

Spot Safety Project Evaluation

Project Information

Order ID: 41000030264

Project ID: 09-04-206

Location: I 40 Bus EB / US 421 SB Ramps at SR 2662 (Linville Rd) / New Greensboro Rd

County: Forsyth

City: Winston-Salem

Division: 9

Signal ID: 09-1302

Countermeasure: Install New Signal

Project Completion: June 2007

Project Cost: \$44,000

Map and Aerial (from Google Maps – Coordinates are 36.11068, -80.16323)



Naive Before and After Analysis

Before Period: May 1, 2004 through April 30, 2007 (3 years)

Const. Period: May 1, 2007 through July 31, 2007
(Based on crash report showing signal in June 2007)

After Period: August 1, 2007 through September 30, 2014 (7 years 2 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the I 40 Bus / US 421 and SR 2662 / New Greensboro Rd approaches

Target Crashes: Frontal Impact Crashes (left-turn, same roadway; left-turn, different roadway; right-turn, same roadway; right-turn, different roadway; head-on; and angle crashes) in the intersection

<u>Treatment Information</u>	Before (3 years)	After (7 years 2 months)	Percent Reduction (-) Percent Increase (+)
Total Crashes	18	36	N/A
Total Severity Index	3.88	3.67	- 5.4 %
Total Crashes per Year	6	5.02	- 16.3 %
Target Crashes	11	17	N/A
Target Crash Severity Index	3.69	4.48	+ 21.4 %
Target Crashes per Year	3.67	2.37	- 35.4 %
Volume (2007, 2011)	12,100	11,300	- 6.6 %

<u>Injury Crash Summary</u>	Before (Total)	Before (Per year)	After (Total)	After (Per year)	Percent Reduction (-) Percent Increase (+) (Per year)
Fatal injury Crashes	0	0.00	0	0.00	N/A
Class A injury Crashes	0	0.00	0	0.00	N/A
Class B injury Crashes	3	1.00	3	0.42	- 58.0 %
Class C Injury Crashes	4	1.33	10	1.39	+ 4.5 %
Property Damage Only	11	3.67	23	3.21	- 12.5 %
Total Injury Crashes	7	2.33	13	1.81	- 22.3 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Frontal Impact Crashes Per Year (Target)	3.67	2.37	- 35.4 %
Left-Turn, Same Roadway Crashes	6	10	N/A
Left-Turn, Same Roadway Crashes (per year)	2.00	1.39	- 30.5 %
Rear End Crashes	5	16	N/A
Rear End Crashes (per year)	1.67	2.23	+ 33.5 %
Night Time Crashes	5	10	N/A
Night Time Crashes (per Year)	1.67	1.39	- 16.8 %

Overall Summary Results

Total Crashes (per year):	- 16 %	(reduction)
Total Crash Severity:	- 5 %	(reduction)
Target Crashes (per year):	- 35 %	(reduction)
Target Crash Severity:	+ 21 %	(increase)
Volume:	- 7 %	(reduction)

Additional Summary Results

Frontal Impact Crashes (per year):	- 35 %	(reduction)
Left-Turn, Same Roadway Crashes (per year):	- 31 %	(reduction)
Rear End Crashes (per year):	+ 34 %	(increase)
Night Time Crashes (per Year):	- 17 %	(reduction)

Items for Discussion/Concerns

The study intersection experienced a 16 % reduction in total crashes per year (6.0 to 5.02 crashes per year).

The target crashes per year (Frontal Impact Crashes) experienced a 35 % reduction (3.67 to 2.37 crashes per year).

The study intersection experienced a decrease in left-turn, same roadway crashes per year (2.0 to 1.39 crashes per year), an increase in rear end crashes per year (1.67 to 2.23 crashes per year), and a decrease in night time crashes per year (1.67 to 1.39).

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: Austin Bell, EI
Work Group/Consultant: AECOM
Date: October 31, 2014

SS# 09-04-206
 Order# 41000030264
 Forsyth County
 BEFORE Period
 5/1/2004 - 4/30/2007
 3.0 Years

Note: The before and after time periods are not equal

LEGEND			
	MOVING VEHICLE		ANGLE
	PEDESTRIAN		1 MPH OR LESS
	PARKED VEHICLE		20 MPH TO 29
	PARKING VEHICLE		30 MPH TO 39
	FIXED OBJECT		40 MPH TO 49
	HEAD ON		50 MPH TO 59
	NEAR END		60 MPH TO 69
	RAN OFF ROAD		TO AND UP
	TURNING		SPEED UNKNOWN
	BACKING		P PEDESTRIAN
	SIDESWIPE		T TRAIN
	OUT OF CONTROL		* DRIVER AT FAULT
	REAR END		D DRY
	REAR END		W WET
	REAR END		I ICY OR SNOWY
	REAR END		O ONLY

I-40 Bus / NC 150 EB
 - US 421 SB Ramps
 35 MPH
 2005 ADT - 6,700



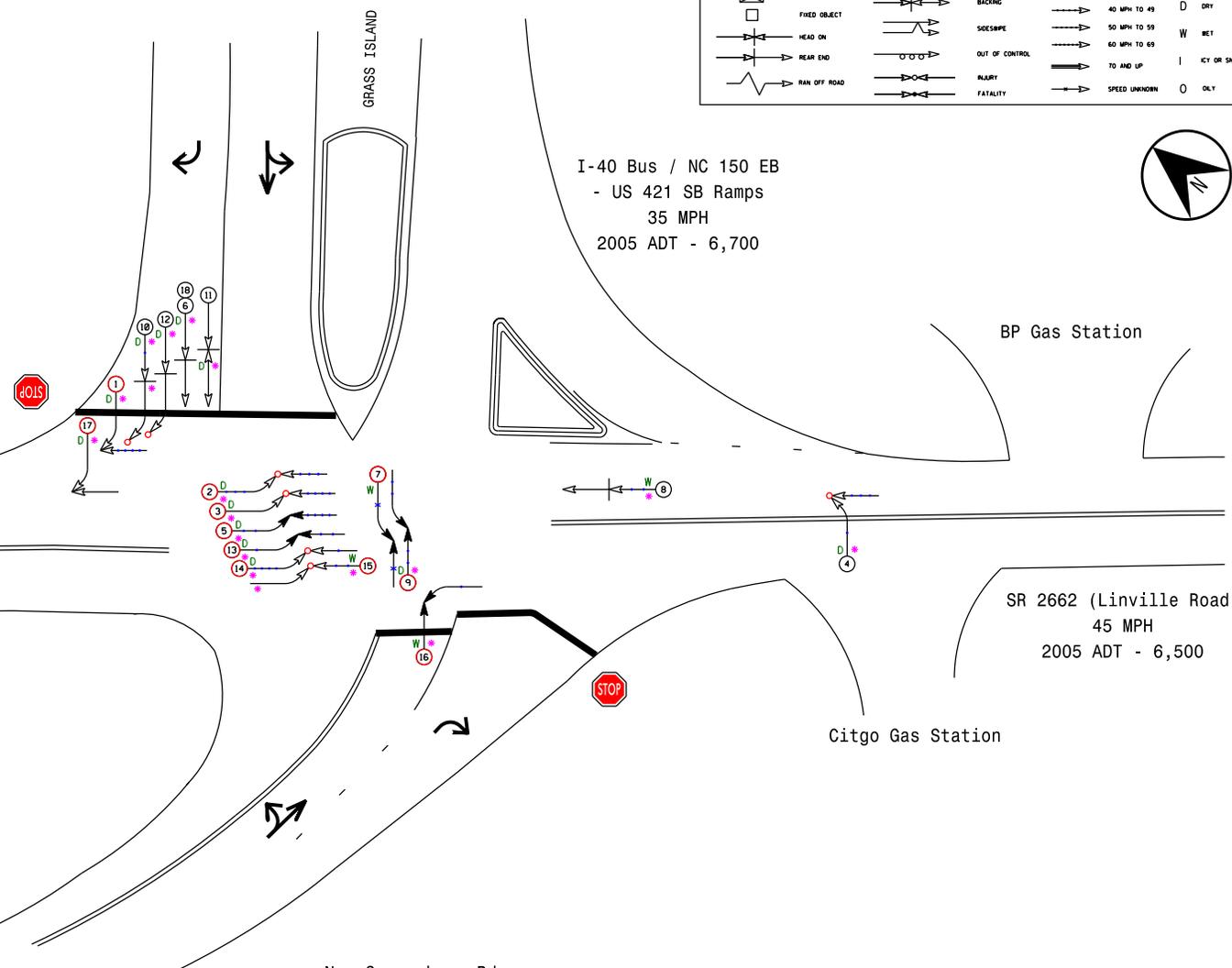
BP Gas Station

SR 2662 (Linville Road)
 45 MPH
 2005 ADT - 6,500

Citgo Gas Station

New Greensboro Rd
 35 MPH
 2005 ADT - 1,000 (Assumed)

SR 2662 (Linville Road)
 45 MPH
 2005 ADT - 10,000



Frontal Impact Crashes

AECOM

Prepared For:
 N.C. DEPARTMENT of TRANSPORTATION
 DIVISION of HIGHWAYS
 TRANSPORTATION MOBILITY and
 SAFETY DIVISION

TRAFFIC SAFETY UNIT

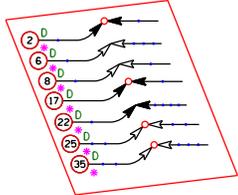
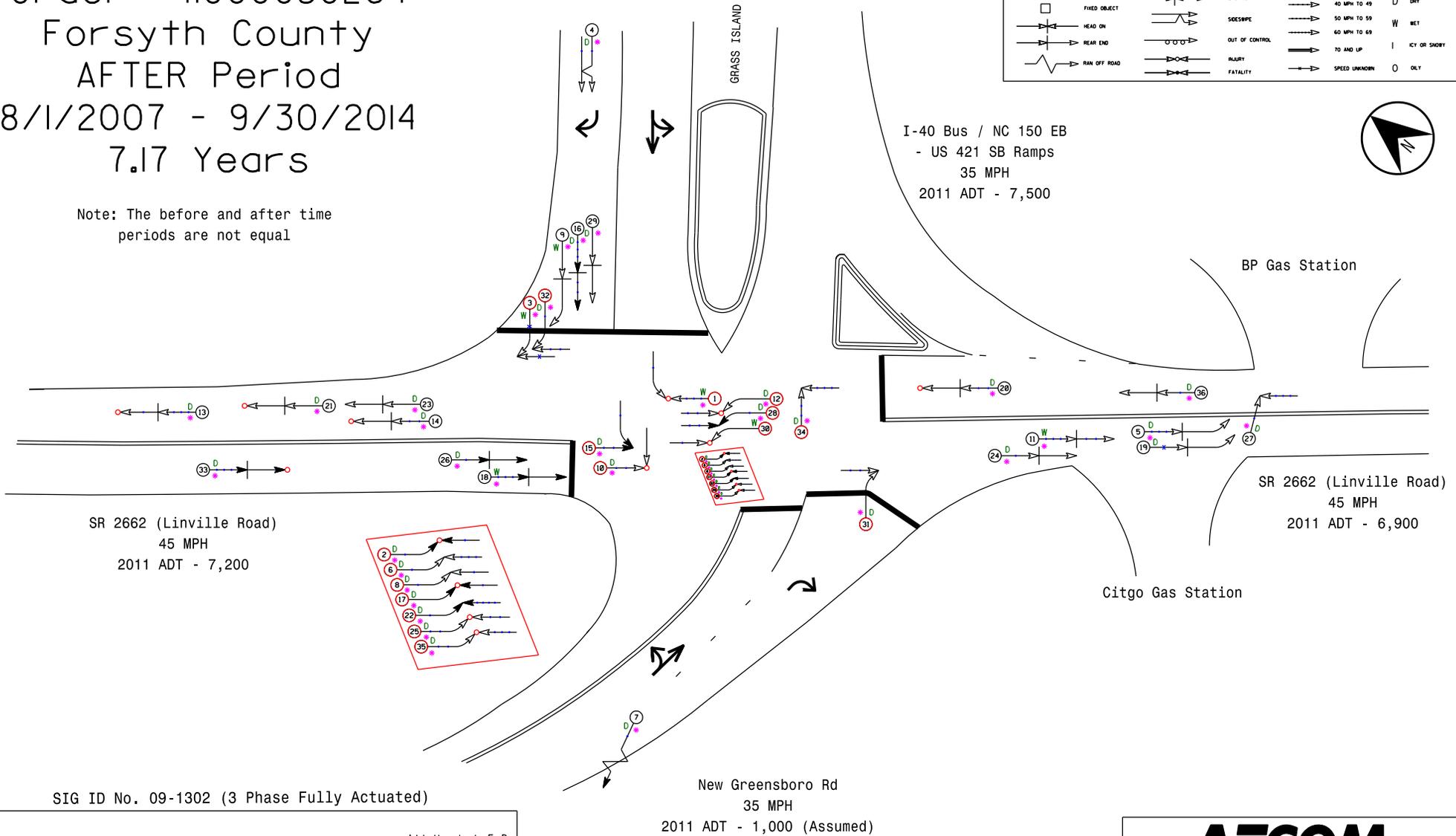
Date: 10-31-2014	Prepared By: Austin Bell, EI
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SS# 09-04-206
 Order# 41000030264
 Forsyth County
 AFTER Period
 8/1/2007 - 9/30/2014
 7.17 Years

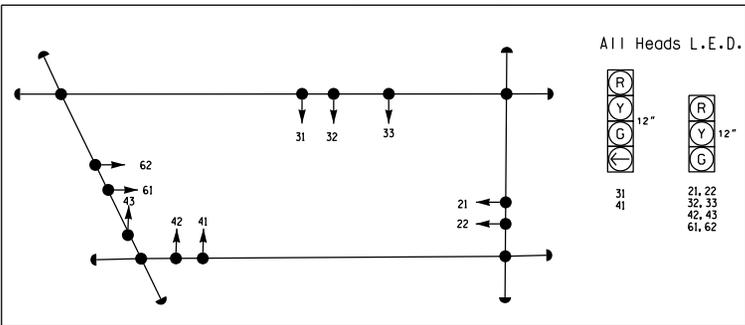
Note: The before and after time periods are not equal

LEGEND

	MOVING VEHICLE		ANGLE		1 MPH OR LESS		PEDESTRIAN
	PEDESTRIAN		TURNING		10 MPH TO 19		TRAIN
	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		HURRY		50 MPH TO 59		ICE OR SNOW
	REAR END		FATALITY		60 MPH TO 69		ONLY
	RAN OFF ROAD				TO AND UP		
					SPEED UNKNOWN		



SIG ID No. 09-1302 (3 Phase Fully Actuated)



Frontal Impact Crashes

AECOM

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 N.C. DEPARTMENT of TRANSPORTATION
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