

Spot Safety Project Evaluation

Project Information

Order ID: 41000028048

Project ID: 11-07-208

Location: US 421 at SR 1514 (Bamboo Road)

County: Watauga

City: Boone

Division: 11

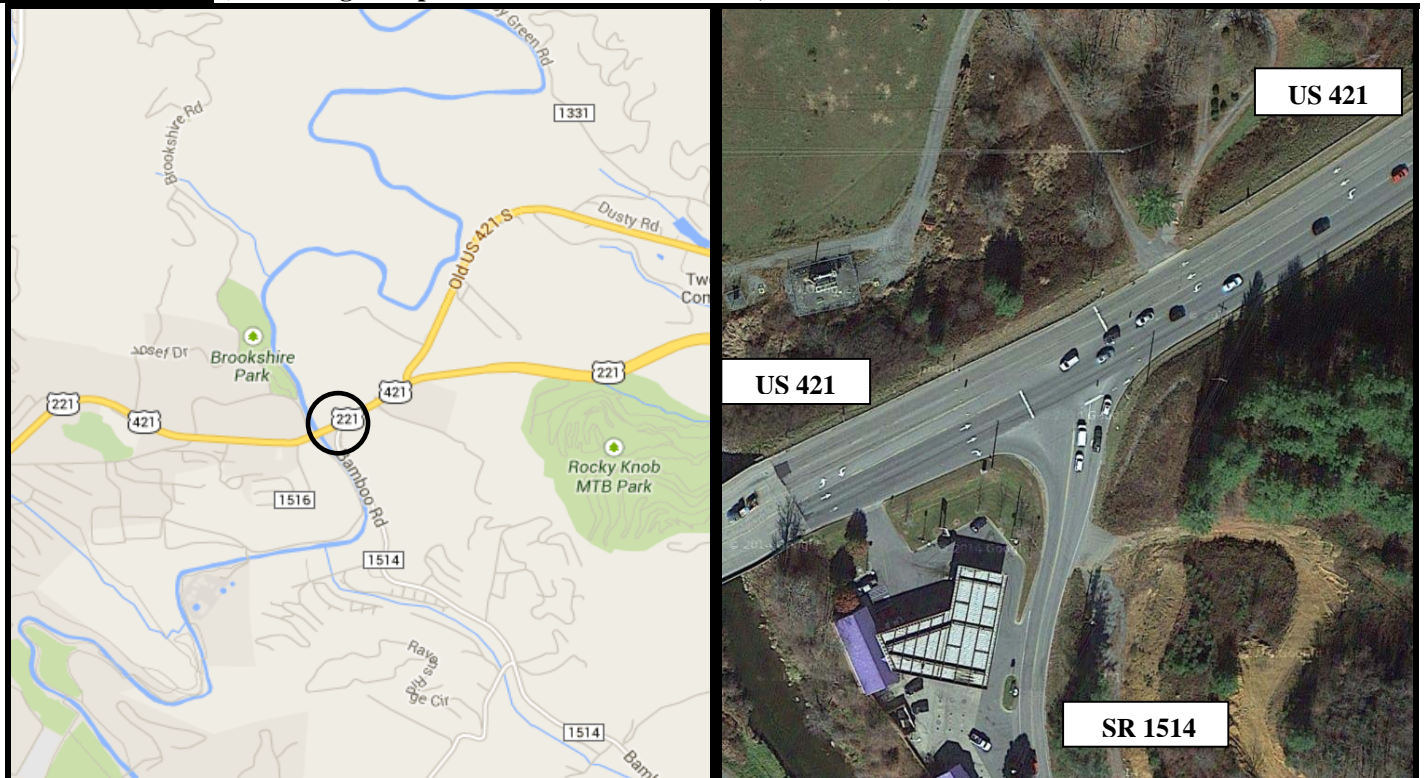
Signal ID: 11-1055

Countermeasure: Revise signal phasing to provide flashing yellow arrow display for northwest bound US 421

Project Completion: June 10, 2008

Project Cost: \$15,000.00

Map and Aerial (from Google Maps – Coordinates are 36.22108,-81.638932)



Naive Before and After Analysis

Before Period: July 1, 2002 through March 31, 2008 (5 years, 9 months)

Const. Period: April 1, 2008 through June 30, 2008

After Period: July 1, 2008 through March 31, 2014 (5 years, 9 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the US 421 at SR 1514 approaches.

Target Crashes: Northwest bound left-turn same roadway crashes on US 421.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	54	48	-11.1%
Total Severity Index	5.6	4.6	-17.5%
Target Crashes	13	12	-7.7%
Target Crash Severity Index	12.5	10.4	-17.0%
Volume (2006, 2010)	26,000	28,100	+8.1%

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	1	0	-100.0%
Class A injury Crashes	0	1	N/A
Class B injury Crashes	6	6	0.0%
Class C Injury Crashes	17	7	-58.8%
Property Damage Only	30	34	+13.3%

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Frontal Impact Crashes	26	17	-34.6%
Rear End Crashes and Side Swipe Same Direction	23	26	+13.0%
Gas Station Driveway to US 421 Crashes	8	4	-50.0%

Overall Summary Results

Total Crashes:	-11.1 %	(reduction)
Total Crash Severity:	-17.5 %	(reduction)
Target Crashes:	-7.7 %	(reduction)
Target Crash Severity:	-17.0 %	(reduction)
Volume:	+8.1 %	(increase)

Additional Summary Results

Frontal Impact Crashes:	-34.6 %	(reduction)
Rear End and Side Swipe: Same Direction Crashes:	+13.0 %	(increase)
Gas Station Driveway Crashes:	-50.0 %	(reduction)

Items for Discussion/Concerns

Total Crashes experienced a decrease of 11.1% between the before and after periods and the Target Crashes experienced a decrease of 7.7 %.

The Total Crash Severity experienced a decrease of 17.5% between the before and after periods and the Target Crash Severity experienced a 17.0% decrease.

Frontal Impact Crashes experienced a 34.6% decrease between the before and after periods and crashes at the gas station driveway saw a 50% decrease. All Rear End and Side Swipe Same Direction type crashes experienced a 13.0% increase in the study area.

Data Prepared For

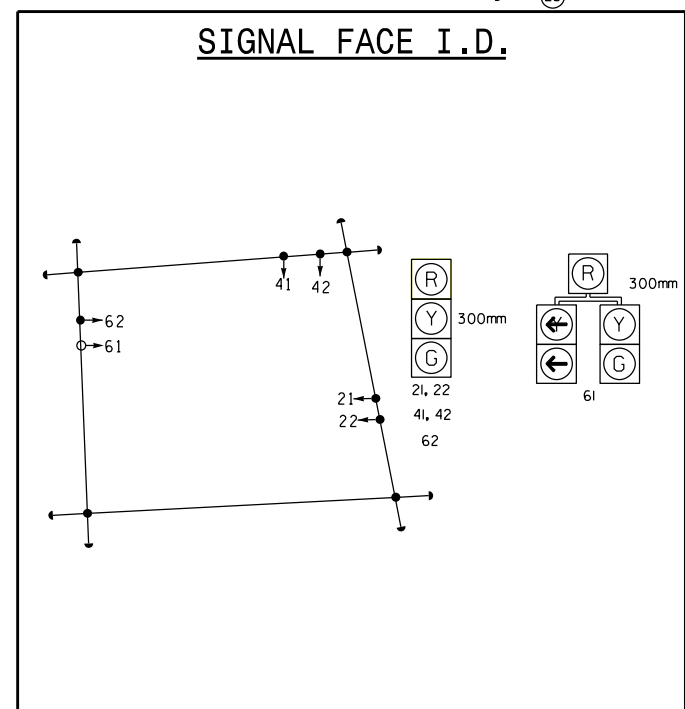
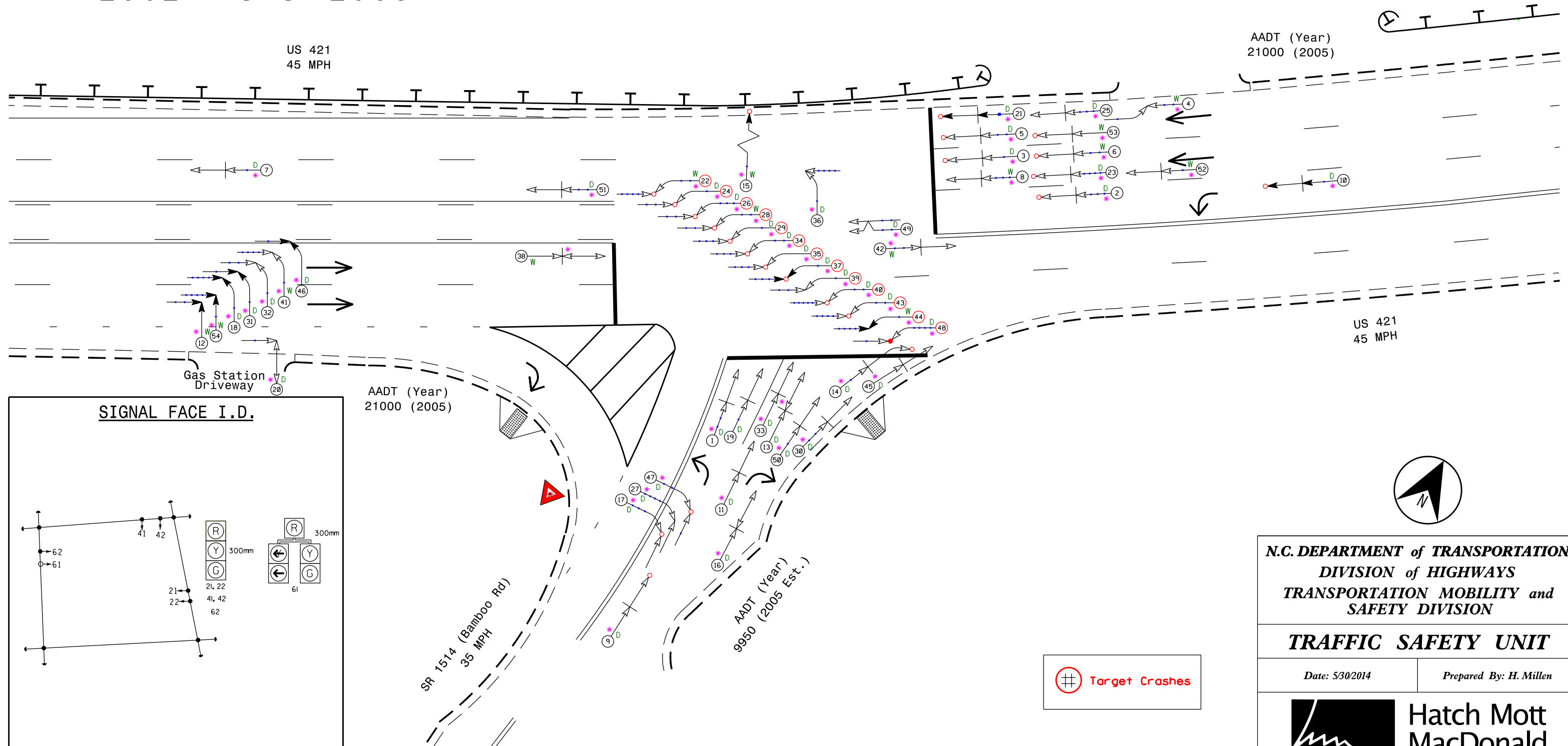
The Traffic Safety Unit *of the*
Transportation Mobility and Safety Division *of the*
Division of Highways *of the*
North Carolina Department of Transportation

Data Prepared By

Principal Investigator: Hillary Millen, EI
Work Group/Consultant: Hatch Mott MacDonald
Date: 6/9/2014

SS# II-07-208
 Order #41000028048
 Watauga County
 BEFORE Period
 7/1/2002 - 3/31/2008

LEGEND	
	MOVING VEHICLE
	PARKED VEHICLE
	PARKING VEHICLE
	MOVABLE OBJECT
	HEAD ON
	REAR END
	RAN OFF ROAD
	DAYLIGHT CRASH
	NIGHT CRASH
	ANGLE
	TURNING
	BACKING
	SIDESWIPE
	INJURY
	FATALITY
	9 MPH OR LESS
	10 MPH TO 19
	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
	YIELD SIGN
	ANIMAL
	PEDESTRIAN
	BICYCLE
	TRAIN
	DRIVER AT FAULT
	DRY
	WET
	ICY OR SNOWY
	Other



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

TRAFFIC SAFETY UNIT

Date: 5/30/2014 Prepared By: H. Millen



SS# II-07-208
 Order #41000028048
 Watauga County
 AFTER Period
 7/1/2008 - 3/31/2014

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
	YIELD SIGN		A ANIMAL
	P PEDESTRIAN		B BICYCLE
	T TRAIN		* DRIVER AT FAULT
	D DRY		W WET
	I ICY OR SNOWY		O Other

US 421
45 MPH

AADT (Year)
23000 (2011)

US 421
45 MPH

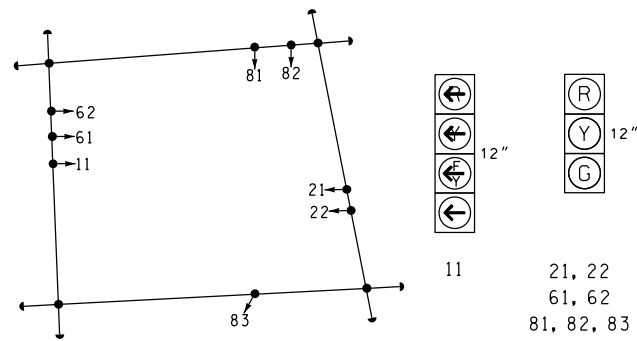
AADT (Year)
23000 (2011)

AADT (Year)
10100 (2011 Est.)

SR 1514 (Bamboo Rd)
35 MPH

Gas Station Driveway

SIGNAL FACE I.D.



Target Crashes

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

TRAFFIC SAFETY UNIT

Date: 6/2/2014

Prepared By: H. Millen

