



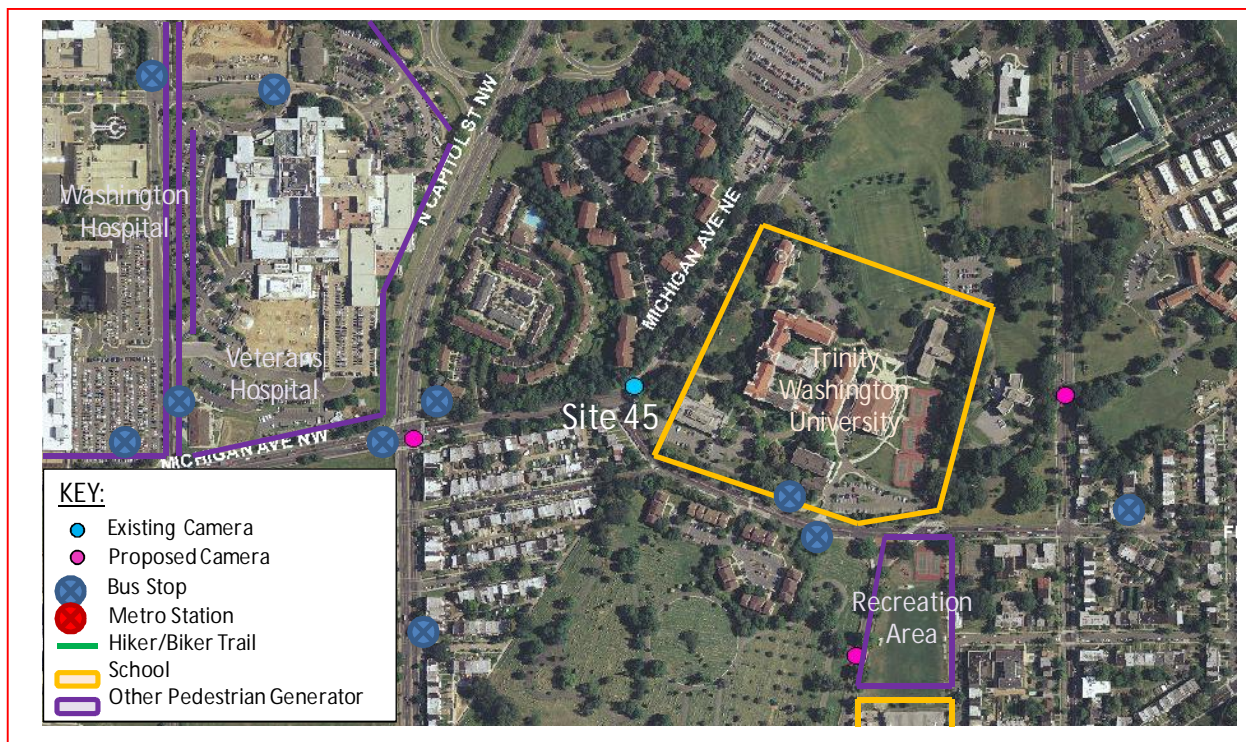
District Department of Transportation

Speed Limit and Safety Nexus Studies for Automated Enforcement Locations in the District of Columbia

100 Block Michigan Avenue NE E/B

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
5	405	5	5C	Existing	100 Block Michigan Avenue Northeast Eastbound



The existing speed camera is located in Ward 5 in the 100 Block of Michigan Avenue Northeast in the eastbound direction. Michigan Avenue runs between Franklin Street Northeast to the west and Eastern Avenue Northeast to the west. The posted speed limit is 25 MPH. The speed camera was installed on January 2005.

W5 - 13





District Department of Transportation

100 Block Michigan Avenue NE E/B

Field Assessment Summary

Michigan Avenue Northeast is assumed to run an East-West direction and is classified as a minor arterial. Michigan Avenue has two travel lanes in each direction. This site has the following characteristics:

- This site is located in a residential area with on-street parking in both directions.
- There is sidewalk with curb and gutter on both sides of the roadway.
- The existing pavement is in good condition.
- There is an unmarked pedestrian crossing at this location.
- There are several bus routes along this roadway.
- There is one school located in the area: Trinity Washington University.
- There are several other pedestrian generators in the area: Washington Hospital, Veteran's Hospital, and Edgewood Playground.



Looking Westbound



District Department of Transportation

100 Block Michigan Avenue NE E/B



Looking Westbound

Speed Data Analysis

Posted Speed Limit (MPH)	25
Mean Speed (MPH)	21
85th Percentile Speed (MPH)	29
10 MPH Pace Speed	21-30
ADT	4,505

The mean speed is 4 MPH lower than the posted speed limit, and the 85th percentile speed is 4 MPH higher than the posted speed limit.

Crash Data Analysis

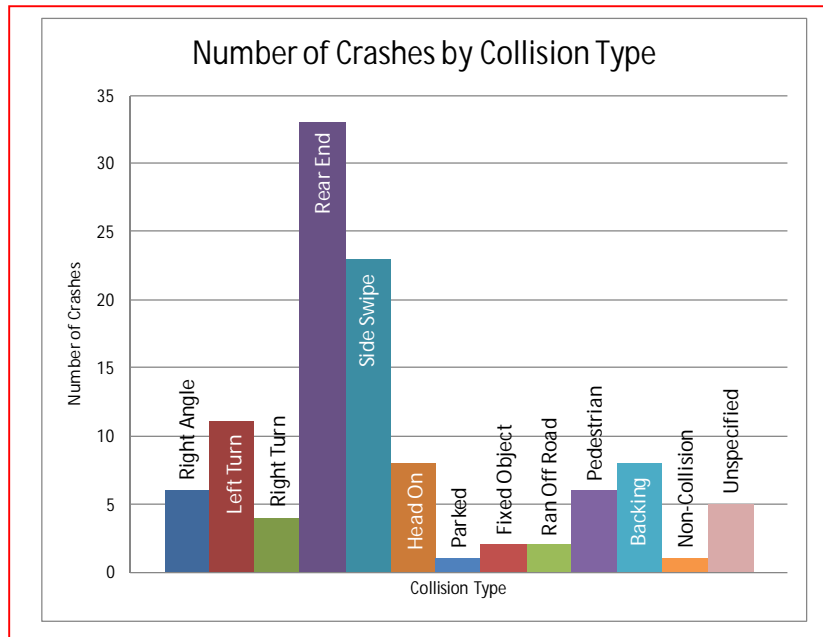
From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 110 crashes at this location. A breakdown of number of crashes by collision type can be found in the chart on the next page. The most common types of collision at this location were Rear End (33 crashes), Side Swipe (23 crashes), Left Turn (11), Head On (8), and Backing (8). The other collision types had six crashes or less.



District Department of Transportation

100 Block Michigan Avenue NE E/B

Severity			Weather			Surface condition			Light Condition		
Total	110										
Fatal	0	0.0%	Clear	92	83.6%	Dry	93	84.5%	Day	66	60.0%
Injury	39	35.5%	Rain	13	11.8%	Wet	14	12.7%	Night	36	32.7%
Bus	12	10.9%	Snow	2	1.8%	Snow/Ice	1	0.9%			
Taxi	7	6.4%									



There were an elevated number of speed-related crashes at this location, including rear end and side swipe crashes. The AASHTO Highway Safety Manual lists “assuming the lead driver will go through a green or yellow light, but the lead driver stops” and “changing lanes to avoid a slowing or stopped vehicle”¹ as two errors leading to rear-end and sideswipe crashes. Both of these errors can be decreased with a decrease in travel speed.

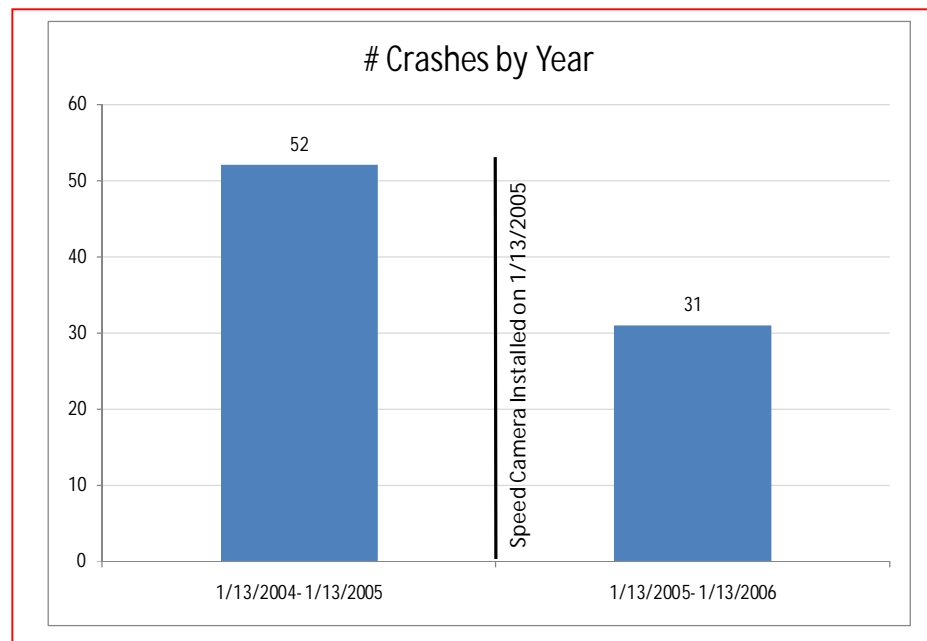
The speed camera was installed on 1-13-2005. The graph on the next page shows the number of crashes in the years prior to the speed camera’s installation (52 crashes) and the one year after the speed camera’s installation (31 crashes).

¹ AASHTO Highway Safety Manual, 1st Edition, 2010; Volume 1, page 2-13



District Department of Transportation

100 Block Michigan Avenue NE E/B



This site is located within a half mile radius of one of the top five percent high accident locations in the District from 2010 to 2012: Michigan Avenue NE at First Street NW. ²

Safety Nexus

This site presents the following safety considerations which may establish a nexus between the speed camera and traffic safety.

1. Speed Data – The speed data analysis shows that the 85th percentile speed is higher than the posted speed limit at this location.
2. Crash Data - This location experienced a high frequency (39 crashes) of injury related crashes. There was an elevated number of speed related crashes at this location, including Rear End and Side Swipe collisions. The number of accidents at this location decreased by a significant amount after the installation of the speed camera.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
 - a. This site is located in a residential area with apartments on both sides.
 - b. There is one school in the area: Trinity Washington University.
 - c. There are several other pedestrian generators in the area: Washington Hospital, Veteran's Hospital, and Edgewood Playground.

² DDOT, Top 5% High Accident Locations Map for 2010-2012



District Department of Transportation

100 Block Michigan Avenue NE E/B

- d. There is on-street parking at this location.
- e. There are multiple bus stops in the area which generate pedestrian activity.

Due to the speed data analysis, the elevated number of speed-related crashes and injury-related crashes, the specific site characteristics and pedestrian generators, there is a nexus between traffic safety and the speed camera at this location.

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

100 block of Michigan Ave NE EB Speed

EB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
11/11/13	6	5	26	25	14	1	1	0	0	0	0	0	0	0	78
01:00	2	1	12	23	9	1	0	0	0	0	0	0	0	0	48
02:00	1	1	7	9	5	2	0	0	0	0	0	0	0	0	25
03:00	3	0	5	7	8	1	0	0	0	0	0	0	0	0	24
04:00	1	1	9	10	8	1	0	0	0	0	0	0	0	0	30
05:00	9	3	22	31	7	0	0	0	0	0	0	0	0	0	72
06:00	17	7	49	58	14	4	0	0	0	0	0	0	0	0	149
07:00	15	22	91	82	22	0	0	0	0	0	0	0	0	0	232
08:00	23	21	83	94	27	0	0	0	0	0	0	0	0	0	248
09:00	12	17	76	72	26	4	0	0	0	0	0	0	0	0	207
10:00	13	22	89	103	24	5	0	0	0	0	0	0	0	0	256
11:00	19	32	100	85	17	0	0	0	0	0	0	0	0	0	253
12 PM	18	29	86	86	21	3	0	0	0	0	0	0	0	0	243
13:00	15	44	98	101	31	5	0	0	0	0	0	0	0	0	294
14:00	14	35	113	100	33	6	0	0	0	0	0	0	0	0	301
15:00	21	34	129	132	26	4	0	0	0	0	0	0	0	0	346
16:00	30	11	75	124	43	6	0	0	0	0	0	0	0	0	289
17:00	39	26	98	113	32	4	0	0	0	0	0	0	0	0	312
18:00	58	10	72	89	23	3	0	0	0	0	0	0	0	0	255
19:00	201	0	0	0	0	0	0	0	0	0	0	0	0	0	201
20:00	181	0	0	0	0	0	0	0	0	0	0	0	0	0	181
21:00	103	2	29	25	12	1	0	0	0	0	0	0	0	0	172
22:00	15	6	38	59	14	1	0	0	0	0	0	0	0	0	133
23:00	22	10	35	62	20	6	1	0	0	0	0	0	0	0	156
Total	838	339	1342	1490	436	58	2	0	0	0	0	0	0	0	4505
Grand Total	838	339	1342	1490	436	58	2	0	0	0	0	0	0	0	4505

15th Percentile : 8 MPH
 50th Percentile : 22 MPH
 85th Percentile : 29 MPH
 95th Percentile : 32 MPH

Stats
 Mean Speed(Average) : 21 MPH
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 2179
 Percent in Pace : 48.4%
 Number of Vehicles > 25 MPH : 1659
 Percent of Vehicles > 25 MPH : 36.8%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

100 block of Michigan Ave NE EB Volume

Start Time	11-Nov-13		12-Nov-13		13-Nov-13		Daily Average	
	Mon A.M.	P.M.	Tue A.M.	P.M.	Wed A.M.	P.M.	A.M.	P.M.
12:00	12	57	*	*	*	*	12	57
12:15	23	68	*	*	*	*	23	68
12:30	22	53	*	*	*	*	22	53
12:45	21	65	*	*	*	*	21	65
01:00	14	73	*	*	*	*	14	73
01:15	16	72	*	*	*	*	16	72
01:30	9	73	*	*	*	*	9	73
01:45	9	76	*	*	*	*	9	76
02:00	8	74	*	*	*	*	8	74
02:15	5	69	*	*	*	*	5	69
02:30	7	82	*	*	*	*	7	82
02:45	5	76	*	*	*	*	5	76
03:00	10	77	*	*	*	*	10	77
03:15	5	104	*	*	*	*	5	104
03:30	3	95	*	*	*	*	3	95
03:45	6	70	*	*	*	*	6	70
04:00	8	73	*	*	*	*	8	73
04:15	6	79	*	*	*	*	6	79
04:30	6	69	*	*	*	*	6	69
04:45	10	68	*	*	*	*	10	68
05:00	9	85	*	*	*	*	9	85
05:15	9	72	*	*	*	*	9	72
05:30	21	73	*	*	*	*	21	73
05:45	33	82	*	*	*	*	33	82
06:00	24	83	*	*	*	*	24	83
06:15	28	66	*	*	*	*	28	66
06:30	47	49	*	*	*	*	47	49
06:45	50	57	*	*	*	*	50	57
07:00	57	45	*	*	*	*	57	45
07:15	57	58	*	*	*	*	57	58
07:30	66	61	*	*	*	*	66	61
07:45	52	37	*	*	*	*	52	37
08:00	59	48	*	*	*	*	59	48
08:15	61	43	*	*	*	*	61	43
08:30	72	48	*	*	*	*	72	48
08:45	56	42	*	*	*	*	56	42
09:00	60	41	*	*	*	*	60	41
09:15	49	47	*	*	*	*	49	47
09:30	48	38	*	*	*	*	48	38
09:45	50	46	*	*	*	*	50	46
10:00	54	36	*	*	*	*	54	36
10:15	70	36	*	*	*	*	70	36
10:30	73	32	*	*	*	*	73	32
10:45	59	29	*	*	*	*	59	29
11:00	57	36	*	*	*	*	57	36
11:15	70	36	*	*	*	*	70	36
11:30	60	48	*	*	*	*	60	48
11:45	66	36	*	*	*	*	66	36
Total	1622	2883	0	0	0	0	1622	2883
Combined Total	4505		0		0		4505	
Peak	10:15	02:45					10:15	02:45
Vol.	259	352					259	352
P.H.F.	0.887	0.846					0.887	0.846
ADT	ADT 4,505		AADT 4,505					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: MICHIGAN AVE,NW,NE From NORTH CAPITOL ST,BN TO IRVING ST,NE

Time Period Covered: From 01/01/2010 To 12/31/2012

Prepared By: Rahul Jain

Prepared Date: 9/17/2013

		Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Accident:	110	Right Angle:	6	5.5%	Fixed Object:	2	1.8%
Total Number of Fatalities:	0	Left Turn:	11	10.0%	Ran Off Road:	2	1.8%
Total Number of Injuries:	59	Right Turn:	4	3.6%	Ped. Involved:	6	5.5%
Total Number of Disabling Injuries:	6	Rear End:	33	30.0%	Backing:	8	7.3%
Total Number of NonDisabling Injuries:	7	Side Swiped:	23	20.9%	Non Collision:	1	0.9%
Total Number of Pedestrians Involved:	6	Head On:	8	7.3%	Under/Over Ride:	0	0.0%
Total Number of Bicycles Involved:	2	Parked:	1	0.9%	Unspecified:	5	4.5%
Total Number of Motorcycles Involved:	1						

Time of Day	#ACC	%	Day o fweek	#ACC	%
07:30 ~ 09:30:	7	6.4%	Sunday:	7	6.4%
09:30 ~ 11:30:	10	9.1%	Monday:	22	20.0%
11:30 ~ 13:30:	16	14.5%	Tuesday:	21	19.1%
13:30 ~ 16:00:	18	16.4%	Wednesday:	19	17.3%
16:00 ~18:30:	15	13.6%	Thursday:	11	10.0%
18:30 ~ 07:30:	44	40.0%	Friday:	19	17.3%
Unspecified:	0	0.0%	Saturday:	11	10.0%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	92	83.6%	Dry:	93	84.5%
Rain:	13	11.8%	Wet:	14	12.7%
Snow:	2	1.8%	Snow/Ice:	1	0.9%
Sleet/Hail:	0	0.0%	Slush:	0	0.0%
Fog/Mist:	0	0.0%	Water/Sand:	0	0.0%
Crosswind/Blowing Sand:	0	0.0%	Repairing:	0	0.0%
Unspecified:	3	2.7%	Unspecified:	2	1.8%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	174	82.1%	Fatal Collision:	0	0.0%
Bus:	12	5.7%	Injury Collision:	39	35.5%
Truck:	5	2.4%	PDO Collision:	71	64.5%
Taxi:	7	3.3%			
Minivan:	0	0.0%	Light Condition	#ACC	%
Police/Emergency Vehicle:	1	0.5%	Daylight:	66	60.0%
Motorcycle/Moped:	1	0.5%	Dawn/Dusk:	2	1.8%
Bicycle:	2	0.9%	Dark(Lighted):	36	32.7%
Fixed Object:	0	0.0%	Dark(Not Lighted):	0	0.0%
Unspecified:	10	4.7%	Dark(Unknown Lighting):	0	0.0%
			Unspecified:	6	5.5%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	5	2.4%	In Crosswalk with Signal:	3	60.0%
Driver: Alcohol/Drug:	1	0.5%	In Crosswalk against Signal:	0	0.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	46	21.7%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	1	0.5%	Not in Crosswalk:	0	0.0%
Roadway:	4	1.9%	From Between Parked Cars:	0	0.0%
Unspecified:	155	73.1%	Unspecified:	2	40.0%

78 Records are not approved as of 9/17/2013 12:42:07 PM

Accident Summary Report (R-8)

Corridor: MICHIGAN AVE,NW,NE From NORTH CAPITOL ST,BN TO IRVING ST,NE

Time Period Covered: From 01/01/2004 To 12/31/2004

Prepared By: Rahul Jain

Prepared Date: 11/19/2013

Total Number of Accident:	52	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	9	17.3%	Fixed Object:	1	1.9%
Total Number of Injuries:	35	Left Turn:	12	23.1%	Ran Off Road:	0	0.0%
Total Number of Disabling Injuries:	1	Right Turn:	0	0.0%	Ped. Involved:	1	1.9%
Total Number of NonDisabling Injuries:	1	Rear End:	14	26.9%	Backing:	0	0.0%
Total Number of Pedestrians Involved:	0	Side Swiped:	13	25.0%	Non Collision:	0	0.0%
Total Number of Bicycles Involved:	0	Head On:	0	0.0%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	0	Parked:	2	3.8%	Unspecified:	0	0.0%
Time of Day				#ACC	%	Day of week	
07:30 ~ 09:30:				10	19.2%	Sunday:	
09:30 ~ 11:30:				3	5.8%	Monday:	
11:30 ~ 13:30:				11	21.2%	Tuesday:	
13:30 ~ 16:00:				7	13.5%	Wednesday:	
16:00 ~ 18:30:				13	25.0%	Thursday:	
18:30 ~ 07:30:				8	15.4%	Friday:	
Unspecified:				0	0.0%	Saturday:	
Weather Condition				#ACC	%	Surface Condition	
Clear:				46	88.5%	Dry:	
Rain:				3	5.8%	Wet:	
Snow:				0	0.0%	Snow/Ice:	
Sleet/Hail:				0	0.0%	Slush:	
Fog/Mist:				0	0.0%	Water/Sand:	
Crosswind/Blowing Sand:				0	0.0%	Repairing:	
Unspecified:				3	5.8%	Unspecified:	
Type of Vehicle				#VEH	%	Accident Severity Type	
Passenger Car:				90	80.4%	Fatal Collision:	
Bus:				2	1.8%	Injury Collision:	
Truck:				6	5.4%	PDO Collision:	
Taxi:				4	3.6%		
Minivan:				0	0.0%	Light Condition	
Police/Emergency Vehicle:				0	0.0%	Daylight:	
Motorcycle/Moped:				0	0.0%	Dawn/Dusk:	
Bicycle:				0	0.0%	Dark(Lighted):	
Fixed Object:				0	0.0%	Dark(Not Lighted):	
Unspecified:				10	8.9%	Dark(Unknown Lighting):	
						Unspecified:	
Contributing Factor				#VEH	%	Pedestrian Actions	
Driver: Speed:				1	0.9%	In Crosswalk with Signal:	
Driver: Alcohol/Drug:				0	0.0%	In Crosswalk against Signal:	
Driver: Electronic Device:				0	0.0%	In Crosswalk no Signal:	
Driver: Others:				19	17.0%	In Unmarked Crosswalk:	
Vehicle:				0	0.0%	Not in Crosswalk:	
Roadway:				0	0.0%	From Between Parked Cars:	
Unspecified:				92	82.1%	Unspecified:	

52 Records are not approved as of 11/19/2013 2:41:45 PM

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: MICHIGAN AVE,NW,NE From NORTH CAPITOL ST,BN TO IRVING ST,NE

Time Period Covered: From 01/01/2006 To 12/31/2006

Prepared By: Rahul Jain

Prepared Date: 11/19/2013

		Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Accident:	31	Right Angle:	4	12.9%	Fixed Object:	0	0.0%
Total Number of Fatalities:	0	Left Turn:	3	9.7%	Ran Off Road:	1	3.2%
Total Number of Injuries:	15	Right Turn:	2	6.5%	Ped. Involved:	0	0.0%
Total Number of Disabling Injuries:	0	Rear End:	8	25.8%	Backing:	1	3.2%
Total Number of NonDisabling Injuries:	4	Side Swiped:	9	29.0%	Non Collision:	0	0.0%
Total Number of Pedestrians Involved:	3	Head On:	1	3.2%	Under/Over Ride:	0	0.0%
Total Number of Bicycles Involved:	0	Parked:	0	0.0%	Unspecified:	2	6.5%
Total Number of Motorcycles Involved:	0						

Time of Day	#ACC	%	Day of week	#ACC	%
07:30 ~ 09:30:	5	16.1%	Sunday:	3	9.7%
09:30 ~ 11:30:	1	3.2%	Monday:	4	12.9%
11:30 ~ 13:30:	0	0.0%	Tuesday:	7	22.6%
13:30 ~ 16:00:	5	16.1%	Wednesday:	5	16.1%
16:00 ~ 18:30:	9	29.0%	Thursday:	7	22.6%
18:30 ~ 07:30:	11	35.5%	Friday:	1	3.2%
Unspecified:	0	0.0%	Saturday:	4	12.9%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	29	93.5%	Dry:	28	90.3%
Rain:	1	3.2%	Wet:	1	3.2%
Snow:	0	0.0%	Snow/Ice:	0	0.0%
Sleet/Hail:	0	0.0%	Slush:	0	0.0%
Fog/Mist:	0	0.0%	Water/Sand:	0	0.0%
Crosswind/Blowing Sand:	0	0.0%	Repairing:	0	0.0%
Unspecified:	1	3.2%	Unspecified:	2	6.5%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	56	76.7%	Fatal Collision:	0	0.0%
Bus:	3	4.1%	Injury Collision:	13	41.9%
Truck:	3	4.1%	PDO Collision:	18	58.1%
Taxi:	1	1.4%			
Minivan:	0	0.0%	Light Condition	#ACC	%
Police/Emergency Vehicle:	0	0.0%	Daylight:	20	64.5%
Motorcycle/Moped:	0	0.0%	Dawn/Dusk:	2	6.5%
Bicycle:	0	0.0%	Dark(Lighted):	0	0.0%
Fixed Object:	0	0.0%	Dark(Not Lighted):	0	0.0%
Unspecified:	10	13.7%	Dark(Unknown Lighting):	7	22.6%
			Unspecified:	2	6.5%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	1	1.4%	In Crosswalk with Signal:	1	50.0%
Driver: Alcohol/Drug:	0	0.0%	In Crosswalk against Signal:	0	0.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	13	17.8%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	0	0.0%	Not in Crosswalk:	0	0.0%
Roadway:	3	4.1%	From Between Parked Cars:	0	0.0%
Unspecified:	56	76.7%	Unspecified:	1	50.0%

31 Records are not approved as of 11/19/2013 2:40:02 PM