



Speed Limit and Safety Nexus Studies for Automated Enforcement Locations in the District of Columbia 1900 Block Independence Avenue SE

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
1	108	6	6B	Existing	1900 Block Independence Avenue Southeast
					Eastbound



The *existing* speed camera is located in Ward 6 at the 1900 block Independence Avenue Southeast in the eastbound direction. Independence Avenue Southeast runs between South Capitol Street Southeast to the west and East Capitol Street Northeast to the east. The posted speed limit is 25 MPH. The speed camera was installed September 2011.





Field Assessment Summary

Independence Avenue Southeast is assumed to run in an east-west direction, and is classified as a principal arterial. Independence Avenue Southeast has one lane westbound and four lanes eastbound. One of the eastbound lanes becomes a right turn only lane for a media entrance to RFK Stadium. This site has the following characteristics:

- This area is located next to the RFK Stadium and the parking lots for the stadium.
- There is one school: Eastern Senior High School.
- The DC Armory and RFK Stadium are located in the area as well as the Stadium-Armory Metro Station.
- There is a grassy median and sidewalk on both sides of the street.
- The pavement is in good condition and there is curb and gutter with drainage inlets.







Speed Data Analysis

Posted Speed Limit (MPH)	25
Mean Speed (MPH)	26
85th Percentile Speed (MPH)	30
10 MPH Pace Speed (MPH)	22-31
ADT	6,029

The mean speed is higher than the posted speed limit by 1 MPH and the 85th percentile speed is higher than the posted speed by 5 MPH at this location.

Crash Data Analysis

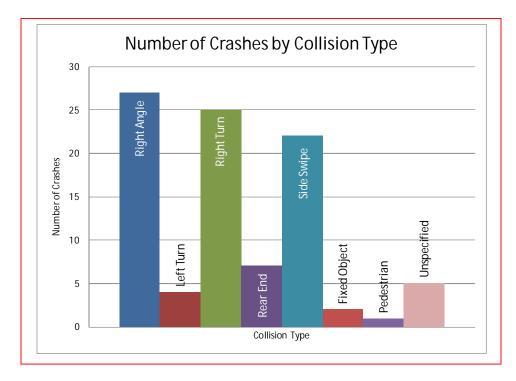
From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 93 crashes at this location. A breakdown of number of crashes by collision type can be found in the chart on the next page. The most common types of collision at this location were Right Angle (27 crashes), Right Turn (25 crashes), Side Swipe (22 crashes), and Rear End (7 crashes). The other collision types had five crashes or less each. Furthermore, this site experienced a high frequency (29 crashes) of injury-related crashes.

W6 - 96





Sev	Severity			Weather			condit	ion	Light Condition		
Total	93										
Fatal	0	0.0%	Clear	80	86.0%	Dry	80	86.0%	Day	74	79.6%
Injury	29	31.2%	Rain	9	9.7%	Wet	11	11.8%	Night	16	17.2%
Truck	21	22.6%	Snow	2	2.2%	Snow/Ice	2	2.2%			
Bus	13	14.0%									



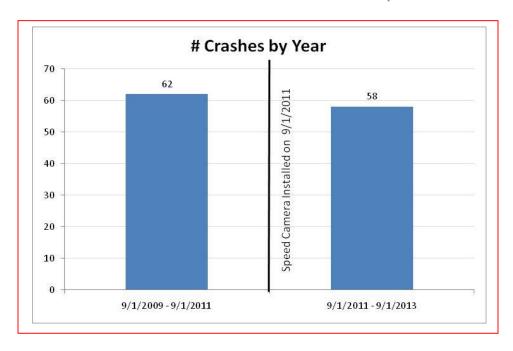
There was an elevated number of speed related crashes at this location, including side swipe and right angle crashes. The Highway Safety Manual lists "assuming the lead driver will go through a green or yellow light, but the lead driver stops" and "changing lanes to avoid a slowing or stopped vehicle"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

The speed camera was installed on 9-1-2011. The graph on the next page shows the number of crashes in the two years prior to the speed camera's installation (62 crashes) and the two years after the speed camera's installation (58 crashes). There was a decrease in the number of crashes after the installation of the speed camera.

W6 - 97

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





Safety Nexus

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

- 1. Speed Data The 85th percentile speed is higher than the posted speed limit at this location.
- 2. Crash Data There was an elevated number of speed related crashes in this area, including right angle and side swipe collisions, as well as a high frequency (29 crashes) of injury related crashes. There was a decrease in the number of crashes after installation of the speed camera.
- 3. Field Assessment The following site characteristics suggest a need for a safer travel environment:
 - a. There is one school in the area: Eastern Senior High School.
 - b. RFK Stadium, the DC Armory, and the Stadium Armory Metro Station are in the area which generates pedestrian activity.
 - c. 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

1900 block of Independence Ave SE EB Speed

Direction	1														
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
11/23/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	12	1	17	13	5	0	0	0	0	0	0	0	0	0	48
03:00	1	2	20	15	6	0	0	1	1	0	0	0	0	0	46
04:00	0	4	10	13	2	1	0	0	0	0	0	0	0	0	30
05:00	1	4	9	27	6	1	0	0	0	0	0	0	0	0	48
06:00	1	5	31	52	13	6	1	0	0	0	0	0	0	0	109
07:00	3	7	78	76	18	6	1	0	0	0	0	0	0	0	189
08:00	12	6	87	115	41	5	1	0	0	0	0	0	0	0	267
09:00	9	5	104	155	39	4	0	0	0	0	0	0	0	0	316
10:00	11	17	125	147	48	14	3	1	0	0	0	0	0	0	366
11:00	16	12	114	120	63	17	8	1	0	0	0	0	0	0	351
12 PM	25	15	116	162	61	24	2	1	0	0	0	0	0	0	406
13:00	24	11	122	222	71	13	4	0	0	0	0	0	0	0	467
14:00	13	18	155	198	70	15	5	0	0	0	0	0	0	0	474
15:00	18	14	175	207	71	11	2	0	0	0	0	0	0	0	498
16:00	13	16	160	203	71	11	2	0	0	0	0	0	0	0	476
17:00	10	16	138	166	38	10	3	1	0	0	0	0	0	0	382
18:00	4	14	121	113	59	16	0	0	0	0	0	0	0	0	327
19:00	9	5	106	106	24	4	0	0	0	0	0	0	0	0	254
20:00	1	5	74	83	25	5	2	0	0	0	0	0	0	0	195
21:00	4	12	73	101	22	3	1	0	0	0	0	0	0	0	216
22:00	6	3	84	78	15	3	0	0	0	0	0	0	0	0	189
23:00	3	1_	82	68	22	2	0	0	0	0	0	0	0	0	178
Total	196	193	2001	2440	790	171	35	5	1	0	0	0	0	0	5832

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD MOUNT AIRY, MD 21771

www.sammateng.com

1900 block of Independence Ave SE EB Speed

Direction															
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
11/24/13	3	13	46	56	15	2	1	0	0	0	0	0	0	0	136
01:00	0	4	26	23	6	2	0	0	0	0	0	0	0	0	61
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	3	17	72	79	21	4	1	0	0	0	0	0	0	0	197
Grand Total	199	210	2073	2519	811	175	36	5	1	0	0	0	0	0	6029

20 MPH 25 MPH 15th Percentile : 50th Percentile: 85th Percentile: 30 MPH 95th Percentile: 34 MPH

Stats 26 MPH

Mean Speed(Average) : 10 MPH Pace Speed : 22-31 MPH Number in Pace : 4021 Percent in Pace : 66.7%

Number of Vehicles > 25 MPH: 3347 Percent of Vehicles > 25 MPH : 55.5%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD MOUNT AIRY, MD 21771

www.sammateng.com

1900 block of Independence Ave SE EB Volume

Start	Sat	23-Nov-13	Sun	24-Nov-13	Mon	25-Nov-13	Daily Av	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	99	48	*	*	*	48	99
12:15	*	101	32	*	*	*	32	101
12:30	*	100	28	*	*	*	28	100
12:45	*	106	28	*	*	*	28	106
01:00	*	95	19	*	*	*	19	95
01:15	*	112	18	*	*	*	18	112
01:30	*	137	12	*	*	*	12	137
01:45	*	123	12 12	*	*	*	12 12	123
02:00	18	117	*	*	*	*	18	117
02:15	9	130	*	*	*	*	9	130
02:30	10	115	*	*	*	*	10	115
02:45	11	112	*	*	*	*	11	112
02.45	11	122	*	*	*	*	14	122
	14			*	*	*	14	
03:15	16	128	•	*		*	16	128
03:30	9	116		*	*	*	9	116
03:45	7	132	*	*	*		7	132
04:00	6	139	*	*	*	*	6	139
04:15	9	122	*	*	*	*	6 9 7	122
04:30	7	113	*	*	*	*	7	113
04:45	8	102	*	*	*	*	8	102
05:00	5	97	*	*	*	*	5 9	97
05:15	9	107	*	*	*	*	9	107
05:30	21	96	*	*	*	*	21	96
05:45	13	82	*	*	*	*	13	82
06:00	23	85	*	*	*	*	23	85
06:15	26	88	*	*	*	*	26	88
06:30	30	73	*	*	*	*	30	73
06:45	30	81	*	*	*	*	30	81
07:00	39	67	*	*	*	*	39	67
07:15	62	71	*	*	*	*	62	71
07:30	42	51	*	*	*	*	42	51
07:45	46	65	*	*	*	*	46	65
08:00	55	45	*	*	*	*	55	45
08:15	58	58	*	*	*	*	58	58
00.10	79	52	*	*	*	*	70	50
08:30	79	32	*	*	*	*	79 75	52
08:45	75	40	*	*	*	*	75	40
09:00	60	65		*	*	*	60	65
09:15	84	42	*	*	*	*	84	42
09:30	75	47		*	*	*	75	47
09:45	97	62	*	*			97	62
10:00	93	41	*	*	*	*	93	41
10:15	91	53	*	*	*	*	91	53
10:30	81	54	*	*	*	*	81	54
10:45	101	41	*	*	*	*	101	41
11:00	86	52	*	*	*	*	86	52
11:15	89	47	*	*	*	*	89	47
11:30	94	34	*	*	*	*	94	34
11:45	82	45	*	*	*	*	82	45
Total	1770	4062	197	0	0	0	1967	4062
Combined								
Total	58	32	19	97	0	1	6029	1
Peak	10:45	03:15	12:00				10:45	03:15
	370	515	136				370	515
Vol.								
Vol. P.H.F.	0.916	0.926	0.708				0.916	0.926

Accident Summary Report (R-8)

Time Period Covered: Fr	om 01/01/20	10 To 12/31	2012 Prepare	ed By:	Rahul Jain	Prepared Da	ite: 9	9/15/2013
Total Number of Accident:		93	Collision Type	#ACC	%	Collision Type	#ACC	; %
Total Number of Fatalities:		0	Right Angle:	27	29.0%	Fixed Object:	2	2.2%
Total Number of Injuries:		42	Left Turn:	4	4.3%	Ran Off Road:	0	0.0%
Total Number of Disabling In	juries:	0	Right Turn:	25	26.9%	Ped. Involved:	1	1.1%
Total Number of NonDisablin	g Injuries:	4	Rear End:	7	7.5%	Backing:	0	0.0%
Total Number of Pedestrians	Involved:	1	Side Swiped:	22	23.7%	Non Collision:	0	0.0%
Total Number of Bicycles Inv	olved:	0	Head On:	0	0.0%	Under/Over Ride:	: 0	0.0%
Total Number of Motorcycles	Involved:	1	Parked:	0	0.0%	Unspecified:	5	5.4%
Time of Day	#ACC	%			Day o fweek	#AC	c	%
07:30 ~ 09:30:	13	14.0%			Sunday:	5		5.4%
09:30 ~ 11:30:	8	8.6%			Monday:	12		12.9%
11:30 ~ 13:30:	7	7.5%			Tuesday:	19		20.4%
13:30 ~ 16:00:	17	18.3%			Wednesday:	17		18.3%
16:00 ~18:30:	29	31.2%			Thursday:	14		15.1%
18:30 ~ 07:30:	19	20.4%			Friday:	18		19.4%
Unspecified:	0	0.0%			Saturday:	8		8.6%
Weather Condition	#ACC	%			Surface Condition	1 #AC	:C	%
Clear:	80	86.0%			Dry:	80		86.0%
Rain:	9	9.7%			Wet:	11		11.8%
Snow:	2	2.2%			Snow/Ice:	2		2.2%
Sleet/Hail:	0	0.0%			Slush:	0		0.0%
Fog/Mist:	0	0.0%			Water/Sand:	0		0.0%
Crosswind/Blowing Sand:	1	1.1%			Repairing:	0		0.0%
Unspecified:	1	1.1%			Unspecified:	0		0.0%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	c	%
Passenger Car:	133	71.5%			Fatal Collision:	0		0.0%
Bus:	13	7.0%			Injury Collision:	29		31.2%
Truck:	21	11.3%			PDO Collision:	64		68.8%
Taxi:	4	2.2%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	2	1.1%			Daylight:	74		79.6%
Motorcycle/Moped:	1	0.5%			Dawn/Dusk:	3		3.2%
Bicycle:	0	0.0%			Dark(Lighted):	16		17.2%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	12	6.5%			Dark(Unknown Ligh	nting): 0		0.0%
					Unspecified:	0		0.0%
Contributing Factor	#VEH	%			Pedestrian Action	s #AC	c	%
Driver: Speed:	3	1.6%			In Crosswalk with S	Signal: 0		0.0%
Driver: Alcohol/Drug:	0	0.0%			In Crosswalk again	st Signal: 0		0.0%
Driver: Electronic Device:	1	0.5%			In Crosswalk no Sig	gnal: 1		100.0%
Driver: Others:	30	16.1%			In Unmarked Cross	swalk: 0		0.0%
Vehicle:	1	0.5%			Not in Crosswalk:	0		0.0%
Roadway:	4	2.2%			From Between Par	ked Cars: 0		0.0%
Unspecified:	147	79.0%			Unspecified:	0		0.0%

54 Records are not approved as of 9/15/2013 11:20:45 AM

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

	om 08/31/20				O NINTEENTH ST,S Rahul Jain	Prepared Da	te: 1	1/18/20
Total Number of Accident:		62	Collision Type	#ACC	%	Collision Type	#ACC	9
Total Number of Fatalities:		0	Right Angle:	19	30.6%	Fixed Object:	2	3.2%
Total Number of Injuries:		26	Left Turn:	2	3.2%	Ran Off Road:	0	0.0%
Total Number of Disabling In	juries:	0	Right Turn:	12	19.4%	Ped. Involved:	1	1.6%
Total Number of NonDisablin	ng Injuries:	3	Rear End:	3	4.8%	Backing:	1	1.6%
Total Number of Pedestrians	Involved:	1	Side Swiped:	20	32.3%	Non Collision:	0	0.0%
Total Number of Bicycles Inv	olved:	0	Head On:	0	0.0%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles	Involved:	0	Parked:	0	0.0%	Unspecified:	2	3.2%
Time of Day	#ACC	%			Day o fweek	#AC	c	9/
07:30 ~ 09:30:	10	16.1%			Sunday:	2		3.2%
09:30 ~ 11:30:	6	9.7%			Monday:	7		11.3%
11:30 ~ 13:30:	4	6.5%			Tuesday:	12		19.4%
13:30 ~ 16:00:	13	21.0%			Wednesday:	16		25.8%
16:00 ~18:30:	19	30.6%			Thursday:	13		21.0%
18:30 ~ 07:30:	10	16.1%			Friday:	7		11.3%
Unspecified:	0	0.0%			Saturday:	5		8.1%
Weather Condition	#ACC	%			Surface Condition	#AC	C	%
Clear:	51	82.3%			Dry:	52		83.9%
Rain:	6	9.7%			Wet:	8		12.9%
Snow:	2	3.2%			Snow/Ice:	2		3.2%
Sleet/Hail:	1	1.6%			Slush:	0		0.0%
Fog/Mist:	0	0.0%			Water/Sand:	0		0.0%
Crosswind/Blowing Sand:	1	1.6%			Repairing:	0		0.0%
Unspecified:	1	1.6%			Unspecified:	0		0.0%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	C	%
Passenger Car:	88	74.6%			Fatal Collision:	0		0.0%
Bus:	8	6.8%			Injury Collision:	17		27.4%
Truck:	13	11.0%			PDO Collision:	45		72.6%
Taxi:	2	1.7%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	2	1.7%			Daylight:	50		80.6%
Motorcycle/Moped:	0	0.0%			Dawn/Dusk:	1		1.6%
Bicycle:	0	0.0%			Dark(Lighted):	11		17.7%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	5	4.2%			Dark(Unknown Ligh	nting): 0		0.0%
					Unspecified:	0		0.0%
Contributing Factor	#VEH	%			Pedestrian Action	s #AC	C	%
Driver: Speed:	1	0.8%			In Crosswalk with S	Signal: 0		0.0%
Driver: Alcohol/Drug:	0	0.0%			In Crosswalk again:	st Signal: 0		0.0%
Driver: Electronic Device:	1	0.8%			In Crosswalk no Sig	gnal: 1		100.0%
Driver: Others:	14	11.9%			In Unmarked Cross	walk: 0		0.0%
Vehicle:	1	0.8%			Not in Crosswalk:	0		0.0%
Roadway:	4	3.4%			From Between Park	ked Cars: 0		0.0%
Unspecified:	97	82.2%			Unspecified:	0		0.0%

26 Records are not approved as of 11/18/2013 2:09:24 PM

Accident Summary Report (R-8)

	om 09/01/20				O NINTEENTH ST, Rahul Jain	Prepared Da	ite: 1	1/18/20
Total Number of Accident:		58	Collision Type	#ACC	%	Collision Type	#ACC	9/
Total Number of Fatalities:		0	Right Angle:	15	25.9%	Fixed Object:	0	0.0%
Total Number of Injuries:		29	Left Turn:	3	5.2%	Ran Off Road:	0	0.0%
Total Number of Disabling In	juries:	0	Right Turn:	18	31.0%	Ped. Involved:	1	1.7%
Total Number of NonDisablin	ng Injuries:	2	Rear End:	5	8.6%	Backing:	0	0.0%
Total Number of Pedestrians	Involved:	1	Side Swiped:	10	17.2%	Non Collision:	0	0.0%
Total Number of Bicycles Inv	olved:	0	Head On:	1	1.7%	Under/Over Ride	: 0	0.0%
Total Number of Motorcycles	Involved:	1	Parked:	0	0.0%	Unspecified:	5	8.6%
Time of Day	#ACC	%			Day o fweek	#AC	c	%
07:30 ~ 09:30:	6	10.3%			Sunday:	3		5.2%
09:30 ~ 11:30:	4	6.9%			Monday:	5		8.6%
11:30 ~ 13:30:	5	8.6%			Tuesday:	16		27.6%
13:30 ~ 16:00:	12	20.7%			Wednesday:	9		15.5%
16:00 ~18:30:	19	32.8%			Thursday:	8		13.8%
18:30 ~ 07:30:	12	20.7%			Friday:	12		20.7%
Unspecified:	0	0.0%			Saturday:	5		8.6%
Weather Condition	#ACC	%			Surface Condition	n #AC	:C	%
Clear:	49	84.5%			Dry:	48		82.8%
Rain:	6	10.3%			Wet:	9		15.5%
Snow:	0	0.0%			Snow/Ice:	0		0.0%
Sleet/Hail:	0	0.0%			Slush:	0		0.0%
Fog/Mist:	2	3.4%			Water/Sand:	0		0.0%
Crosswind/Blowing Sand:	0	0.0%			Repairing:	0		0.0%
Unspecified:	1	1.7%			Unspecified:	1		1.7%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	C C	%
Passenger Car:	82	71.3%			Fatal Collision:	0		0.0%
Bus:	11	9.6%			Injury Collision:	19		32.8%
Truck:	11	9.6%			PDO Collision:	39		67.2%
Taxi:	4	3.5%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	1	0.9%			Daylight:	46		79.3%
Motorcycle/Moped:	1	0.9%			Dawn/Dusk:	3		5.2%
Bicycle:	0	0.0%			Dark(Lighted):	8		13.8%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	5	4.3%			Dark(Unknown Lig	hting): 0		0.0%
	·				Unspecified:	1		1.7%
Contributing Factor	#VEH	%			Pedestrian Action	ns #AC	c	%
Driver: Speed:	2	1.7%			In Crosswalk with	Signal: 1		100.0%
Driver: Alcohol/Drug:	0	0.0%			In Crosswalk again	st Signal: 0		0.0%
Driver: Electronic Device:	0	0.0%			In Crosswalk no Si	gnal: 0		0.0%
Driver: Others:	26	22.6%			In Unmarked Cross	-		0.0%
Vehicle:	0	0.0%			Not in Crosswalk:	0		0.0%
Roadway:	1	0.9%			From Between Par	ked Cars: 0		0.0%
Unspecified:	86	74.8%			Unspecified:	0		0.0%

³³ Records are not approved as of 11/18/2013 2:08:06 PM