



Speed Limit and Safety Nexus Studies for Automated Enforcement Locations in the District of Columbia 3400 Block Benning Road NE

Study	Area	and Loo	cation		
District	PSA	Ward	ANC	Phase	Description
6	601	7	7D	Existing	3400 Block Benning Road Northeast Westbound



The existing speed camera is located in Ward 7 at the 3400 block of Benning Road Northeast in the westbound direction. Benning Road runs between Southern Avenue Southeast to the southeast and Maryland Avenue Northeast to the northwest. The speed camera was installed on September 2005. The posted speed limit is 30 MPH.

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District Department of Transportation 3400 Block Benning Road NE

Field Assessment Summary

Benning Road is assumed to run in an east-west direction, and is classified as a principal arterial. Benning Road has three travel lanes in each direction. This site has the following characteristics:

- This is a residential area with houses.
- The Anacostia Park, Anacostia Riverwalk Trail, and the Kingman Island Trail are nearby.
- There is one school in the area: River Terrace Elementary School.
- There is a grassy median and a traffic signal with pedestrian signals and crosswalks at 34th Street and exit and entrance ramps for DC 295.
- The pavement is in fair condition and there is curb and gutter with drainage inlets.
- There are bus stops in both directions east of 34th Street.









Speed Data Analysis

Posted Speed Limit (MPH)	30
Mean Speed (MPH)	17
85th Percentile Speed (MPH)	24
10 MPH Pace Speed (MPH)	15-24
ADT	17,486

The mean speed is lower than the posted speed limit by 13 MPH and the 85th percentile speed is lower than the posted speed by 6 MPH at this location.

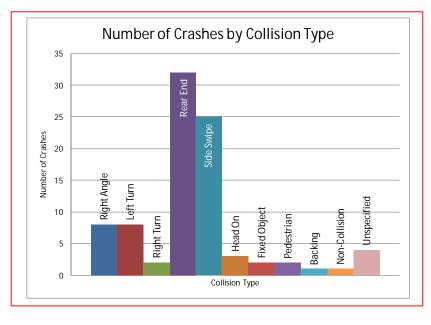
Crash Data Analysis

From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012 there were a total of 88 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 crashes at this location were Rear End (32 crashes), Side Swiped (25 crashes), Right Angle (8 crashes) and Left Turn (8 crashes). There was one fatal crash at this location. Furthermore, this site experienced a high frequency (40 crashes) of injury-related crashes.



d.	
District Department of Transporta	ition
3400 Block Benning Road	NE

Se	Severity			Weather			conditi	on	Light Condition		
Total	88										
Fatal	1	1.1%	Clear	73	83.0%	Dry	72	81.8%	Day	66	75.0%
Injury	40	45.5%	Rain	10	11.4%	Wet	14	15.9%	Night	20	22.7%
Truck	23	26.1%	Fog/Mist	1	1.1%	Snow/Ice	0	0.0%			
Bus	13	14.8%									



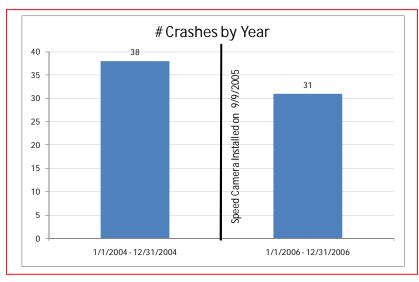
There was an elevated number of speed related crashes at this location, including rear end and side swipe crashes. The Highway Safety Manual lists "assuming the lead driver will go through a green or yellow light, but the lead driver stops" and "changing lanes to avoid a slowing or stopped vehicle"¹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

The speed camera was installed on 9/9/2005. The graph on the next page shows the number of crashes in the year prior to the speed camera's installation (38 crashes) and the year after the speed camera's installation (31 crashes). The number of crashes decreased after the installation of the camera. There was one fatal crash prior to installation and zero fatal crashes in the year after the camera's installation.

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







The Benning Road Corridor is listed as one of the top ten high frequency crash corridors from 2009 to 2011, according to the report *TRAFFIC SAFETY STATISTICS REPORT FOR THE DISTRICT OF COLUMBIA (2009-2011)*².

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 speed data analysis shows travel speeds being lower than 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, as well as a high frequency (40 crashes) of injury-related crashes. There was a reduction in the number of crashes after the installation of the camera. The Benning Road Corridor is listed as one of the top ten high frequency crash corridors from 2009 to 2011.
- 3. Field Assessment The following site characteristics suggest a need for a safer travel environment:
 - a. This is a residential area with houses.
 - b. There is one school in the area: River Terrace Elementary School.
 - c. The Anacostia Park, Anacostia Riverwalk Trail, and Kingman Island Trail are nearby which generate pedestrian and bicycle activity.
 - d. 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 than the posted speed limit, due to the elevated number of speed-related crashes and injury-related crashes, the specific site

² DDOT, TRAFFIC SAFETY STATISTICS REPORT FOR THE DISTRICT OF COLUMBIA (2009-2011), pg.80.

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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

3400 block of Benning Rd NE WB Speed

WB															
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
11/22/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	5	28	44	23	1	1	0	0	0	0	0	0	0	0	102
03:00	8	17	66	24	2	0	0	0	0	0	0	0	0	0	117
04:00	7	57	93	52	3	3	0	0	0	0	0	0	0	0	215
05:00	41	129	289	156	32	1	0	0	0	0	0	0	0	0	648
06:00	139	211	389	243	25	1	0	0	0	0	0	0	0	0	1008
07:00	304	347	356	139	14	1	0	0	0	0	0	0	0	0	1161
08:00	283	298	343	126	12	0	0	0	0	0	0	0	0	0	1062
09:00	208	256	313	128	8	0	0	0	0	0	0	0	0	0	913
10:00	167	260	298	118	10	0	0	0	0	0	0	0	0	0	853
11:00	136	265	300	139	11	1	0	0	0	0	0	0	0	0	852
12 PM	145	291	377	147	8	1	0	0	0	0	0	0	0	0	969
13:00	196	257	295	132	13	0	0	0	0	0	0	0	0	0	893
14:00	191	290	262	96	12	0	0	0	0	0	0	0	0	0	851
15:00	228	297	292	142	14	0	0	0	0	0	0	0	0	0	973
16:00	241	269	306	113	12	1	0	0	0	0	0	0	0	0	942
17:00	328	333	295	87	7	0	0	0	0	0	0	0	0	0	1050
18:00	335	319	219	49	4	0	0	0	0	0	0	0	0	0	926
19:00	167	298	230	57	2	0	0	0	0	0	0	0	0	0	754
20:00	130	225	214	60	2	0	0	0	0	0	0	0	0	0	631
21:00	150	246	228	44	4	0	0	0	0	0	0	0	0	0	672
22:00	128	239	245	60	6	0	0	0	0	0	0	0	0	0	678
23:00	88	175	196	59	4	0	0	0	0	0	0	0	0	0	522
Total	3625	5107	5650	2194	206	10	0	0	0	0	0	0	0	0	16792

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD MOUNT AIRY, MD 21771

www.sammateng.com

3400 block of Benning Rd NE WB Speed

Number in Pace :

Percent in Pace :

Number of Vehicles > 30 MPH :

Percent of Vehicles > 30 MPH :

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	57	104	156	60	3	0	0	0	0	0	0	0	0	0	380
01:00	41	111	128	31	3	0	0	0	0	0	0	0	0	0	314
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	98	215	284	91	6	0	0	0	0	0	0	0	0	0	694
Grand	3723	5322	5934	2285	212	10	0	0	0	0	0	0	0	0	17486
Total	5725	5522	5554	2205	212	10	0	0	0	0	0	0	0	0	17400
				Percentile : Percentile :		8 MPH 17 MPH									
				Percentile :		24 MPH									
				Percentile :		24 MPH 27 MPH									
Stats			ean Speed(A 0 MPH Pace		15-24 N	17 МРН ИРН									

8163

46.7%

356

2.0%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD MOUNT AIRY, MD 21771

www.sammateng.com

3400 block of Benning Rd NE WB Volume

Start	Fri	22-Nov-13	Sat	23-Nov-13	Sun	24-Nov-13	Daily A	
Time	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	235	98	*	*	*	98	235
12:15	*	226	112	*	*	*	112	226
12:30	*	268	83	*	*	*	83 87	268
12:45	*	240	87	*	*	*	87	240
01:00	*	215	91	*	*	*	91	215
01:15	*	219	93	*	*	*	93	219
01:30	*	230	67	*	*	*	67	230
01:45	*	229	63	*	*	*	63	229
02:00	30	183	*	*	*	*	30	183
02:15	22	227	*	*	*	*	22	227
02:30	26	221	*	*	*	*	26	221
02:45	24	220	*	*	*	*	24	220
03:00	28	232	*	*	*	*	28	232
03:15	29	240	*	*	*	*	28 29	240
03:30	28	263	*	*	*	*	29	263
03:45	32	238	*	*	*	*	28 32	238
03.45	32	238	*	*	*	*	32	238
04:00	45	240	*	*	*	*	45	
04:15			*	*	*	*	45	232
04:30	56	247	*	*	*	*	56	247
04:45	80	215					80	215
05:00	89	223	*	*	*	*	89	223
05:15	147	281	*	*	*	*	147	281
05:30	216	288	*	*	*	*	216	288
05:45	196	258	*	*	*	*	196	258
06:00	235	221	*	*	*	*	235	221
06:15	241	257	*	*	*	*	241	257
06:30	264	221	*	*	*	*	264	221
06:45	268	227	*	*	*	*	268	227
07:00	284	206	*	*	*	*	284	206
07:15	262	197	*	*	*	*	262	197
07:30	284	177	*	*	*	*	284	177
07:45	331	174	*	*	*	*	331	174
08:00	282	179	*	*	*	*	282	179
08:15	287	140	*	*	*	*	287	140
08:30	258	151	*	*	*	*	258	151
08:45	235	161	*	*	*	*	235	161
09:00		178	*	*	*	*		
09:00	261 226	163	*	*	*	*	261 226	178
			*	*	*	*		163
09:30	216	173	*	*	*	*	216	173
09:45	210	158	*	*	*		210	158
10:00	220	166	*	*	*	*	220	166
10:15	227	188					227	188
10:30	206	157	*	*	*	*	206	157
10:45	200	167	*	*	*	*	200	167
11:00	203	135	*	*	*	*	203	135
11:15	202	155	*	*	*	*	202	155
11:30	241	119	*	*	*	*	241	119
11:45	206	113	*	*	*	*	206	113
Total	6931	9861	694	0	0	0	7625	9861
ombined	167		60	94	C)	17486	
Total					L. L.	,		
Peak	07:30	05:00	12:00				07:30	05:00
Vol.	1184	1050	380				1184	1050
P.H.F.	0.894	0.911	0.848				0.894	0.911
		ADT 17,486	AADT 17,486					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: BENNING Time Period Covered: F			SIXTH ST,NE TO		Rahul Jain	Prepared Da	te:	9/15/2013
Total Number of Accident:		88	Collision Type	#ACC		Collision Type	#AC	
Total Number of Fatalities:		1	Right Angle:	8		Fixed Object:	2	2.3%
Total Number of Injuries:		76	Left Turn:	8		Ran Off Road:	0	0.0%
Total Number of Disabling I	niuries:	2	Right Turn:	2		Ped. Involved:	2	2.3%
Total Number of NonDisable		17	Rear End:	32		Backing:	1	1.1%
Total Number of Pedestrian	0,	0	Side Swiped:	25		Non Collision:	1	1.1%
Total Number of Bicycles In		6	Head On:	3		Under/Over Ride:		0.0%
Total Number of Motorcycle		1	Parked:	0	0.0%	Unspecified:	4	4.5%
Time of Day	#ACC	%			Day o fweek	#AC	C	%
07:30 ~ 09:30:	12	13.6%			Sunday:	6		6.8%
09:30 ~ 11:30:	8	9.1%			Monday:	9		10.2%
11:30 ~ 13:30:	6	6.8%			Tuesday:	12		13.6%
13:30 ~ 16:00:	12	13.6%			Wednesday:	14		15.9%
16:00 ~18:30:	22	25.0%			Thursday:	14		15.9%
18:30 ~ 07:30:	28	31.8%			Friday:	15		17.0%
Unspecified:	0	0.0%			Saturday:	18		20.5%
Weather Condition	#ACC	%			Surface Condition	#AC	c	%
Clear:	73	83.0%			Dry:	72		81.8%
Rain:	10	11.4%			Wet:	14		15.9%
Snow:	0	0.0%			Snow/Ice:	0		0.0%
Sleet/Hail:	0	0.0%			Slush:	0		0.0%
Fog/Mist:	1	1.1%			Water/Sand:	0		0.0%
Crosswind/Blowing Sand:	0	0.0%			Repairing:	0		0.0%
Unspecified:	4	4.5%			Unspecified:	2		2.3%
Type of Vehicle	#VEH	%			Accident Severity	Type #AC	C	%
Passenger Car:	127	69.8%			Fatal Collision:	1		1.1%
Bus:	13	7.1%			Injury Collision:	40		45.5%
Truck:	23	12.6%			PDO Collision:	47		53.4%
Taxi:	2	1.1%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle:	0	0.0%			Daylight:	66		75.0%
Motorcycle/Moped:	1	0.5%			Dawn/Dusk:	0		0.0%
Bicycle:	6	3.3%			Dark(Lighted):	19		21.6%
Fixed Object:	0	0.0%			Dark(Not Lighted):	1		1.1%
Unspecified:	10	5.5%			Dark(Unknown Ligh Unspecified:	nting): 0 2		0.0% 2.3%
Contributing Easter	#VEH	٥ <i>١</i>			Podostrian Action	c #*C	· C	
Contributing Factor		% 1.6%			Pedestrian Action			% 0.0%
Driver: Speed: Driver: Alcohol/Drug:	3 2	1.6% 1.1%			In Crosswalk with S	0		0.0% 0.0%
-					In Crosswalk again	-		
Driver: Electronic Device: Driver: Others:	1 28	0.5% 15.4%			In Crosswalk no Sig In Unmarked Cross	-		0.0% 0.0%
Vehicle:	1	0.5%			Not in Crosswalk:	0 Kod Cara: 0		0.0%
Roadway:	0 147	0.0% 80.8%			From Between Parl			0.0% 0.0%
Unspecified:	147	00.0%			Unspecified:	0		0.0%

62 Records are not approved as of 9/15/2013 1:53:31 PM

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: BENNING			SIXTH ST,NE TO		OSTIA AVE,NE Rahul Jain	Prepared Da	ite:	11/19/201
Total Number of Accident:	11011101101120	38	Collision Type	#ACC		Collision Type	#ACC	, ,
Total Number of Fatalities:		1	Right Angle:	0		ixed Object:	1	2.6%
Total Number of Injuries:		19	Left Turn:	5		Ran Off Road:	0	0.0%
Total Number of Disabling	Injuries	1	Right Turn:	0		Ped. Involved:	0	0.0%
Total Number of NonDisat		3	Rear End:	11		Backing:	1	2.6%
Total Number of Pedestria		0	Side Swiped:	16		Ion Collision:	0	0.0%
Total Number of Bicycles I		0	Head On:	1		Inder/Over Ride:		0.0%
Total Number of Motorcyc		0	Parked:	2		Inspecified:	1	2.6%
Time of Day	#ACC	%			Day o fweek	#AC	C	%
07:30 ~ 09:30:	3	7.9%			Sunday:	2		5.3%
09:30 ~ 11:30:	7	18.4%			Monday:	6		15.8%
11:30 ~ 13:30:	2	5.3%			Tuesday:	10		26.3%
13:30 ~ 16:00:	8	21.1%			Wednesday:	1		2.6%
16:00 ~18:30:	6	15.8%			Thursday:	7		18.4%
18:30 ~ 07:30:	12	31.6%			Friday:	3		7.9%
Unspecified:	0	0.0%			Saturday:	9		23.7%
Weather Condition	#ACC	%			Surface Condition	#AC	C	%
Clear:	27	71.1%			Dry:	29		76.3%
Rain:	6	15.8%			Wet:	6		15.8%
Snow:	1	2.6%			Snow/Ice:	2		5.3%
Sleet/Hail:	1	2.6%			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	7.9%			Unspecified:	1		2.6%
Type of Vehicle	#VEH	%			Accident Severity 1	ſype #AC	C	%
Passenger Car:	71	91.0%			Fatal Collision:	1		2.6%
Bus:	1	1.3%			Injury Collision:	15		39.5%
Truck:	5	6.4%			PDO Collision:	22		57.9%
Taxi:	1	1.3%						
Minivan:	0	0.0%			Light Condition	#AC	C	%
Police/Emergency Vehicle	: 0	0.0%			Daylight:	23		60.5%
Motorcycle/Moped:	0	0.0%			Dawn/Dusk:	2		5.3%
Bicycle:	0	0.0%			Dark(Lighted):	0		0.0%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	0	0.0%			Dark(Unknown Light			34.2%
					Unspecified:	0		0.0%
Contributing Factor	#VEH	%			Pedestrian Actions		C	%
Driver: Speed:	7	9.0%			In Crosswalk with Sig	-		0.0%
Driver: Alcohol/Drug:	1	1.3%			In Crosswalk agains	-		0.0%
Driver: Electronic Device:	0	0.0%			In Crosswalk no Sigr			0.0%
Driver: Others:	19	24.4%			In Unmarked Crossv	valk: 0		0.0%
Vehicle:	0	0.0%			Not in Crosswalk:	0		0.0%
Roadway:	0	0.0%			From Between Parke	ed Cars: 0		0.0%
Unspecified:	51	65.4%			Unspecified:	0		0.0%

38 Records are not approved as of 11/19/2013 2:06:26 PM

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: BENNING Time Period Covered:			/ SIXTH ST,NE T		OSTIA AVE,NE Rahul Jain	Prepared Da	te [.]	11/19/201
Total Number of Accident:	1101101/01/20	31	•	-		•	#AC	~
Total Number of Fatalities:		0	Collision Type Right Angle:	8 #ACC		Collision Type	#AC	C % 0.0%
Total Number of Injuries:		20	Left Turn:	3		Ran Off Road:	0	0.0%
Total Number of Disabling	Injurioo:	1	Right Turn:	3 1		Ped. Involved:	0	0.0%
Total Number of NonDisab		5	Right Turn. Rear End:	9			1	3.2%
Total Number of Pedestria		0	Side Swiped:	9 10		Backing: Non Collision:	1	3.2%
Total Number of Bicycles I		1	Head On:	10		Inder/Over Ride:		0.0%
Total Number of Motorcycl		0	Parked:	0		Inspecified:	2	6.5%
Time of Day	#ACC	%			Day o fweek	#AC	c	%
07:30 ~ 09:30:	6	19.4%			Sunday:	0	-	0.0%
09:30 ~ 11:30:	5	16.1%			Monday:	4		12.9%
11:30 ~ 13:30:	1	3.2%			Tuesday:	6		19.4%
13:30 ~ 16:00:	4	12.9%			Wednesday:	6		19.4%
16:00 ~18:30:	8	25.8%			Thursday:	4		12.9%
18:30 ~ 07:30:	7	22.6%			Friday:	7		22.6%
Unspecified:	0	0.0%			Saturday:	4		12.9%
Weather Condition	#ACC	%			Surface Condition	#AC	c	%
Clear:	28	90.3%			Dry:	26		83.9%
Rain:	2	6.5%			Wet:	4		12.9%
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:	1		3.2%
Unspecified:	1	3.2%	5		Unspecified:	0		0.0%
Type of Vehicle	#VEH	%			Accident Severity	Гуре #АС	c	%
Passenger Car:	47	73.4%			Fatal Collision:	0		0.0%
Bus:	4	6.3%			Injury Collision:	11		35.5%
Truck:	7	10.9%			PDO Collision:	20		64.5%
Taxi:	2	3.1%	. –					0/
Minivan:	0	0.0%			Light Condition	#AC	L.	%
Police/Emergency Vehicle	: 2	3.1%	b		Daylight:	20 4		64.5%
Motorcycle/Moped:	0	0.0%	b		Dawn/Dusk:	-		12.9%
Bicycle:	1	1.6%			Dark(Lighted):	0		0.0%
Fixed Object:	0	0.0%			Dark(Not Lighted):	0		0.0%
Unspecified:	1	1.6%	5		Dark(Unknown Light Unspecified:	ting): 6 1		19.4% 3.2%
Contributing Easter	#\/EU	0/			Pedestrian Astions	#AC	· C	
Contributing Factor	#VEH 1	% 1.6%			Pedestrian Actions		0	% 0.0%
Driver: Speed:		1.6%			In Crosswalk with Si	0		0.0%
Driver: Alcohol/Drug:	0	0.0%			In Crosswalk agains	-		0.0%
Driver: Electronic Device:	0	0.0%			In Crosswalk no Sig			0.0%
Driver: Others:	22	34.4%			In Unmarked Crossy			0.0%
Vehicle:	0	0.0%			Not in Crosswalk:	0 od Carai 0		0.0%
Roadway:	0	0.0%			From Between Park			0.0%
Unspecified:	41	64.1%			Unspecified:	0		0.0%

31 Records are not approved as of 11/19/2013 2:30:45 PM