



## Speed Limit and Safety Nexus Studies for Automated Enforcement Locations in the District of Columbia 4200 Block South Dakota Avenue NE

## Study Area and Location

District	PSA	Ward	ANC	Phase	Description
5	504	5	5A	Existing	4200 Block South Dakota Avenue Northeast
					Northwest-bound



This existing speed camera location is located in Ward 5 on the 4200 block of South Dakota Avenue Northeast in the northwest-bound direction. South Dakota Avenue runs between Riggs Road Northeast to the north and New York Avenue Northeast to the south. The posted speed limit is 25 MPH. This speed camera was installed on July 2010.





# Field Assessment Summary

South Dakota Avenue is assumed to run in the northwest-southeast direction, and is classified as a principal arterial. South Dakota Avenue has two travel lanes in each direction. This site has the following characteristics:

- This is a residential area with driveways.
- There are three schools in the area: Perry Street Preparatory School, Howard University- School of Divinity and Bunker Hill Elementary School.
- There is sidewalk on both sides of the street and crosswalks at Michigan Avenue and Taylor Street.
- There are traffic signals and pedestrian signals at Michigan Avenue and Taylor Street.
- The pavement is in good condition and the drainage type is curb and gutter with drainage inlets. There is a slope upgrade in the northeast-bound direction.
- There is a bus stop northwest-bound before Michigan Avenue.
- There is a bus stop southeast-bound before Taylor Street.



Looking Northbound





**Speed Data Analysis** 

Posted Speed Limit (MPH)	25
Mean Speed (MPH)	14
85th Percentile Speed (MPH)	25
10 MPH Pace Speed (MPH)	4-13
ADT	11,641

The mean speed is lower than the posted speed limit by 11 MPH and the 85<sup>th</sup> percentile speed is equal to the posted speed at this location.

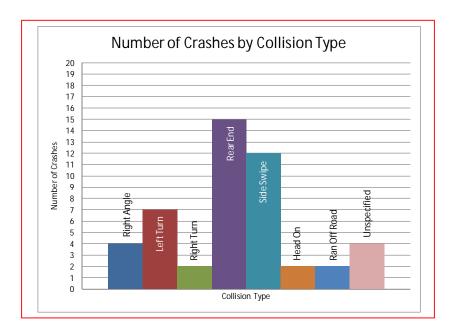
### Crash Data Analysis

From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 48 crashes at this location. A breakdown of collision type can be found in the chart on the next page. The most common types of collision at this location were Rear End (15 crashes), Side Swipe (12 crashes), and Left Turn (7 crashes). The other collision types had four crashes or less each.

W5 - 100



Se	Severity			Weather			condit	ion	Light Condition		
Total	48										
Fatal	0	0.0%	Clear	38	79.2%	Dry	37	77.1%	Day	29	60.4%
Injury	20	41.7%	Rain	5	10.4%	Wet	7	14.6%	Night	15	31.3%
Truck	7	14.6%	Snow	2	4.2%	Snow/Ice	1	2.1%			
Bus	3	6.3%			_						



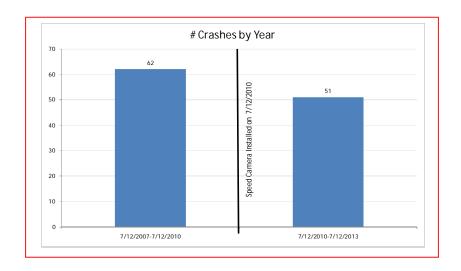
There were an elevated number of speed-related crashes at this location, including rear end and side swipe crashes. The AASHTO Highway Safety Manual lists "assuming the lead driver will go through a green or yellow light, but the lead driver stops" and "changing lanes to avoid a slowing or stopped vehicle"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

The camera was installed on 7-12-2010. The graph on the next page shows the number of crashes in the three years prior to the speed camera's installation (62 crashes) and the two years after the speed camera's installation (51 crashes). There was a decrease in the number of crashes after the installation of the camera.

W5 - 101

<sup>&</sup>lt;sup>1</sup> AASHTO Highway Safety Manual, 1<sup>st</sup> Edition, 2010; Volume 1, page 2-13





### Safety Nexus

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

- 1. Speed Data The speed data analysis shows travel speeds being lower or the same as the posted speed limit.
- 2. Crash Data There was an elevated number of speed-related crashes at this location, including rear end and side swipe collisions. There was a decrease in the number of crashes after the installation of the 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 driveways.
  - b. There are three schools in the area: Perry Street Preparatory School, Howard University- School of Divinity and Bunker Hill Elementary School.
  - c. There are several bus stops in the area which generate pedestrian activity.

Although the speed data analysis showed the mean and 85th percentile speeds to be lower or the same as the posted speed limit, due to the elevated number of speed-related crashes, the specific site characteristics, the proximity of schools to the site, and other 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

#### 4200 block of South Dakota Ave NE NWB Speed

NEB															
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
11/12/13	48	1	7	18	12	3	0	0	0	0	0	0	0	0	89
01:00	72	0	6	18	20	1	0	0	0	0	0	0	0	0	117
02:00	62	0	4	20	14	8	0	0	0	0	0	0	0	0	108
03:00	49	0	11	24	16	4	1	0	0	0	0	0	0	0	105
04:00	91	2	9	32	19	5	2	0	0	0	0	0	0	0	160
05:00	228	0	33	70	69	19	2	0	0	0	0	0	0	0	421
06:00	353	7	75	146	93	30	4	0	0	0	0	0	0	0	708
07:00	434	20	93	141	76	14	1	0	0	1	0	0	0	0	780
08:00	385	20	71	91	62	9	0	1	0	0	0	0	0	0	639
09:00	422	18	70	133	57	13	1	0	0	0	0	0	0	0	714
10:00	375	24	70	71	35	2	0	0	0	0	0	0	0	0	577
11:00	340	22	60	67	29	4	0	0	0	0	0	0	0	0	522
12 PM	368	26	77	70	26	6	0	0	0	0	0	0	0	0	573
13:00	403	17	66	59	31	1	1	0	0	0	0	0	0	0	578
14:00	371	35	65	72	29	9	0	0	0	0	0	0	0	0	581
15:00	416	23	90	106	28	6	0	0	0	0	0	0	0	0	669
16:00	420	20	75	90	48	3	3	0	0	0	0	0	0	0	659
17:00	435	13	118	101	39	3	0	0	0	0	0	0	0	0	709
18:00	433	23	107	99	36	3	0	0	0	0	0	0	0	0	701
19:00	326	2	48	71	23	3	0	0	0	0	0	0	0	0	473
20:00	299	2	39	75	43	4	1	0	0	0	0	0	0	0	463
21:00	305	11	48	93	34	8	0	1	0	0	0	0	0	0	500
22:00	236	3	40	61	48	6	1	0	0	0	0	0	0	0	395
23:00	197	5	17	42	36	10	0	0	0	0	0	0	0	0	307
Total	7068	294	1299	1770	923	174	17	2	0	1	0	0	0	0	11548

# SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD MOUNT AIRY, MD 21771

www.sammateng.com

#### 4200 block of South Dakota Ave NE NWB Speed

NEB															
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
11/13/13	59	4	8	11	10	1	0	0	0	0	0	0	0	0	93
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	59	4	8	11	10	1	0	0	0	0	0	0	0	0	93
Grand Total	7127	298	1307	1781	933	175	17	2	0	1	0	0	0	0	11641

 15th Percentile :
 4 MPH

 50th Percentile :
 9 MPH

 85th Percentile :
 25 MPH

 95th Percentile :
 31 MPH

 Stats
 Mean Speed(Average) :
 14 MPH

 10 MPH Pace Speed :
 4-13 MPH

 Number in Pace :
 6937

 Percent in Pace :
 59.6%

 Number of Vehicles > 25 MPH :
 1898

 Percent of Vehicles > 25 MPH :
 16.3%

# SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD MOUNT AIRY, MD 21771

www.sammateng.com

#### 4200 block of South Dakota Ave NE NWB Volume

Start	Tue	12-Nov-13	Wed	13-Nov-13	Thu	14-Nov-13	Daily A	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	145	63	*	*	*	63	1
12:15	*	135	30	*	*	*	30	1
12:30	42	137	*	*	*	*	42	1
12:45	47	156	*	*	*	*	47	1
01:00	36	141	*	*	*	*	36	1
01:15	37	137	*	*	*	*	37	1
01:30	31	149	*	*	*	*	31	1
01:45	13	151	*	*	*	*	13	1
02:00	18	142	*	*	*	*	18	1
02:15	30	128	*	*	*	*	30	1
02:30	33	152	*	*	*	*	33	1
02:45	27	159	*	*	*	*	27	1
03:00	22	177	*	*	*	*	22	1
03:15	24	169	*	*	*	*	24	1
03:30	32	165	*	*	*	*	32	1
03:45	27	158	*	*	*	*	27	
04:00	25	157	*	*	*	*	25	
04:00	39	193	*	*	*	*	39	
04:13		176	*	*	*	*	37	
04:30	37 59	133	*	*	*	*	59	1
04:45			*	*	*	*	67	1
05:00	67	175	*	*	*	*		1
05:15	87	172	*	*	*	*	87	
05:30	140	177	*	*	*	*	140	
05:45	127	185					127	•
06:00	125	187	*	*	*	*	125	
06:15	177	170	*	*		*	177	
06:30	188	166	*	*	*	*	188	1
06:45	218	178	*	*	*	*	218	1
07:00	195	126	*	*	*	*	195	1
07:15	201	133	*	*	*	*	201	
07:30	179	109	*	*	*	*	179	
07:45	205	105	*	*	*	*	205	1
08:00	174	117	*	*	*	*	174	
08:15	167	106	*	*	*	*	167	
08:30	149	140	*	*	*	*	149	
08:45	149	100	*	*	*	*	149	
09:00	174	110	*	*	*	*	174	
09:15	193	144	*	*	*	*	193	
09:30	171	117	*	*	*	*	171	
09:45	176	129	*	*	*	*	176	
10:00	159	101	*	*	*	*	159	
10:15	149	80	*	*	*	*	149	
10:30	132	115	*	*	*	*	132	
10:45	137	99	*	*	*	*	137	
11:00	133	85	*	*	*	*	133	
11:15	129	78	*	*	*	*	129	
11:30	123	73	*	*	*	*	123	
11:45	137	73 71	*	*	*	*	137	
Total	4940	6608	93	0	0	0	5033	66
Combined		548	93		0		1164	
<u>Total</u>	06.30	05.15				·	06.30	05
Peak	06:30	05:15					06:30	05
Vol.	802	721					802	7
P.H.F.	0.920	0.964		_			0.920	0.96
ADT		ADT 11,641	AADT 11,641					

# 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	te: 9	9/15/2013
Total Number of Accident:		48	Collision Type	#ACC	%	Collision Type	#ACC	. 9
Total Number of Fatalities:		0	Right Angle:	4	8.3%	Fixed Object:	0	0.0%
Total Number of Injuries:		33	Left Turn:	7	14.6%	Ran Off Road:	2	4.2%
Total Number of Disabling In	juries:	0	Right Turn:	2	4.2%	Ped. Involved:	0	0.0%
Total Number of NonDisablin	g Injuries:	5	Rear End:	15	31.3%	Backing:	0	0.0%
Total Number of Pedestrians	Involved:	0	Side Swiped:	12	25.0%	Non Collision:	0	0.0%
Total Number of Bicycles Inv	olved:	0	Head On:	2	4.2%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles	Involved:	0	Parked:	0	0.0%	Unspecified:	4	8.3%
Time of Day	#ACC	%			Day o fweek	#AC	C	9/
07:30 ~ 09:30:	10	20.8%			Sunday:	5		10.4%
09:30 ~ 11:30:	8	16.7%			Monday:	5		10.4%
11:30 ~ 13:30:	3	6.3%			Tuesday:	9		18.8%
13:30 ~ 16:00:	4	8.3%			Wednesday:	12		25.0%
16:00 ~18:30:	8	16.7%			Thursday:	7		14.6%
18:30 ~ 07:30:	15	31.3%			Friday:	6		12.5%
Unspecified:	0	0.0%			Saturday:	4		8.3%
Weather Condition	#ACC	%			Surface Condition	#AC	c	%
Clear:	38	79.2%			Dry:	37		77.1%
Rain:	5	10.4%			Wet:	7		14.6%
Snow:	2	4.2%			Snow/Ice:	1		2.1%
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	6.3%			Unspecified:	3		6.3%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	c	%
Passenger Car:	80	83.3%			Fatal Collision:	0		0.0%
Bus:	3	3.1%			Injury Collision:	20		41.7%
Truck:	7	7.3%			PDO Collision:	28		58.3%
Taxi:	0	0.0%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	0	0.0%			Daylight:	29		60.4%
Motorcycle/Moped:	0	0.0%			Dawn/Dusk:	3		6.3%
Bicycle:	0	0.0%			Dark(Lighted):	15		31.3%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	6	6.3%			Dark(Unknown Ligh	nting): 0		0.0%
					Unspecified:	1		2.1%
Contributing Factor	#VEH	%			Pedestrian Action	s #AC	С	%
Driver: Speed:	1	1.0%			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:	0	0.0%			In Crosswalk no Sig	gnal: 0		0.0%
Driver: Others:	18	18.8%			In Unmarked Cross	walk: 0		0.0%
Vehicle:	1	1.0%			Not in Crosswalk:	0		0.0%
Roadway:	2	2.1%			From Between Park	ked Cars: 0		0.0%
Unspecified:	74	77.1%			Unspecified:	0		0.0%

#### DC Department of Transportation - Traffic Accident Reporting and Analysis System

# Accident Summary Report (R-8)

	om 07/11/20		CHIGAN AVE,NE 1/2010 Prepare		Rahul Jain	Prepared Da	ite: 1	1/18/20
Total Number of Accident:		62	Collision Type	#ACC	%	Collision Type	#ACC	9/
Total Number of Fatalities:		0	Right Angle:	14	22.6%	Fixed Object:	0	0.0%
Total Number of Injuries:		27	Left Turn:	11	17.7%	Ran Off Road:	0	0.0%
Total Number of Disabling In	juries:	3	Right Turn:	3	4.8%	Ped. Involved:	1	1.6%
Total Number of NonDisablin	ng Injuries:	6	Rear End:	14	22.6%	Backing:	0	0.0%
Total Number of Pedestrians		3	Side Swiped:	13	21.0%	Non Collision:	0	0.0%
Total Number of Bicycles Inv	olved:	0	Head On:	3	4.8%	Under/Over Ride	: 0	0.0%
Total Number of Motorcycles	Involved:	2	Parked:	1	1.6%	Unspecified:	2	3.2%
Time of Day	#ACC	%			Day o fweek	#AC	c	9/
07:30 ~ 09:30:	6	9.7%			Sunday:	7		11.3%
09:30 ~ 11:30:	6	9.7%			Monday:	9		14.5%
11:30 ~ 13:30:	8	12.9%			Tuesday:	7		11.3%
13:30 ~ 16:00:	14	22.6%			Wednesday:	13		21.0%
16:00 ~18:30:	9	14.5%			Thursday:	9		14.5%
18:30 ~ 07:30:	19	30.6%			Friday:	8		12.9%
Unspecified:	0	0.0%			Saturday:	9		14.5%
Weather Condition	#ACC	%			Surface Condition	n #AC	c	%
Clear:	53	85.5%			Dry:	53		85.5%
Rain:	6	9.7%			Wet:	7		11.3%
Snow:	1	1.6%			Snow/Ice:	1		1.6%
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:	2	3.2%			Unspecified:	1		1.6%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	c	%
Passenger Car:	95	74.2%			Fatal Collision:	0		0.0%
Bus:	3	2.3%			Injury Collision:	19		30.6%
Truck:	13	10.2%			PDO Collision:	43		69.4%
Taxi:	2	1.6%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	4	3.1%			Daylight:	40		64.5%
Motorcycle/Moped:	2	1.6%			Dawn/Dusk:	2		3.2%
Bicycle:	0	0.0%			Dark(Lighted):	11		17.7%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	9	7.0%			Dark(Unknown Lig	hting): 7		11.3%
C. Topoullou.	· ·	, .			Unspecified:	2		3.2%
Contributing Factor	#VEH	%			Pedestrian Action	ns #AC	c	%
Driver: Speed:	2	1.6%			In Crosswalk with	Signal: 0		0.0%
Driver: Alcohol/Drug:	2	1.6%			In Crosswalk agair	st Signal: 1		50.0%
Driver: Electronic Device:	0	0.0%			In Crosswalk no Si	gnal: 0		0.0%
Driver: Others:	30	23.4%			In Unmarked Cross	swalk: 0		0.0%
Vehicle:	0	0.0%			Not in Crosswalk:	0		0.0%
Roadway:	2	1.6%			From Between Par	ked Cars: 0		0.0%
Unspecified:	92	71.9%			Unspecified:	1		50.0%

50 Records are not approved as of 11/18/2013 5:00:44 PM

# Accident Summary Report (R-8)

	om 07/12/20				HTEENTH ST,NE Rahul Jain	Prepared Da	te: 1	1/18/20
Total Number of Accident:		51	Collision Type	#ACC	%	Collision Type	#ACC	9/
Total Number of Fatalities:		0	Right Angle:	3		Fixed Object:	1	2.0%
Total Number of Injuries:		45	Left Turn:	9	17.6%	Ran Off Road:	2	3.9%
Total Number of Disabling In	juries:	1	Right Turn:	2	3.9%	Ped. Involved:	0	0.0%
Total Number of NonDisablin	ng Injuries:	6	Rear End:	13	25.5%	Backing:	0	0.0%
Total Number of Pedestrians		0	Side Swiped:	12	23.5%	Non Collision:	1	2.0%
Total Number of Bicycles Inv	olved:	0	Head On:	4	7.8%	Jnder/Over Ride:	0	0.0%
Total Number of Motorcycles		0	Parked:	0	0.0% l	Inspecified:	4	7.8%
Time of Day	#ACC	%			Day o fweek	#AC	C	9/
07:30 ~ 09:30:	10	19.6%			Sunday:	6		11.8%
09:30 ~ 11:30:	11	21.6%			Monday:	3		5.9%
11:30 ~ 13:30:	4	7.8%			Tuesday:	10		19.6%
13:30 ~ 16:00:	3	5.9%			Wednesday:	11		21.6%
16:00 ~18:30:	6	11.8%			Thursday:	6		11.8%
18:30 ~ 07:30:	17	33.3%			Friday:	7		13.7%
Unspecified:	0	0.0%			Saturday:	8		15.7%
Weather Condition	#ACC	%			Surface Condition	#AC	c	%
Clear:	39	76.5%			Dry:	38		74.5%
Rain:	7	13.7%			Wet:	9		17.6%
Snow:	2	3.9%			Snow/Ice:	1		2.0%
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:	3	5.9%			Unspecified:	3		5.9%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	c	%
Passenger Car:	83	82.2%			Fatal Collision:	0		0.0%
Bus:	4	4.0%			Injury Collision:	23		45.1%
Truck:	7	6.9%			PDO Collision:	28		54.9%
Taxi:	0	0.0%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	0	0.0%			Daylight:	32		62.7%
Motorcycle/Moped:	0	0.0%			Dawn/Dusk:	2		3.9%
Bicycle:	0	0.0%			Dark(Lighted):	15		29.4%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	7	6.9%			Dark(Unknown Ligh	ting): 0		0.0%
<b>С</b> ороолиов.	·	0.070			Unspecified:	2		3.9%
Contributing Factor	#VEH	%			Pedestrian Actions	s #AC	С	%
Driver: Speed:	1	1.0%			In Crosswalk with S	ignal: 0		0.0%
Driver: Alcohol/Drug:	1	1.0%			In Crosswalk agains	st Signal: 0		0.0%
Driver: Electronic Device:	0	0.0%			In Crosswalk no Sig	nal: 0		0.0%
Driver: Others:	14	13.9%			In Unmarked Cross	walk: 0		0.0%
Vehicle:	1	1.0%			Not in Crosswalk:	0		0.0%
Roadway:	1	1.0%			From Between Park	ed Cars: 0		0.0%
Unspecified:	83	82.2%			Unspecified:	0		0.0%

<sup>34</sup> Records are not approved as of 11/18/2013 5:19:38 PM