

Hazard Elimination Project Evaluation

Project Information

Order ID: 41000038371

Project ID: W-5320

Location: Intersection of US 74/NC 226 (W Dixon Blvd) and US 74 Bus (W Marion St)

County: Cleveland

City: Shelby

Division: 12

Signal ID: N/A

Countermeasures: Realign US 74 Business approach to improve skew angle. Improve curve superelevation.

Project Completion: September 30, 2011

Project Cost: \$426,000.00

Map and Aerial (from Google Maps, Coordinates are 35.293942, -81.567401)



Naive Before and After Analysis

Before Period: April 1, 2007 through June 30, 2011 (4 years, 3 months)

Const. Period: July 1, 2011 through September 30, 2011

After Period: October 1, 2011 through December 31, 2015 (4 years, 3 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the US 74/NC 226 (W Dixon Blvd) and US 74 Business (W Marion St) approaches.

Target Crashes: Westbound Rear End Crashes (rear end, slow or stop and rear end, turn) on US 74 Business (W Marion St) at the intersection.

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	36	17	- 52.8 %
Total Severity Index	3.06	1.87	- 38.9 %
Target Crashes	21	3	- 85.7 %
Target Crash Severity Index	3.11	1.00	- 67.8 %
Volume (2009, 2013)	32,800	34,800	+ 6.1 %

<u>Injury Crash Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	0	0	0.0 %
Class A injury Crashes	0	0	0.0 %
Class B injury Crashes	2	0	- 100.0 %
Class C Injury Crashes	8	2	- 75.0 %
Property Damage Only	26	15	- 42.3 %

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Rear End, Slow or Stop (Target)	21	3	- 85.7 %
Sideswipe	6	1	- 83.3 %
Run off Road, Right	2	2	0.0 %
Left Turn, Same Roadway	3	4	+ 33.3 %
Rear End, Slow or Stop (Non-Target)	2	3	+ 50.0 %
Movable Object	1	1	0.0 %
Fixed Object	1	0	- 100.0 %
Run off Road, Left	0	1	+ 100.0 %
Right Turn, Different Roadway	0	1	+ 100.0 %
Left Turn, Different Roadway	0	1	+ 100.0 %

Overall Summary Results

Total Crashes:	- 53 %	(reduction)
Total Crash Severity:	- 39 %	(reduction)
Target Crashes:	- 86 %	(reduction)
Target Crash Severity:	- 68 %	(reduction)
Volume:	+ 6 %	(increase)

Additional Summary Results

Rear End, Slow or Stop (Target):	- 86 %	(reduction)
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Items for Discussion/Concerns

Rear End, Slow or Stop crashes decreased from 21 crashes in the before period to 3 crashes in the after period.

Sideswipe crashes decreased from 6 crashes in the before period to 1 crash in the after period.

Of the 21 Rear End, Slow or Stop crashes in the before period, 16 of them occurred on US 74 Business (W Marion St) for westbound turning vehicles. In the after period, only 2 crashes occurred on US 74 Business (W Marion St) for westbound turning vehicles.

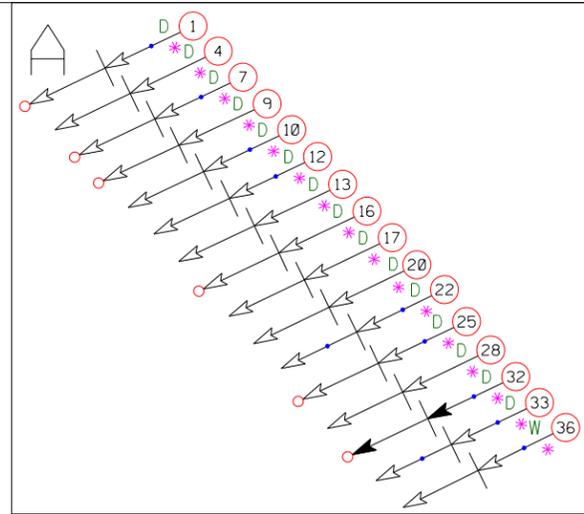
Data Prepared For

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

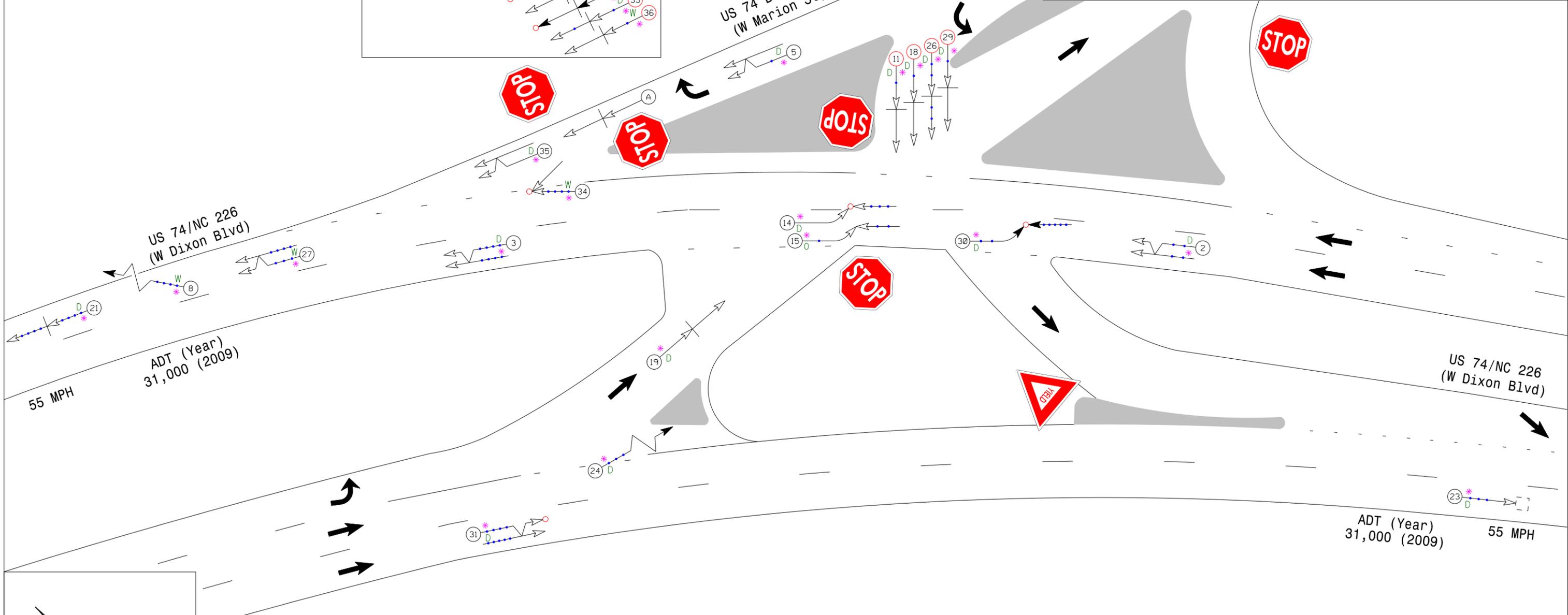
Data Prepared By

Principal Investigator: Rosi Hennein
Work Group/Consultant: Stantec Consulting Services Inc
Date: February 5, 2016

SS# W-5320
 Order#41000038371
 Cleveland County
 Before Period
 4/1/07 - 6/30/11



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



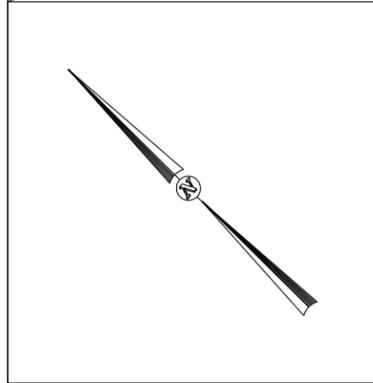
Note Crash #15: Motorist drove on sand which caused vehicle to spin and in result struck oncoming vehicle

Note Crash #31: Motorist sideswiped vehicle to avoid vehicle in front

Note Crash #23: Motorist struck metal cover in roadway

Note Crash #34: Motorist hydroplaned and in result struck stopped vehicle

Target Crashes



Stantec

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

Date: 2/5/2016 Prepared By: RRH

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SS# W-5320
 Order#41000038371
 Cleveland County
 After Period
 10/1/11 - 12/31/15

ADT (Year)
 3,600 (2013)

US 74 Business
 (W Marion St)
 35 MPH

Countermeasure:
 Improved skew angle
 and elevation

US 74/NC 226
 (W Dixon Blvd)

ADT (Year)
 33,000 (2013)

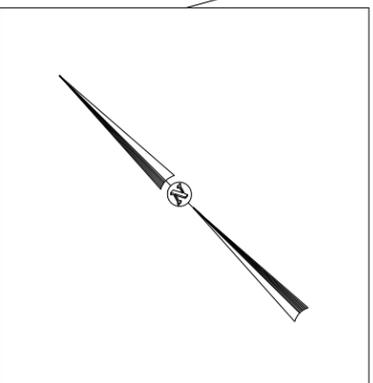
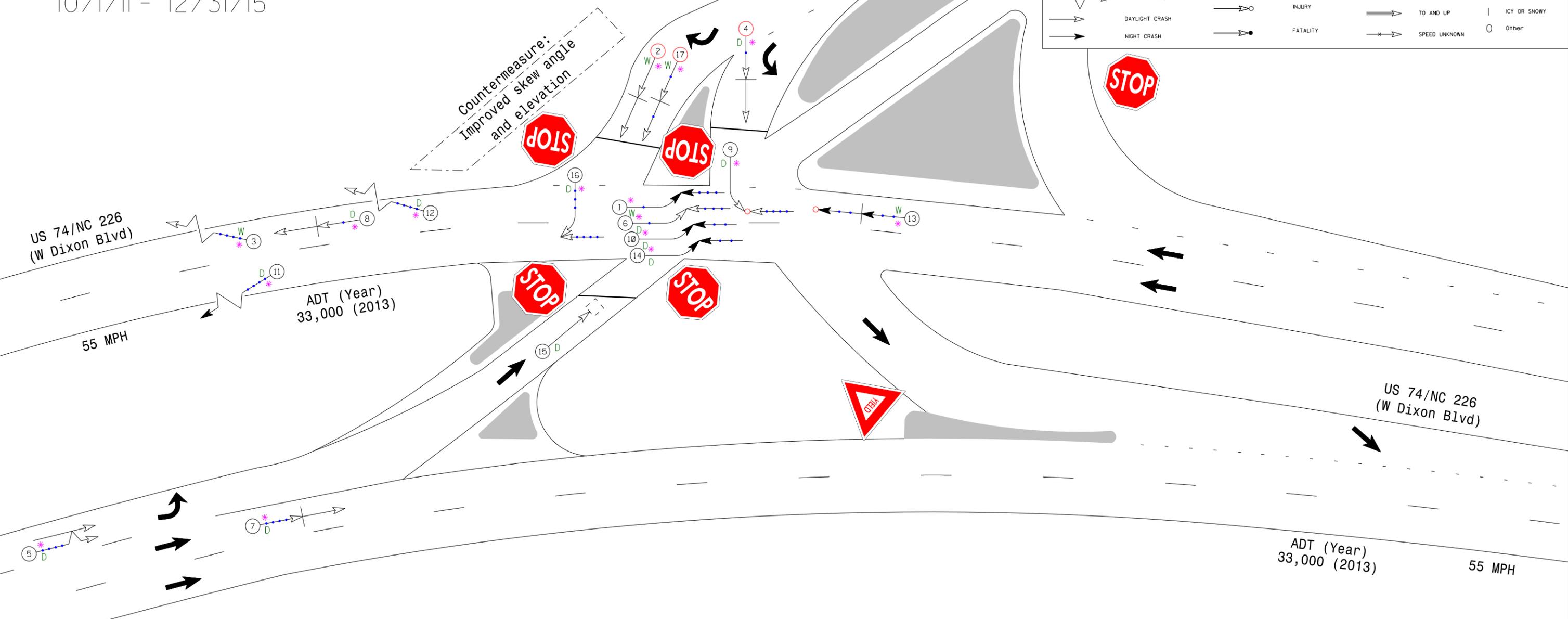
55 MPH

US 74/NC 226
 (W Dixon Blvd)

ADT (Year)
 33,000 (2013)

55 MPH

LEGEND			
	MOVING VEHICLE		ANGLE
	PARKED VEHICLE		9 MPH OR LESS
	PARKING VEHICLE		10 MPH TO 19
	MOVABLE OBJECT		20 MPH TO 29
	HEAD ON		30 MPH TO 39
	REAR END		40 MPH TO 49
	RAN OFF ROAD		50 MPH TO 59
	DAYLIGHT CRASH		60 MPH TO 69
	NIGHT CRASH		INJURY
	FATALITY		70 AND UP
	ANIMAL		SPEED UNKNOWN
	PEDESTRIAN		A ANIMAL
	BICYCLE		P PEDESTRIAN
	TRAIN		B BICYCLE
	DRIVER AT FAULT		T TRAIN
	D DRY		* DRIVER AT FAULT
	W WET		D DRY
	I ICY OR SNOWY		W WET
	O Other		I ICY OR SNOWY



Note Crash #15: Tire from another vehicle came off and struck motorist

Target Crashes

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	<p>Date: 2/5/2016</p>