



District Department of Transportation

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

4100 Block Massachusetts Avenue NW

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
2	205	3	3E	Proposed	4100 Block Massachusetts Avenue Northwest Northwest-bound



The *proposed* speed camera will be located in Ward 3 at the 4100 block of Massachusetts Avenue Northwest in the northwest bound direction. Massachusetts Avenue runs from Dalecarlia Parkway Northwest and Western Avenue Northwest in the north to 19th Street Southeast in the south. The posted speed limit is 30 MPH.

W3 - 465





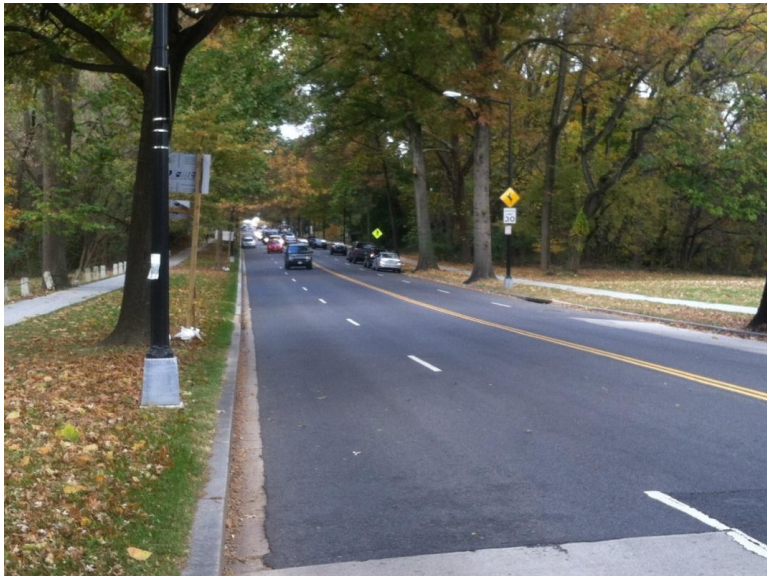
District Department of Transportation

4100 Block Massachusetts Avenue NW

Field Assessment Summary

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

- This site is located in a residential area with driveways and entrances on both sides of the street.
- There is one school in the area: Mann Elementary School.
- The Glover-Archbold Trail crosses Massachusetts Avenue at this block.
- There is on street parking and sidewalks with grass buffer on both sides of the street.
- There are bus stops on both sides of the south end of the block as well as others in the surrounding area.



Looking Northbound

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4100 Block Massachusetts Avenue NW



Looking Southbound

Speed Data Analysis

Posted Speed Limit (MPH)	30
Mean Speed (MPH)	13
85th Percentile Speed (MPH)	25
10 MPH Pace Speed	4-13
Sample Size	18,540

The mean speed and the 85th percentile speed are both lower than the posted speed limit at this location. The 85th percentile speed is 5 MPH lower than the posted speed limit.

Crash Data Analysis

Between January 1, 2010 and December 31, 2012, there were a total of 53 crashes at this location. A breakdown of collisions by type can be found in chart on the next page. The most common types of crash were Rear End (18 crashes) and Side Swipe (14 crashes). Furthermore, this site experienced a high frequency (19 crashes) of injury-related crashes.

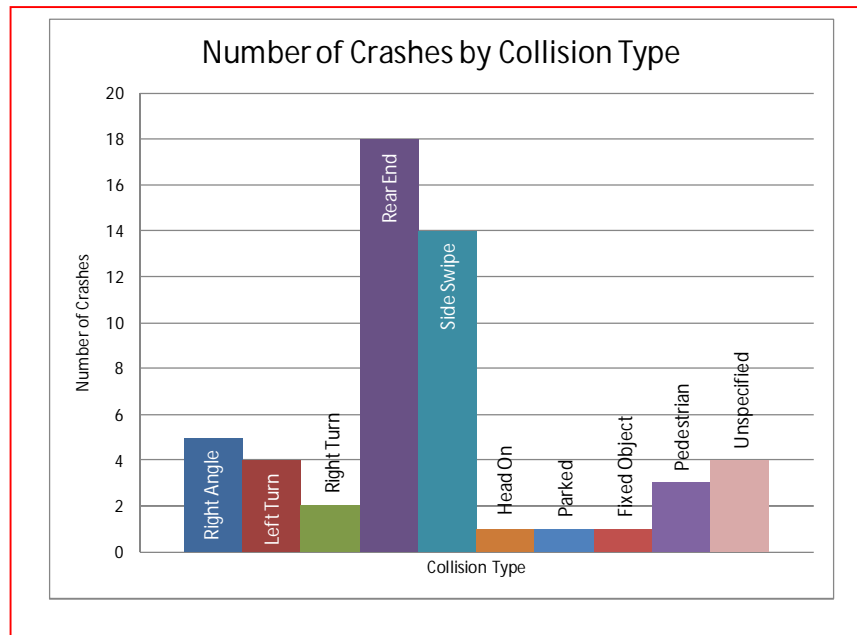
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District Department of Transportation

4100 Block Massachusetts Avenue NW

Severity			Weather			Surface condition			Light Condition		
Total	53										
Fatal	0	0.0%	Clear	41	77.4%	Dry	40	75.5%	Day	36	67.9%
Injury	19	35.8%	Rain	5	9.4%	Wet	8	15.1%	Night	8	15.1%
Taxi	8	15.1%	Snow	0	0.0%	Snow/Ice	0	0.0%			
Bus	4	7.5%									



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 establish a nexus between the speed camera 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

4100 Block Massachusetts Avenue NW

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 (19 crashes) of injury-related crashes.
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 and entrances on both sides of the street.
 - b. There is one school in the area: Mann Elementary School.
 - c. The Glover-Archbold Trail crosses Massachusetts Avenue at this block.
 - d. There are multiple 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.

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SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

4100 block of Massachusetts Ave NW NWB Speed

NWB

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
11/07/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	205	5	62	218	56	8	0	0	0	0	0	0	0	0	554
07:00	403	70	231	233	44	2	1	0	0	0	0	0	0	0	984
08:00	469	29	210	214	29	3	1	0	0	0	0	0	0	0	955
09:00	436	12	188	297	56	6	1	0	0	0	0	0	0	0	996
10:00	425	14	100	264	78	15	2	0	0	0	0	0	0	0	898
11:00	830	0	22	69	28	10	4	4	5	6	9	2	5	36	1030
12 PM	1019	1	3	8	11	3	2	4	3	2	8	4	0	18	1086
13:00	776	3	33	87	80	33	14	8	1	2	1	1	0	5	1044
14:00	750	22	85	149	95	47	9	5	0	1	0	0	0	0	1163
15:00	720	61	139	139	59	10	3	3	1	0	0	0	0	1	1136
16:00	783	3	74	102	63	17	20	11	5	1	0	1	3	2	1085
17:00	750	8	33	32	28	14	5	4	2	0	0	0	0	0	876
18:00	743	14	48	60	65	21	8	8	3	1	0	0	0	1	972
19:00	790	10	105	141	100	45	12	8	4	2	0	1	0	2	1220
20:00	709	1	56	84	125	32	12	11	6	2	1	0	2	2	1043
21:00	606	11	86	91	95	33	11	4	2	2	1	0	0	0	942
22:00	574	11	87	92	76	30	11	8	3	2	0	0	0	0	894
23:00	308	8	41	47	53	12	9	3	2	2	1	1	0	0	487
Total	11296	283	1603	2327	1141	341	125	81	37	23	21	10	10	67	17365

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

4100 block of Massachusetts Ave NW NWB Speed

NWB

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
11/08/13	217	8	34	39	31	16	2	1	0	0	0	0	0	0	348
01:00	107	6	19	19	12	6	0	0	0	0	0	0	0	0	169
02:00	84	7	13	12	14	3	2	1	0	0	0	0	0	0	136
03:00	60	4	11	7	11	3	2	1	0	0	0	0	0	0	99
04:00	67	6	10	15	5	1	1	0	0	0	0	1	0	0	106
05:00	176	8	36	46	33	9	7	1	0	0	1	0	0	0	317
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	711	39	123	138	106	38	14	4	0	0	1	1	0	0	1175
Grand Total	12007	322	1726	2465	1247	379	139	85	37	23	22	11	10	67	18540

15th Percentile : 4 MPH
50th Percentile : 9 MPH
85th Percentile : 25 MPH
95th Percentile : 32 MPH

Stats
Mean Speed(Average) : 13 MPH
10 MPH Pace Speed : 4-13 MPH
Number in Pace : 11454
Percent in Pace : 62.0%
Number of Vehicles > 30 MPH : 1371
Percent of Vehicles > 30 MPH : 7.4%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

4100 block of Massachusetts Ave NW NWB Volume

Start Time	Thu A.M.	07-Nov-13 P.M.	Fri A.M.	08-Nov-13 P.M.	Sat A.M.	09-Nov-13 P.M.	Daily Average	
							A.M.	P.M.
12:00	*	283	86	*	*	*	86	283
12:15	*	275	94	*	*	*	94	275
12:30	*	261	88	*	*	*	88	261
12:45	*	267	80	*	*	*	80	267
01:00	*	258	43	*	*	*	43	258
01:15	*	258	51	*	*	*	51	258
01:30	*	260	28	*	*	*	28	260
01:45	*	268	47	*	*	*	47	268
02:00	*	269	59	*	*	*	59	269
02:15	*	299	38	*	*	*	38	299
02:30	*	331	21	*	*	*	21	331
02:45	*	264	18	*	*	*	18	264
03:00	*	286	34	*	*	*	34	286
03:15	*	264	26	*	*	*	26	264
03:30	*	285	8	*	*	*	8	285
03:45	*	301	31	*	*	*	31	301
04:00	*	305	19	*	*	*	19	305
04:15	*	263	14	*	*	*	14	263
04:30	*	277	29	*	*	*	29	277
04:45	*	240	44	*	*	*	44	240
05:00	*	239	60	*	*	*	60	239
05:15	*	253	88	*	*	*	88	253
05:30	*	206	80	*	*	*	80	206
05:45	*	178	89	*	*	*	89	178
06:00	85	221	*	*	*	*	85	221
06:15	109	255	*	*	*	*	109	255
06:30	156	237	*	*	*	*	156	237
06:45	204	259	*	*	*	*	204	259
07:00	235	297	*	*	*	*	235	297
07:15	274	331	*	*	*	*	274	331
07:30	261	304	*	*	*	*	261	304
07:45	214	288	*	*	*	*	214	288
08:00	200	284	*	*	*	*	200	284
08:15	250	277	*	*	*	*	250	277
08:30	263	232	*	*	*	*	263	232
08:45	242	250	*	*	*	*	242	250
09:00	280	256	*	*	*	*	280	256
09:15	224	247	*	*	*	*	224	247
09:30	267	231	*	*	*	*	267	231
09:45	225	208	*	*	*	*	225	208
10:00	233	251	*	*	*	*	233	251
10:15	235	250	*	*	*	*	235	250
10:30	229	223	*	*	*	*	229	223
10:45	201	170	*	*	*	*	201	170
11:00	209	140	*	*	*	*	209	140
11:15	236	116	*	*	*	*	236	116
11:30	281	103	*	*	*	*	281	103
11:45	304	128	*	*	*	*	304	128
Total	5417	11948	1175	0	0	0	6592	11948
Combined Total	17365		1175		0		18540	
Peak	08:15	07:00	12:00				08:15	07:00
Vol.	1035	1220	348				1035	1220
P.H.F.	0.924	0.921	0.926				0.924	0.921
ADT		ADT 18,540	AADT 18,540					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: MASSACHUSETTS AVE,NW,NE,SE From WARD CIR (SOUTH),NW TO MACOMB ST,NW

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

Prepared By: Rahul Jain

Prepared Date: 9/15/2013

Total Number of Accident:	53	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	4	7.5%	Fixed Object:	1	1.9%
Total Number of Injuries:	26	Left Turn:	5	9.4%	Ran Off Road:	0	0.0%
Total Number of Disabling Injuries:	0	Right Turn:	2	3.8%	Ped. Involved:	3	5.7%
Total Number of NonDisabling Injuries:	3	Rear End:	18	34.0%	Backing:	0	0.0%
Total Number of Pedestrians Involved:	3	Side Swiped:	14	26.4%	Non Collision:	0	0.0%
Total Number of Bicycles Involved:	1	Head On:	1	1.9%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	0	Parked:	1	1.9%	Unspecified:	4	7.5%

Time of Day	#ACC	%	Day o fweek	#ACC	%
07:30 ~ 09:30:	7	13.2%	Sunday:	5	9.4%
09:30 ~ 11:30:	5	9.4%	Monday:	5	9.4%
11:30 ~ 13:30:	4	7.5%	Tuesday:	9	17.0%
13:30 ~ 16:00:	13	24.5%	Wednesday:	8	15.1%
16:00 ~18:30:	9	17.0%	Thursday:	13	24.5%
18:30 ~ 07:30:	15	28.3%	Friday:	7	13.2%
Unspecified:	0	0.0%	Saturday:	6	11.3%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	41	77.4%	Dry:	40	75.5%
Rain:	5	9.4%	Wet:	8	15.1%
Snow:	0	0.0%	Snow/Ice:	0	0.0%
Sleet/Hail:	0	0.0%	Slush:	1	1.9%
Fog/Mist:	1	1.9%	Water/Sand:	0	0.0%
Crosswind/Blowing Sand:	1	1.9%	Repairing:	0	0.0%
Unspecified:	5	9.4%	Unspecified:	4	7.5%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	79	76.0%	Fatal Collision:	0	0.0%
Bus:	4	3.8%	Injury Collision:	19	35.8%
Truck:	4	3.8%	PDO Collision:	34	64.2%
Taxi:	8	7.7%	Light Condition	#ACC	%
Minivan:	0	0.0%	Daylight:	36	67.9%
Police/Emergency Vehicle:	2	1.9%	Dawn/Dusk:	3	5.7%
Motorcycle/Moped:	0	0.0%	Dark(Lighted):	8	15.1%
Bicycle:	1	1.0%	Dark(Not Lighted):	0	0.0%
Fixed Object:	0	0.0%	Dark(Unknown Lighting):	0	0.0%
Unspecified:	6	5.8%	Unspecified:	6	11.3%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	1	1.0%	In Crosswalk with Signal:	1	33.3%
Driver: Alcohol/Drug:	1	1.0%	In Crosswalk against Signal:	0	0.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	16	15.4%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	0	0.0%	Not in Crosswalk:	0	0.0%
Roadway:	1	1.0%	From Between Parked Cars:	0	0.0%
Unspecified:	85	81.7%	Unspecified:	2	66.7%

33 Records are not approved as of 9/15/2013 9:41:55 PM