Note for Crash #10:
 Movable object was a trailer that became separated from another vehicle.

Note for Crashes #35 & #38:
 Crash was result of swerving to avoid a non-yielding vehicle.

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

TRAFFIC SAFETY UNIT

Date: 5/20/2014 Prepared By: T. Braswell



⊕ Frontal Impact
 ⊕ Target Crashes

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 Order# 41000028045
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 AFTER Period
 5/1/2008 - 3/31/2014

AADT (Year)
 150 (2011 est.)

Mini Storage Driveway

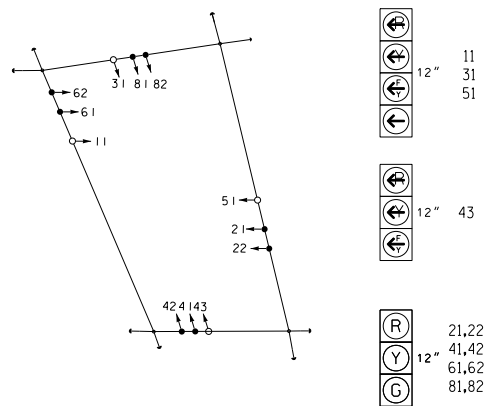
US 401 (FAYETTEVILLE ROAD)
 55 MPH

AADT (Year)
 32,000 (2011)

AADT (Year)
 32,000 (2011)

US 401 (FAYETTEVILLE ROAD)
 55 MPH

SIGNAL I.D. 08-0444
 5 Phase Actuated Isolated



Note for Crash #3:
 Parked vehicle opened passenger door while second vehicle approached intersection.

Frontal Impact
 Target Crashes

AADT (Year)
 7,700 (2011)

SR 1418 (LINSEY ROAD)
 55 MPH

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						O Other



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Date: 5/21/2014

Prepared By: T. Braswell

