

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Study Criteria Summary

County: WAKE **City:** All and Rural
Date: 03/01/2013 to 02/28/2018 **Study:** I5870P
Location: I-440 EB Loop On Ramp from US 70 (Glenwood Ave) to I-440 EB Merge

Report Details

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
						F	A	B	C	R	L	W	Ch	Ci	Dv	Op
1	105203284	0.000	08/28/2017 09:06	REAR END, SLOW OR STOP	\$ 1500	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 4	Alchl/Drugs: 0	Speed: 25 MPH	Dir: SE		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
Unit	2 : 4	Alchl/Drugs: 0	Speed: 25 MPH	Dir: SE		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
2	105391157	0.000	02/23/2018 13:16	REAR END, SLOW OR STOP	\$ 10000	0	0	0	0	1	1	2	1	0	0	
Unit	1 : 1	Alchl/Drugs: 0	Speed: 35 MPH	Dir: SE		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
Unit	2 : 4	Alchl/Drugs: 0	Speed: 0 MPH	Dir: SE		Veh Mnvr/Ped Actn: 1				1	Obj Strk:					
3	103792422	0.047	07/03/2013 08:11	REAR END, SLOW OR STOP	\$ 12500	0	0	0	1	1	1	2	3	0	0	
Unit	1 : 1	Alchl/Drugs: 0	Speed: 20 MPH	Dir: S		Veh Mnvr/Ped Actn: 11				11	Obj Strk:					
Unit	2 : 2	Alchl/Drugs: 0	Speed: 0 MPH	Dir: S		Veh Mnvr/Ped Actn: 1				1	Obj Strk:					
4	103872500	0.047	10/11/2013 18:26	REAR END, SLOW OR STOP	\$ 1300	0	0	0	0	1	2	2	1	0	0	
Unit	1 : 1	Alchl/Drugs: 0	Speed: 35 MPH	Dir: E		Veh Mnvr/Ped Actn: 1				1	Obj Strk:					
Unit	2 : 1	Alchl/Drugs: 0	Speed: 30 MPH	Dir: E		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
5	103891110	0.047	11/02/2013 14:00	REAR END, SLOW OR STOP	\$ 5000	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 4	Alchl/Drugs: 0	Speed: 35 MPH	Dir: E		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
Unit	2 : 4	Alchl/Drugs: 0	Speed: 35 MPH	Dir: E		Veh Mnvr/Ped Actn: 11				11	Obj Strk:					
6	104256929	0.047	01/01/2015 19:02	REAR END, SLOW OR STOP	\$ 5000	0	0	0	3	1	2	1	1	0	0	
Unit	1 : 1	Alchl/Drugs: 0	Speed: 35 MPH	Dir: E		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
Unit	2 : 1	Alchl/Drugs: 0	Speed: 40 MPH	Dir: E		Veh Mnvr/Ped Actn: 1				1	Obj Strk:					
7	104976579	0.047	01/16/2017 16:55	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 3	Alchl/Drugs: 0	Speed: 20 MPH	Dir: NE		Veh Mnvr/Ped Actn: 11				11	Obj Strk:					
Unit	2 : 2	Alchl/Drugs: 0	Speed: 20 MPH	Dir: NE		Veh Mnvr/Ped Actn: 11				11	Obj Strk:					
8	105169607	0.047	07/24/2017 09:30	REAR END, SLOW OR STOP	\$ 5400	0	0	0	1	1	1	1	1	0	0	
Unit	1 : 1	Alchl/Drugs: 0	Speed: 25 MPH	Dir: S		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					
Unit	2 : 1	Alchl/Drugs: 0	Speed: 0 MPH	Dir: S		Veh Mnvr/Ped Actn: 4				4	Obj Strk:					

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						F	A	B	C	R	L	W	Ch	Ci	Dv	Op
Unit	3 : 1	Alchl/Drgs:	0	Speed:	0 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	4 : 5	Alchl/Drgs:	0	Speed:	0 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
9	104094307	0.095	07/03/2014 15:17	SIDESWIPE, SAME DIRECTION	\$ 4000	0	0	0	0	2	1	3	1	0	0	
Unit	1 : 10	Alchl/Drgs:	0	Speed:	30 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed:	20 MPH Dir: S	Veh Mnvr/Ped Actn:				5	Obj Strk:					
10	104104997	0.095	07/17/2014 13:41	REAR END, SLOW OR STOP	\$ 1700	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	30 MPH Dir: SE	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed:	30 MPH Dir: SE	Veh Mnvr/Ped Actn:				11	Obj Strk:					
11	104851136	0.095	09/19/2016 16:38	REAR END, SLOW OR STOP	\$ 1100	0	0	0	0	1	1	2	5	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	35 MPH Dir: SE	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 4	Alchl/Drgs:	0	Speed:	35 MPH Dir: SE	Veh Mnvr/Ped Actn:				11	Obj Strk:					
12	104197930	0.104	10/30/2014 16:38	REAR END, SLOW OR STOP	\$ 2500	0	0	0	0	1	1	1	7	0	0	
Unit	1 : 2	Alchl/Drgs:	0	Speed:	30 MPH Dir: S	Veh Mnvr/Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed:	30 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
13	104396026	0.104	06/03/2015 12:54	REAR END, SLOW OR STOP	\$ 450	0	0	0	0	2	1	2	6	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	20 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed:	5 MPH Dir: S	Veh Mnvr/Ped Actn:				11	Obj Strk:					
14	104691208	0.104	04/01/2016 10:47	REAR END, SLOW OR STOP	\$ 1000	0	0	0	0	2	1	3	1	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	20 MPH Dir: E	Veh Mnvr/Ped Actn:				11	Obj Strk:					
Unit	2 : 1	Alchl/Drgs:	0	Speed:	0 MPH Dir: E	Veh Mnvr/Ped Actn:				1	Obj Strk:					
15	105361478	0.104	01/25/2018 11:40	REAR END, SLOW OR STOP	\$ 200	0	0	0	0	1	1	1	5	0	0	
Unit	1 : 5	Alchl/Drgs:	0	Speed:	25 MPH Dir: S	Veh Mnvr/Ped Actn:				4	Obj Strk:					
Unit	2 : 32	Alchl/Drgs:	7	Speed:	20 MPH Dir: S	Veh Mnvr/Ped Actn:				1	Obj Strk:					
16	103827701	0.303	08/17/2013 17:21	FIXED OBJECT	\$ 5500	0	0	0	0	2	1	3	7	0	0	
Unit	1 : 2	Alchl/Drgs:	0	Speed:	45 MPH Dir: E	Veh Mnvr/Ped Actn:				5	Obj Strk:			48		
17	104215253	0.303	11/17/2014 09:20	FIXED OBJECT	\$ 4000	0	0	0	0	2	1	3	1	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed:	50 MPH Dir: E	Veh Mnvr/Ped Actn:				4	Obj Strk:			42		

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						F	A	B	C	R	L	W	Ch	Ci	Dv	Op
18	104256897	0.303	12/20/2014 11:05	FIXED OBJECT	\$ 6700	0	0	0	0	2	1	3	7	0	0	
Unit	1 : 4	Alchl/Drgs:	0	Speed: 60 MPH Dir: E		Veh Mnvr/Ped Actn:				4			Obj Strk:		42	
19	104911264	0.303	11/11/2016 12:13	FIXED OBJECT	\$ 13000	0	0	0	0	1	1	1	7	0	2	1
Unit	1 : 4	Alchl/Drgs:	0	Speed: 35 MPH Dir: NE		Veh Mnvr/Ped Actn:				4			Obj Strk:		41	
Unit	2 : 1	Alchl/Drgs:	0	Speed: 35 MPH Dir: NE		Veh Mnvr/Ped Actn:				11			Obj Strk:			
Unit	3 : 1	Alchl/Drgs:	0	Speed: 35 MPH Dir: NE		Veh Mnvr/Ped Actn:				11			Obj Strk:			
20	104921292	0.303	11/14/2016 05:30	FIXED OBJECT	\$ 1300	0	0	0	0	2	5	3	6	0	0	
Unit	1 : 2	Alchl/Drgs:	0	Speed: 50 MPH Dir: NE		Veh Mnvr/Ped Actn:				4			Obj Strk:		42	
21	104928928	0.303	11/30/2016 02:00	FIXED OBJECT	\$ 15000	0	0	0	0	2	5	3	1	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed: 60 MPH Dir: E		Veh Mnvr/Ped Actn:				4			Obj Strk:		48	
22	105091302	0.303	05/05/2017 19:10	SIDESWIPE, SAME DIRECTION	\$ 2000	0	0	0	0	1	1	1	5	0	0	
Unit	1 : 1	Alchl/Drgs:	0	Speed: 65 MPH Dir: E		Veh Mnvr/Ped Actn:				4			Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed: 65 MPH Dir: E		Veh Mnvr/Ped Actn:				5			Obj Strk:			
23	105252536	0.303	10/13/2017 17:47	SIDESWIPE, SAME DIRECTION	\$ 600	0	0	0	0	1	1	1	7	0	0	
Unit	1 : 4	Alchl/Drgs:	0	Speed: 45 MPH Dir: E		Veh Mnvr/Ped Actn:				6			Obj Strk:			
Unit	2 : 1	Alchl/Drgs:	0	Speed: 0 MPH Dir: E		Veh Mnvr/Ped Actn:				11			Obj Strk:			

Legend for Report Details:

Acc No - Accident Number
Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
Condition: R - Road Surface, L - Ambient Light, W - Weather
Rd Ch - Road Character
Rd Ci - Roadway Contributing Circumstances
Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
Alchl/Drgs - Alcohol Drugs Suspected
Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
Obj Strk - Object Struck

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Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	23	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	3	13.04
Total Injury Crashes	3	13.04
Property Damage Only Crashes	20	86.96
Night Crashes	2	8.70
Wet Crashes	8	34.78
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	23	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	3	13.04
Property Damage Only Crashes	20	86.96

Vehicle Exposure Statistics

Annual ADT = 20000

Total Length = 0.303 (Miles) 0.488 (Kilometers)

Total Vehicle Exposure = 11.07 (MVMT) 17.81 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	207.85	129.15
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	27.11	16.85
Night Crash Rate	18.07	11.23
Wet Crash Rate	72.30	44.92
EPDO Rate	408.47	253.81

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Miscellaneous Statistics

Severity Index =	1.97
EPDO Crash Index =	45.20
Estimated Property Damage Total = \$	102250.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
FIXED OBJECT	6	26.09
REAR END, SLOW OR STOP	14	60.87
SIDESWIPE, SAME DIRECTION	3	13.04

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	5	100.00
Total Non-Fatal Injuries	5	100.00
Total Injuries	5	100.00

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Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	3	13.04
Feb	1	4.35
Mar	0	0.00
Apr	1	4.35
May	1	4.35
Jun	1	4.35
Jul	4	17.39
Aug	2	8.70
Sep	1	4.35
Oct	3	13.04
Nov	5	21.74
Dec	1	4.35

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	6	26.09
Tue	0	0.00
Wed	3	13.04
Thu	5	21.74
Fri	6	26.09
Sat	3	13.04
Sun	0	0.00

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Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	1	4.35
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	1	4.35
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	1	4.35
0900-0959	3	13.04
1000-1059	1	4.35
1100-1159	2	8.70
1200-1259	2	8.70
1300-1359	2	8.70
1400-1459	1	4.35
1500-1559	1	4.35
1600-1659	3	13.04
1700-1759	2	8.70
1800-1859	1	4.35
1900-1959	2	8.70
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

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Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	13	6	0	19
Dark	0	2	0	2
Other	2	0	0	2
Total	15	8	0	23

Object Struck Summary

Object Type	Times Struck	Percent of Total
GUARDRAIL END ON SHOULDER	1	16.67
GUARDRAIL FACE ON SHOULDER	3	50.00
MEDIAN BARRIER FACE	2	33.33

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
LIGHT TRUCK (MINI-VAN, PANEL)	1	2.27
PASSENGER CAR	25	56.82
PICKUP	5	11.36
SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)	1	2.27
SPORT UTILITY	9	20.45
UNKNOWN	1	2.27
VAN	2	4.55

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Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2013	4	0	1	3
2014	5	0	0	5
2015	2	0	1	1
2016	5	0	0	5
2017	5	0	1	4
2018	2	0	0	2
Total	23	0	3	20

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2013	0	1
2014	0	0
2015	0	3
2016	0	0
2017	0	1
2018	0	0
Total	0	5

Miscellaneous Totals

Year	Property Damage	EPDO Index
2013	\$ 24300	11.40
2014	\$ 18900	5.00
2015	\$ 5450	9.40
2016	\$ 31400	5.00
2017	\$ 12000	12.40
2018	\$ 10200	2.00
Total	\$ 102250	45.20

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2013	0	0	3	1	0	0	0
2014	0	0	2	2	0	1	0
2015	0	0	2	0	0	0	0

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Year	Run Off Road &						
	Left Turn	Right Turn	Rear End	Fixed Object	Angle	Side Swipe	Other
2016	0	0	2	3	0	0	0
2017	0	0	3	0	0	2	0
2018	0	0	2	0	0	0	0
Total	0	0	14	6	0	3	0

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Strip Diagram

Features	Milepost	Crash IDs
US 70	0.00	105203284 105391157
	0.01	
	0.02	
	0.03	
	0.04	
	0.05	103792422 103872500 103891110 104256929 104976579 105169607
	0.06	
	0.07	
	0.08	
	0.09	104094307 104104997 104851136
I-440 EB DIVERGE	0.10	104197930 104396026 104691208 105361478
	0.11	
	0.12	
	0.13	
	0.14	
	0.15	
	0.16	
	0.17	
	0.18	
	0.19	
	0.20	
	0.21	
	0.22	
	0.23	
	0.24	
	0.25	
	0.26	
	0.27	
	0.28	
	0.29	
I-440 EB MERGE	0.30	103827701 104215253 104256897 104911264 104921292 104928928 105091302 105252536

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Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
I5870P				76.8	8.4	20000	

Request Date	Courier Service	Phone No.	Ext.	Fax No.
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County			Municipality					
Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
WAKE	92	5	All and Rural		0	03/01/2013	02/28/2018	5.00

Location Text	Requestor
I-440 EB Loop On Ramp from US 70 (Glenwood Ave) to I-440 EB Merge	

Included Accidents	Old MP	New MP	Type
105169607		0.047	I
104256929		0.047	I
103872500		0.047	I
103891110		0.047	I
103792422		0.047	I
105391157		0	I
105203284		0	I
104104997		0.095	I
104851136		0.095	I
104094307		0.095	I
105252536		0.303	I
104921292		0.303	I
104256897		0.303	I
103827701		0.303	I
104976579		0.047	I
104396026		0.104	I
104911264		0.303	I
104691208		0.104	I
104197930		0.104	I
105361478		0.104	I
105091302		0.303	I
104215253		0.303	I
104928928		0.303	I

Fiche Roads

Name	Code
I 1	10000001

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Fiche Roads

Name	Code
US 70BUS	29000070
US 70ALT	21000070
US 70BYP	22000070
US 401	20000401
NC 50	30000050
GLENNWOOD	50011977
EXIT 7	50038709
EXIT 7A	50039831
EXIT 7B	50039832
EXIT 6	50039123
I 440	10000440
US 70	20000070
RIDGE	50025900

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
I 1	10000001	0.000	0.303	0.303	0.488