



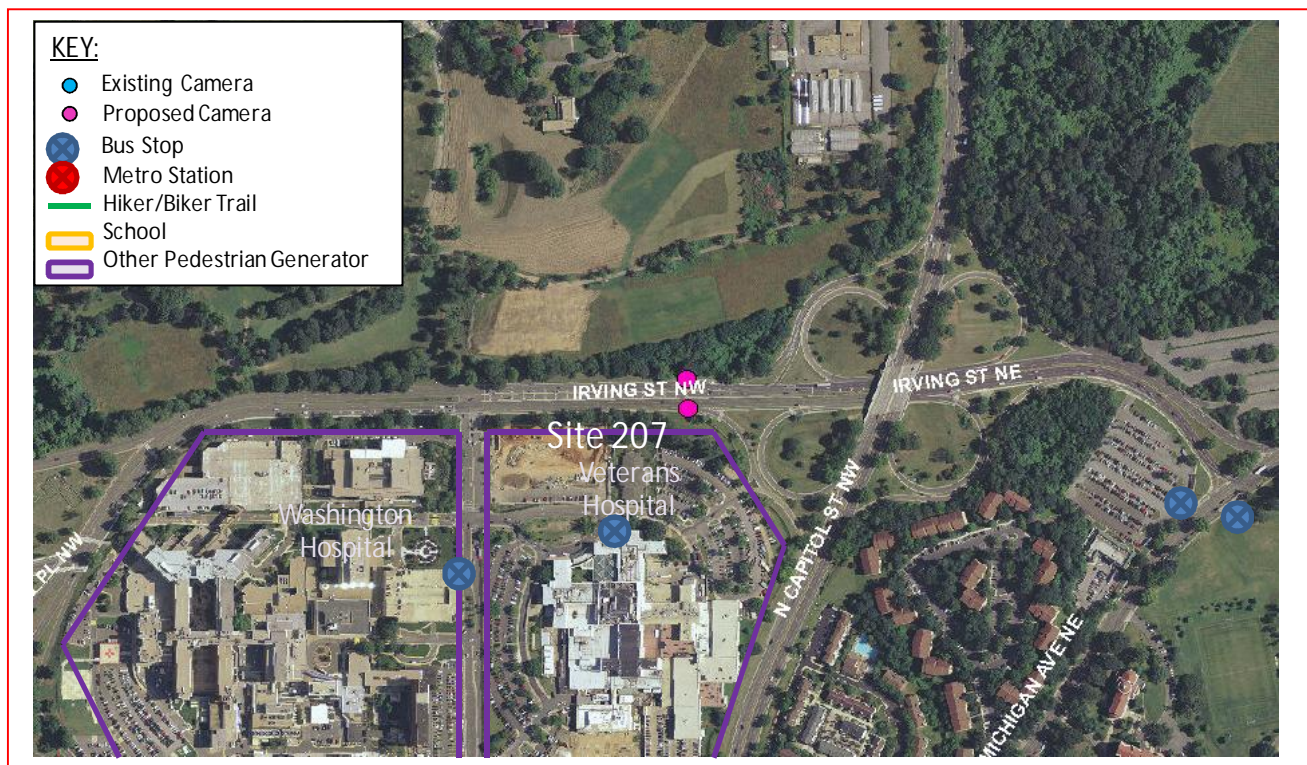
District Department of Transportation

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

Unit Block Irving Street NW W/B

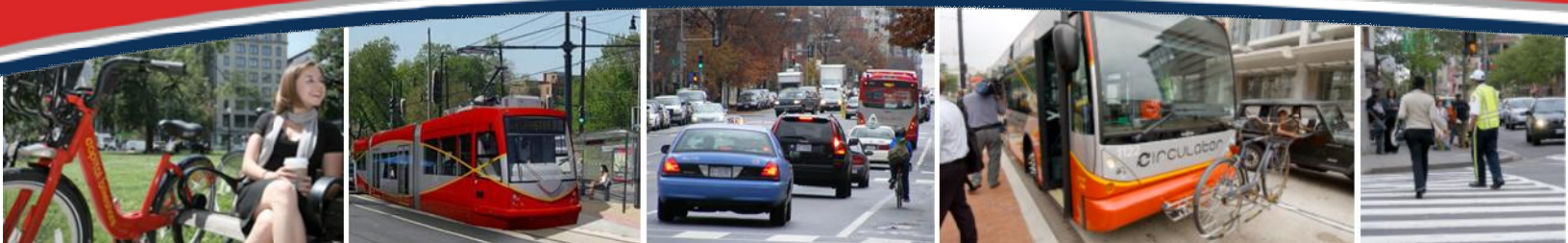
Study Area and Location

District	PSA	Ward	ANC	Phase	Description
4	405	5	5C	Proposed	Unit Block Irving Street Northwest Westbound



This *proposed* speed camera will be located in Ward 5 on the Unit block of Irving Street Northwest in the westbound direction. Irving Street runs between Michigan Avenue Northeast to the east and Adams Mill Road Northwest to the west. The posted speed limit is 35 MPH.

W5 - 279





District Department of Transportation

Unit Block Irving Street NW W/B

Field Assessment Summary

Irving Street is assumed to run in the east-west direction, and is classified as a minor arterial. Irving Street has three travel lanes in each direction and two left turn lanes at First Street Northwest. This site has the following characteristics:

- There are on and off ramps for North Capitol Street in both directions.
- There is a traffic signal at First Street with pedestrian signals across the south leg only to cross First Street.
- The pavement is in good condition and the drainage type is curb and gutter with drainage inlets.
- Washington Hospital and Veterans Hospital are in the area.



Looking Eastbound



District Department of Transportation

Unit Block Irving Street NW W/B



Looking Westbound

Speed Data Analysis

	EB	WB
Posted Speed Limit (MPH)	35	35
Mean Speed (MPH)	26	15
85th Percentile Speed (MPH)	38	28
10 MPH Pace Speed	30-39	4-13
Sample Size	11,257	6,894
ADT	18,151	

In the westbound direction, both the mean speed and the 85th percentile speed were lower than the posted speed limit at this location. The 85th percentile speed is 7 MPH lower 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 42 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 Side Swipe (9 crashes), Unspecified (8 crashes), and Rear End (6 crashes). Crash data shows four (4) crashes where vehicle speeding was the contributing factor at this location. Furthermore, this site experienced a high frequency (20 crashes) of injury-related crashes.

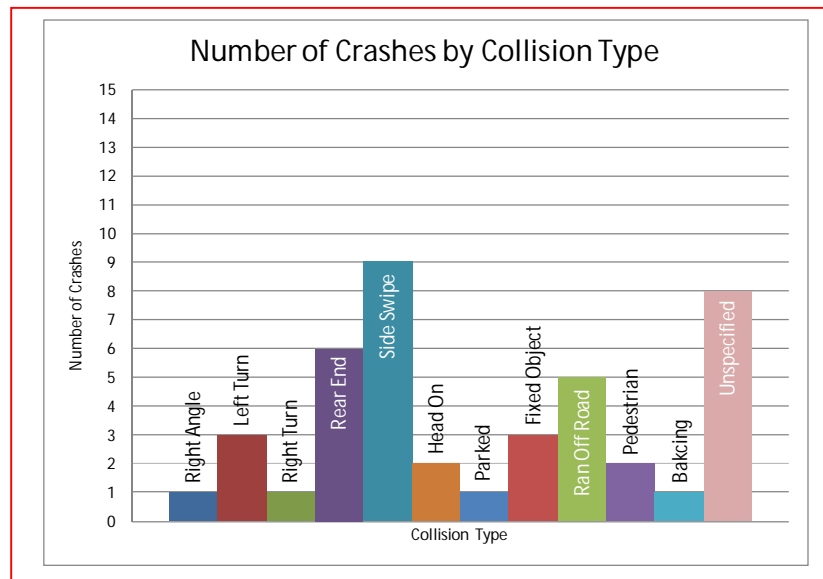
W5 - 281



District Department of Transportation

Unit Block Irving Street NW W/B

Severity			Weather			Surface condition			Light Condition		
Total	42										
Fatal	0	0.0%	Clear	35	83.3%	Dry	36	85.7%	Day	24	57.1%
Injury	20	47.6%	Rain	3	7.1%	Wet	3	7.1%	Night	14	33.3%
Bus	5	11.9%	Snow	0	0.0%	Snow/Ice	0	0.0%			
Truck	2	4.8%									



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.

Safety Nexus

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

1. Speed Data – The speed data analysis shows travel speeds being lower than the posted speed limit.

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



District Department of Transportation

Unit Block Irving Street NW W/B

2. Crash Data – This location experienced an elevated number of speed-related crashes at this location, including rear end and side swipe crashes, as well as a high frequency (20 crashes) of injury-related crashes. There were four (4) crashes where speeding was the contributing factor at this location.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
 - a. Washington Hospital and Veterans Hospital are in the area which generates pedestrian activity.
 - b. 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 characteristics, and pedestrian generators, there is a nexus between traffic safety and the speed camera at this location.

W5 - 283

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

Unit block of Irving St NW Speed

EB

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
11/13/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	7	0	1	4	19	13	9	1	0	0	0	0	0	0	54
05:00	2	0	1	12	66	73	21	3	0	0	0	0	0	0	178
06:00	11	0	2	47	199	130	38	11	1	0	0	0	0	0	439
07:00	43	1	1	82	259	242	78	9	0	0	0	0	0	0	715
08:00	157	1	5	70	232	223	64	6	1	0	0	0	0	0	759
09:00	216	0	7	59	247	168	43	11	1	0	0	0	0	0	752
10:00	223	0	15	77	189	144	32	4	2	0	0	0	0	0	686
11:00	193	0	5	55	198	146	38	8	0	0	0	0	0	0	643
12 PM	169	3	7	61	200	143	31	5	1	0	0	0	0	0	620
13:00	182	1	9	86	207	165	32	6	1	0	0	0	0	0	689
14:00	190	1	11	82	201	159	47	8	1	0	0	0	0	0	700
15:00	211	5	21	98	267	169	55	6	0	1	0	0	0	0	833
16:00	213	1	21	111	215	136	37	10	2	0	0	0	0	0	746
17:00	208	20	38	131	201	133	28	9	0	0	0	0	0	0	768
18:00	161	7	19	101	214	111	20	2	1	0	0	0	0	0	636
19:00	78	0	3	41	166	158	41	4	1	1	0	0	0	0	493
20:00	57	0	0	28	171	119	23	6	1	0	0	0	0	0	405
21:00	38	0	0	28	128	111	42	0	2	0	0	0	0	0	349
22:00	26	0	2	18	97	113	26	6	1	0	0	0	0	0	289
23:00	16	0	3	18	74	69	28	5	0	0	0	0	0	0	213
Total	2401	40	171	1209	3550	2725	733	120	16	2	0	0	0	0	10967

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

Unit block of Irving St NW Speed

EB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
11/14/13	4	0	1	7	40	48	15	3	2	0	0	0	0	0	120
01:00	5	0	0	8	26	26	15	3	0	0	0	0	0	0	83
02:00	2	0	0	8	19	11	5	1	0	0	0	0	0	0	46
03:00	4	1	0	6	10	7	11	1	0	1	0	0	0	0	41
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	15	1	1	29	95	92	46	8	2	1	0	0	0	0	290
Grand Total	2416	41	172	1238	3645	2817	779	128	18	3	0	0	0	0	11257

15th Percentile : 7 MPH
 50th Percentile : 30 MPH
 85th Percentile : 38 MPH
 95th Percentile : 41 MPH

Stats
 Mean Speed(Average) : 26 MPH
 10 MPH Pace Speed : 30-39 MPH
 Number in Pace : 5086
 Percent in Pace : 45.2%
 Number of Vehicles > 35 MPH : 3276
 Percent of Vehicles > 35 MPH : 29.1%

SAMMAT ENGINEERING SERVICES, LLC

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MOUNT AIRY, MD 21771

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Unit block of Irving St NW Speed

WB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
11/13/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	1	1	0	6	17	24	15	4	2	1	0	0	0	0	71
05:00	4	0	0	8	37	63	28	22	4	3	0	0	0	0	169
06:00	42	0	2	6	27	76	91	57	42	40	14	6	3	2	408
07:00	211	0	4	23	89	147	98	60	46	30	30	21	8	15	782
08:00	271	37	58	41	42	67	41	23	4	6	1	2	0	8	601
09:00	183	46	41	24	25	15	12	7	3	1	0	0	0	2	359
10:00	179	46	27	16	23	15	7	2	1	1	0	0	0	2	319
11:00	195	28	21	19	10	8	5	0	3	2	0	0	0	3	294
12 PM	244	65	43	35	19	13	5	1	0	1	0	0	0	0	426
13:00	272	44	27	13	5	3	4	2	0	0	0	0	0	0	370
14:00	410	14	10	11	6	2	2	0	0	0	0	0	0	0	455
15:00	346	9	14	15	5	1	0	1	0	0	0	0	0	0	391
16:00	320	6	20	14	1	1	0	0	0	0	0	0	0	0	362
17:00	321	11	15	6	1	1	1	1	0	0	0	0	0	0	357
18:00	306	11	11	2	0	3	0	1	0	0	0	0	0	0	334
19:00	295	15	10	5	2	2	1	0	0	0	0	0	0	0	330
20:00	218	6	9	2	0	4	0	1	1	0	0	0	0	0	241
21:00	210	4	3	1	1	4	1	0	0	0	0	0	0	0	224
22:00	141	3	3	1	1	2	2	0	1	0	0	0	0	0	154
23:00	104	2	2	0	1	0	1	0	0	0	0	0	0	0	110
Total	4273	348	320	248	312	451	314	182	107	85	45	29	11	32	6757

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Unit block of Irving St NW Speed

WB	Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
11/14/13		52	0	0	0	1	0	1	0	0	0	0	0	0	0	54
01:00		41	1	0	0	1	0	0	0	0	0	0	0	0	0	43
02:00		25	0	0	0	0	0	0	0	0	0	0	0	0	0	25
03:00		15	0	0	0	0	0	0	0	0	0	0	0	0	0	15
04:00		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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		133	1	0	0	2	0	1	0	0	0	0	0	0	0	137
Grand Total		4406	349	320	248	314	451	315	182	107	85	45	29	11	32	6894

15th Percentile : 4 MPH
 50th Percentile : 9 MPH
 85th Percentile : 28 MPH
 95th Percentile : 43 MPH

Stats
 Mean Speed(Average) : 15 MPH
 10 MPH Pace Speed : 4-13 MPH
 Number in Pace : 4221
 Percent in Pace : 61.5%
 Number of Vehicles > 35 MPH : 783
 Percent of Vehicles > 35 MPH : 11.4%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateg.com

Unit block of Irving St NW Volume

Start Time	13-Nov-13		EB		WB		Combined		14-Nov-Thu	EB		WB		Combined		
	Wed		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	*		*	143	*	104	*	247			*		*		*	
12:15	*		*	169	*	105	*	274			*		*		*	
12:30	*		*	159	*	103	*	262			*		*		*	
12:45	*		*	149	*	114	*	263			*		*		*	
01:00	*		*	173	*	89	*	262			*		*		*	
01:15	*		*	197	*	91	*	288			*		*		*	
01:30	*		*	168	*	86	*	254			*		*		*	
01:45	*		*	151	*	104	*	255			*		*		*	
02:00	*		*	167	*	125	*	292			*		*		*	
02:15	*		*	175	*	95	*	270			*		*		*	
02:30	*		*	185	*	107	*	292			*		*		*	
02:45	*		*	173	*	128	*	301			*		*		*	
03:00	*		*	194	*	110	*	304			*		*		*	
03:15	*		*	199	*	101	*	300			*		*		*	
03:30	*		*	211	*	88	*	299			*		*		*	
03:45	*		*	229	*	92	*	321			*		*		*	
04:00		13		191		10	83	23	274		*	*	*	*	*	
04:15		14		187		14	91	28	278		*	*	*	*	*	
04:30		10		191		18	99	28	290		*	*	*	*	*	
04:45		17		177		29	89	46	266		*	*	*	*	*	
05:00		31		218		27	95	58	313		*	*	*	*	*	
05:15		30		200		24	78	54	278		*	*	*	*	*	
05:30		43		156		53	91	96	247		*	*	*	*	*	
05:45		74		194		65	93	139	287		*	*	*	*	*	
06:00		72		194		64	78	136	272		*	*	*	*	*	
06:15		93		151		91	73	184	224		*	*	*	*	*	
06:30		145		145		109	87	254	232		*	*	*	*	*	
06:45		129		146		144	96	273	242		*	*	*	*	*	
07:00		148		144		173	98	321	242		*	*	*	*	*	
07:15		197		128		223	79	420	207		*	*	*	*	*	
07:30		166		107		192	72	358	179		*	*	*	*	*	
07:45		204		114		194	81	398	195		*	*	*	*	*	
08:00		182		102		193	63	375	165		*	*	*	*	*	
08:15		178		128		165	66	343	194		*	*	*	*	*	
08:30		182		95		145	56	327	151		*	*	*	*	*	
08:45		217		80		98	56	315	136		*	*	*	*	*	
09:00		175		93		118	64	293	157		*	*	*	*	*	
09:15		202		95		80	60	282	155		*	*	*	*	*	
09:30		182		71		82	55	264	126		*	*	*	*	*	
09:45		193		90		79	45	272	135		*	*	*	*	*	
10:00		169		72		75	50	244	122		*	*	*	*	*	
10:15		199		78		76	43	275	121		*	*	*	*	*	
10:30		165		76		92	32	257	108		*	*	*	*	*	
10:45		153		63		76	29	229	92		*	*	*	*	*	
11:00		186		62		58	24	244	86		*	*	*	*	*	
11:15		159		64		75	36	234	100		*	*	*	*	*	
11:30		165		53		62	24	227	77		*	*	*	*	*	
11:45		133		34		99	26	232	60		*	*	*	*	*	
Total		4226		6741		3003	3754	7229	10495		290	0	137	0	427	0
Day Total		10967		6757		17724					290	137		427		
% Total		23.8%	38.0%	16.9%	21.2%					67.9%	0.0%	32.1%	0.0%			
Peak		08:30	03:00	07:15	02:00	07:15	03:00			12:00	12:00		12:00			
Vol.		776	833	802	455	1551	1224			120	54		174			
P.H.F.		0.894	0.909	0.899	0.889	0.923	0.953			0.625	0.587		0.702			

ADT ADT 18,151 AADT 18,151

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: IRVING ST,NW,NE From FIRST ST,NW TO MICHIGAN AVE,NE

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

Prepared By: Rahul Jain

Prepared Date: 9/16/2013

Total Number of Accident:	42	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	1	2.4%	Fixed Object:	3	7.1%
Total Number of Injuries:	31	Left Turn:	3	7.1%	Ran Off Road:	5	11.9%
Total Number of Disabling Injuries:	5	Right Turn:	1	2.4%	Ped. Involved:	2	4.8%
Total Number of NonDisabling Injuries:	5	Rear End:	6	14.3%	Backing:	1	2.4%
Total Number of Pedestrians Involved:	3	Side Swiped:	9	21.4%	Non Collision:	0	0.0%
Total Number of Bicycles Involved:	1	Head On:	2	4.8%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	0	Parked:	1	2.4%	Unspecified:	8	19.0%
Time of Day				Day of week			
	#ACC	%			#ACC	%	
07:30 ~ 09:30:	3	7.1%		Sunday:	3	7.1%	
09:30 ~ 11:30:	4	9.5%		Monday:	5	11.9%	
11:30 ~ 13:30:	4	9.5%		Tuesday:	5	11.9%	
13:30 ~ 16:00:	8	19.0%		Wednesday:	4	9.5%	
16:00 ~ 18:30:	5	11.9%		Thursday:	6	14.3%	
18:30 ~ 07:30:	18	42.9%		Friday:	14	33.3%	
Unspecified:	0	0.0%		Saturday:	5	11.9%	
Weather Condition				Surface Condition			
	#ACC	%			#ACC	%	
Clear:	35	83.3%		Dry:	36	85.7%	
Rain:	3	7.1%		Wet:	3	7.1%	
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:	4	9.5%		Unspecified:	3	7.1%	
Type of Vehicle				Accident Severity Type			
	#VEH	%			#ACC	%	
Passenger Car:	50	74.6%		Fatal Collision:	0	0.0%	
Bus:	5	7.5%		Injury Collision:	20	47.6%	
Truck:	2	3.0%		PDO Collision:	22	52.4%	
Taxi:	2	3.0%		Light Condition			
Minivan:	0	0.0%			#ACC	%	
Police/Emergency Vehicle:	2	3.0%		Daylight:	24	57.1%	
Motorcycle/Moped:	0	0.0%		Dawn/Dusk:	1	2.4%	
Bicycle:	1	1.5%		Dark(Lighted):	14	33.3%	
Fixed Object:	0	0.0%		Dark(Not Lighted):	0	0.0%	
Unspecified:	5	7.5%		Dark(Unknown Lighting):	0	0.0%	
				Unspecified:	3	7.1%	
Contributing Factor				Pedestrian Actions			
	#VEH	%			#ACC	%	
Driver: Speed:	4	6.0%		In Crosswalk with Signal:	1	33.3%	
Driver: Alcohol/Drug:	2	3.0%		In Crosswalk against Signal:	0	0.0%	
Driver: Electronic Device:	0	0.0%		In Crosswalk no Signal:	1	33.3%	
Driver: Others:	15	22.4%		In Unmarked Crosswalk:	0	0.0%	
Vehicle:	0	0.0%		Not in Crosswalk:	1	33.3%	
Roadway:	1	1.5%		From Between Parked Cars:	0	0.0%	
Unspecified:	45	67.2%		Unspecified:	0	0.0%	

26 Records are not approved as of 9/16/2013 7:56:10 AM