



District Department of Transportation

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

### Connecticut Avenue at Calvert Street NW

#### Study Area and Location

District	PSA	Ward	ANC	Phase	Description
2	204	3	3C	Planned	Connecticut Avenue Northbound at Calvert Street Northwest



The *planned* speed camera will be located in Ward 3 at the intersection of Connecticut Avenue and Calvert Street Northwest in the northbound direction. Connecticut Avenue runs between Western Avenue Northwest to the north and H Street Northwest to the south. The posted speed limit is 30 MPH.

W3 - 160





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## Connecticut Avenue at Calvert Street NW

### Field Assessment Summary

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

- This site is located in a residential area with apartment buildings and driveways on both sides of the north leg.
- There are sidewalks with curb and gutter on all sides of the intersection, and a bicycle lane in the northbound direction.
- The existing pavement is in good condition.
- The east leg of the intersection is one-way in the eastbound direction.
- The Rock Creek Park Trail crosses under Calvert Street 0.1 miles to the east and crosses under Connecticut Avenue 0.1 miles to the south.
- There is a bus stop on the southwest corner and several others in the surrounding area.



Looking South





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## Connecticut Avenue at Calvert Street NW



Looking North

### Speed Data Analysis

Posted Speed Limit (MPH)	30
Mean Speed (MPH)	15
85th Percentile Speed (MPH)	24
10 MPH Pace Speed	6-15 MPH
ADT	9,430

Both the Mean Speed and 85<sup>th</sup> Percentile Speed are lower than the posted speed limit at this site. The 85<sup>th</sup> percentile speed is 6 MPH lower than the posted speed limit.

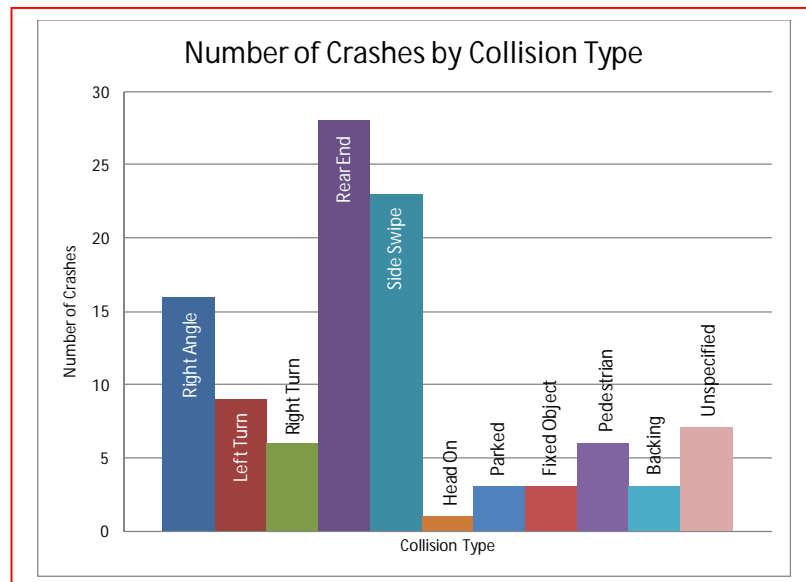
### Crash Data Analysis

From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 105 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 (28 crashes) and Side Swipe (23 crashes). Furthermore, this location experienced a high frequency (33 crashes) of injury-related crashes.



## Connecticut Avenue at Calvert Street NW

Severity		Weather			Surface condition			Light Condition		
Total	105									
Fatal	0 0.0%	Clear	84	80.0%	Dry	84	80.0%	Day	73	69.5%
Injury	33 31.4%	Rain	16	15.2%	Wet	16	15.2%	Night	29	27.6%
Taxi	23 21.9%	Snow	1	1.0%	Snow/Ice	1	1.0%			
Bus	18 17.1%									



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”<sup>1</sup> as two errors leading to rear-end and sideswipe crashes. Both of these errors can be decreased with a decrease in travel speed.

The Connecticut Avenue 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)*<sup>2</sup>.

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

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



District Department of Transportation

## Connecticut Avenue at Calvert Street NW

### 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 travel speeds being much 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. There were a high number (33 crashes) of injury-related crashes, and a number of pedestrian-related crashes, as well as a high frequency of injury related crashes. The Connecticut Avenue 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. The site is located in a residential area with apartment buildings and driveways on both sides of the street.
  - b. There are multiple bus stops in the area which generate pedestrian activity.
  - c. Rock Creek Park Trail crosses under Calvert Street 0.1 miles to the east and crosses under Connecticut Avenue 0.1 miles to the south which generates pedestrian activity.

Although the speed data analysis showed the mean and 85<sup>th</sup> percentile speeds to be lower than the posted speed limit, due to the elevated number of speed-related, injury-related and pedestrian-related crashes, the specific site characteristics and the 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](http://www.sammateng.com)

## Connecticut Ave NB at Calvert St NW Speed

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
	20	25	30	35	40	45	50	55	60	65	70	75	999		
11/05/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	3	5	2	5	0	0	0	0	0	0	0	0	0	0	15
03:00	3	4	15	10	0	0	0	0	0	0	0	0	0	0	32
04:00	5	4	14	12	1	0	0	0	0	0	0	0	0	0	36
05:00	14	14	44	26	8	5	1	0	0	0	0	0	0	0	112
06:00	74	60	85	54	18	3	0	0	0	0	0	0	0	0	294
07:00	208	91	99	62	22	6	1	0	0	0	0	0	0	0	489
08:00	223	103	68	46	17	1	0	0	0	0	0	0	0	0	458
09:00	227	94	86	85	28	5	1	0	0	0	0	0	0	0	526
10:00	219	108	76	36	11	1	0	0	0	0	0	0	0	0	451
11:00	217	114	82	42	6	1	0	0	0	0	0	0	0	0	462
12 PM	230	116	97	33	5	0	0	0	0	0	0	0	0	0	481
13:00	204	117	85	39	3	0	0	0	0	0	0	0	0	0	448
14:00	188	100	145	90	29	3	0	0	0	0	0	0	0	0	555
15:00	180	101	119	141	54	9	2	0	0	0	0	0	0	0	606
16:00	208	124	132	140	69	4	1	0	0	0	0	0	0	0	678
17:00	306	194	175	92	24	1	0	0	0	0	0	0	0	0	792
18:00	334	162	73	26	13	2	0	0	0	0	0	0	0	0	610
19:00	252	121	125	57	3	1	0	0	0	0	0	0	0	0	559
20:00	150	155	143	42	12	1	0	0	0	0	0	0	0	0	503
21:00	155	141	112	50	8	0	0	0	0	0	0	0	0	0	466
22:00	88	129	130	47	6	0	0	0	0	0	0	0	0	0	400
23:00	30	67	96	41	2	4	0	0	0	0	0	0	0	0	240
Total	3518	2124	2003	1176	339	47	6	0	0	0	0	0	0	0	9213

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## Connecticut Ave NB at Calvert St NW Speed

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
11/06/13	5	40	60	21	4	0	0	0	0	0	0	0	0	0	130
01:00	3	14	35	13	1	1	0	0	0	0	0	0	0	0	67
02:00	3	3	5	7	0	0	2	0	0	0	0	0	0	0	20
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	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<b>Total</b>	<b>11</b>	<b>57</b>	<b>100</b>	<b>41</b>	<b>5</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>217</b>
<b>Grand Total</b>	<b>3529</b>	<b>2181</b>	<b>2103</b>	<b>1217</b>	<b>344</b>	<b>48</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9430</b>

15th Percentile : 6 MPH  
 50th Percentile : 13 MPH  
 85th Percentile : 24 MPH  
 95th Percentile : 29 MPH

Stats  
 Mean Speed(Average) : 15 MPH  
 10 MPH Pace Speed : 6-15 MPH  
 Number in Pace : 4267  
 Percent in Pace : 45.2%  
 Number of Vehicles > 30 MPH : 357  
 Percent of Vehicles > 30 MPH : 3.8%

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## Connecticut Ave NB at Calvert St NW Volume

Start Time	05-Nov-13		06-Nov-13		07-Nov-13		Daily Average	
	Tue A.M.	P.M.	Wed A.M.	P.M.	Thu A.M.	P.M.	A.M.	P.M.
12:00	*	111	58	*	*	*	58	111
12:15	*	139	23	*	*	*	23	139
12:30	*	112	26	*	*	*	26	112
12:45	*	119	23	*	*	*	23	119
01:00	*	107	25	*	*	*	25	107
01:15	*	109	17	*	*	*	17	109
01:30	*	132	16	*	*	*	16	132
01:45	*	100	9	*	*	*	9	100
02:00	*	135	12	*	*	*	12	135
02:15	*	117	8	*	*	*	8	117
02:30	7	153	*	*	*	*	7	153
02:45	8	150	*	*	*	*	8	150
03:00	6	136	*	*	*	*	6	136
03:15	10	151	*	*	*	*	10	151
03:30	6	159	*	*	*	*	6	159
03:45	10	160	*	*	*	*	10	160
04:00	10	155	*	*	*	*	10	155
04:15	5	155	*	*	*	*	5	155
04:30	11	183	*	*	*	*	11	183
04:45	10	185	*	*	*	*	10	185
05:00	13	206	*	*	*	*	13	206
05:15	31	223	*	*	*	*	31	223
05:30	22	184	*	*	*	*	22	184
05:45	46	179	*	*	*	*	46	179
06:00	44	116	*	*	*	*	44	116
06:15	47	143	*	*	*	*	47	143
06:30	92	155	*	*	*	*	92	155
06:45	111	196	*	*	*	*	111	196
07:00	113	150	*	*	*	*	113	150
07:15	127	145	*	*	*	*	127	145
07:30	127	136	*	*	*	*	127	136
07:45	122	128	*	*	*	*	122	128
08:00	139	155	*	*	*	*	139	155
08:15	73	132	*	*	*	*	73	132
08:30	122	111	*	*	*	*	122	111
08:45	124	105	*	*	*	*	124	105
09:00	116	127	*	*	*	*	116	127
09:15	155	114	*	*	*	*	155	114
09:30	119	113	*	*	*	*	119	113
09:45	136	112	*	*	*	*	136	112
10:00	111	120	*	*	*	*	111	120
10:15	107	105	*	*	*	*	107	105
10:30	113	91	*	*	*	*	113	91
10:45	120	84	*	*	*	*	120	84
11:00	124	74	*	*	*	*	124	74
11:15	119	68	*	*	*	*	119	68
11:30	111	54	*	*	*	*	111	54
11:45	108	44	*	*	*	*	108	44
<b>Total</b>	<b>2875</b>	<b>6338</b>	<b>217</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3092</b>	<b>6338</b>
<b>Combined Total</b>	<b>9213</b>		<b>217</b>		<b>0</b>		<b>9430</b>	
<b>Peak</b>	<b>09:00</b>	<b>04:45</b>	<b>12:00</b>				<b>09:00</b>	<b>04:45</b>
<b>Vol.</b>	<b>526</b>	<b>798</b>	<b>130</b>				<b>526</b>	<b>798</b>
<b>P.H.F.</b>	<b>0.848</b>	<b>0.895</b>	<b>0.560</b>				<b>0.848</b>	<b>0.895</b>
<b>ADT</b>	<b>ADT 9,430</b>		<b>AADT 9,430</b>					



DC Department of Transportation - Traffic Accident Reporting and Analysis System

## Accident Summary Report (R-8)

**Corridor:** CONNECTICUT AVE,NW From TWENTY FOURTH ST,NW TO CATHEDRAL AVE,NW

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

**Prepared By:** Rahul Jain

**Prepared Date:** 11/24/2012

Total Number of Accident:	105	<b>Collision Type</b>	<b>#ACC</b>	<b>%</b>	<b>Collision Type</b>	<b>#ACC</b>	<b>%</b>	
Total Number of Fatalities:	0	Right Angle:	16	15.2%	Fixed Object:	3	2.9%	
Total Number of Injuries:	44	Left Turn:	9	8.6%	Ran Off Road:	0	0.0%	
Total Number of Disabling Injuries:	0	Right Turn:	6	5.7%	Ped. Involved:	6	5.7%	
Total Number of NonDisabling Injuries:	15	Rear End:	28	26.7%	Backing:	3	2.9%	
Total Number of Pedestrians Involved:	5	Side Swiped:	23	21.9%	Non Collision:	0	0.0%	
Total Number of Bicycles Involved:	6	Head On:	1	1.0%	Under/Over Ride:	0	0.0%	
Total Number of Motorcycles Involved:	2	Parked:	3	2.9%	Unspecified:	7	6.7%	
<b>Time of Day</b>				<b>#ACC</b>	<b>%</b>	<b>Day of week</b>		
07:30 ~ 09:30:				11	10.5%	Sunday:		
09:30 ~ 11:30:				14	13.3%	Monday:		
11:30 ~ 13:30:				11	10.5%	Tuesday:		
13:30 ~ 16:00:				14	13.3%	Wednesday:		
16:00 ~ 18:30:				23	21.9%	Thursday:		
18:30 ~ 07:30:				32	30.5%	Friday:		
Unspecified:				0	0.0%	Saturday:		
13				12.4%	11		10.5%	
18				17.1%	12		11.4%	
15				14.3%	25		23.8%	
11				10.5%				
<b>Weather Condition</b>				<b>#ACC</b>	<b>%</b>	<b>Surface Condition</b>		
Clear:				84	80.0%	Dry:		
Rain:				16	15.2%	Wet:		
Snow:				1	1.0%	Snow/Ice:		
Sleet/Hail:				1	1.0%	Slush:		
Fog/Mist:				0	0.0%	Water/Sand:		
Crosswind/Blowing Sand:				0	0.0%	Repairing:		
Unspecified:				3	2.9%	Unspecified:		
84				80.0%	16		15.2%	
1				1.0%	1		1.0%	
0				0.0%	0		0.0%	
0				0.0%	0		0.0%	
0				0.0%	1		1.0%	
3				2.9%	3		2.9%	
<b>Type of Vehicle</b>				<b>#VEH</b>	<b>%</b>	<b>Accident Severity Type</b>		
Passenger Car:				128	63.4%	Fatal Collision:		
Bus:				18	8.9%	Injury Collision:		
Truck:				17	8.4%	PDO Collision:		
Taxi:				23	11.4%	72		68.6%
Minivan:				0	0.0%	<b>Light Condition</b>		
Police/Emergency Vehicle:				2	1.0%	Daylight:		
Motorcycle/Moped:				2	1.0%	Dawn/Dusk:		
Bicycle:				6	3.0%	Dark(Lighted):		
Fixed Object:				0	0.0%	Dark(Not Lighted):		
Unspecified:				6	3.0%	Dark(Unknown Lighting):		
0				0.0%	Unspecified:			
2				1.0%	73		69.5%	
6				3.0%	1		1.0%	
0				0.0%	29		27.6%	
0				0.0%	0		0.0%	
0				0.0%	0		0.0%	
2				1.9%				
<b>Contributing Factor</b>				<b>#VEH</b>	<b>%</b>	<b>Pedestrian Actions</b>		
Driver: Speed:				4	2.0%	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:				45	22.3%	In Unmarked Crosswalk:		
Vehicle:				1	0.5%	Not in Crosswalk:		
Roadway:				5	2.5%	From Between Parked Cars:		
Unspecified:				147	72.8%	Unspecified:		
1				0.5%	1		25.0%	
5				2.5%	1		25.0%	
0				0.0%	0		0.0%	
0				0.0%	0		0.0%	
1				0.5%	1		25.0%	
0				0.0%	0		0.0%	
1				0.5%	1		25.0%	

59 Records are not approved as of 11/24/2013 2:09:43 PM