



District Department of Transportation

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

3500 Block Massachusetts Avenue NW

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
2	204	3	3C	Existing	3500 Block Massachusetts Avenue Northwest Eastbound



The existing speed camera is located in Ward 3 at the 3500 block of Massachusetts Avenue Northwest in the eastbound 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. The existing speed camera was installed in February 2010.

W3 - 35





District Department of Transportation

3500 Block Massachusetts Avenue NW

Field Assessment Summary

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

- This site is located in a residential area with houses, embassies, churches, and driveways on both sides of the street.
- There is sidewalk with a grass buffer zone, and curb and gutter along both sides of the street.
- The existing pavement is in good condition.
- There is one school in the area: National Cathedral School.
- There is one other pedestrian generator in the area: The National Cathedral.
- There are bus stops on both sides of the street and in the surrounding area.



Eastbound



3500 Block Massachusetts Avenue NW



Westbound

Speed Data Analysis

Posted Speed Limit (MPH)	30
Mean Speed (MPH)	8
85th Percentile Speed (MPH)	12
10 MPH Pace Speed	4-13
ADT	6,810

Both the mean speed and the 85th percentile speeds are lower than the posted speed limit at this location. The 85th percentile speed is 18 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 16 crashes at this location. A breakdown of number of crashes by collision type can be found in the chart on the next page.

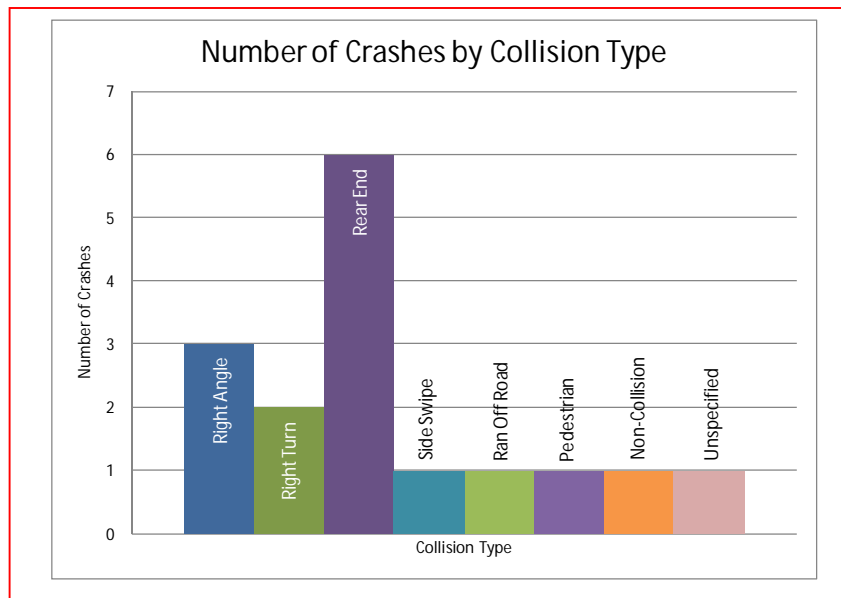


District Department of Transportation

3500 Block Massachusetts Avenue NW

Severity			Weather			Surface condition			Light Condition		
Total	16										
Fatal	0	0.0%	Clear	16	100.0%	Dry	16	100.0%	Day	11	68.8%
Injury	8	50.0%	Rain	0	0.0%	Wet	0	0.0%	Night	5	31.3%
Bicycle	6	37.5%	Snow	0	0.0%	Snow/Ice	0	0.0%			
Truck	1	6.3%									

The most common types of crashes at this location were Rear End (6 crashes), and Right Angle (3 crashes). The other collision types had less than two crashes or less each. One crash involved a contributing factor of the driver speeding. There was one bus and six bicycles involved in crashes at this location. There are a high injury related collisions at this location.

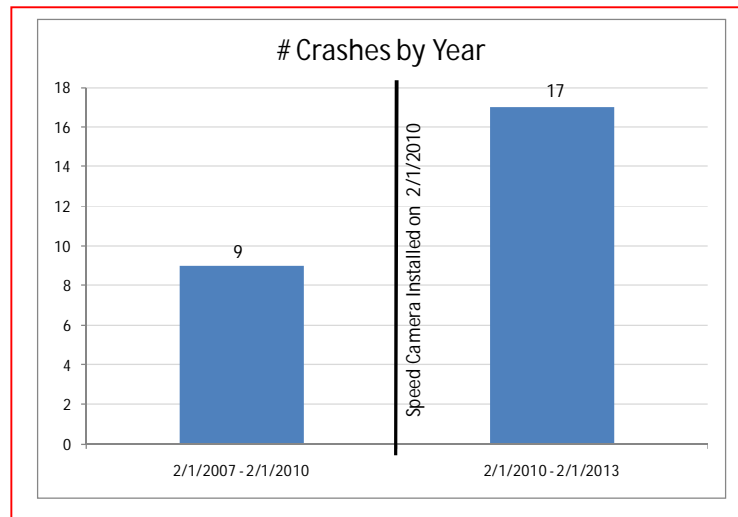


This speed camera was installed on 2/2/2010. The graph on the next page below shows the number of crashes in the three years prior to the speed camera's installation (9 crashes) and the three years after the speed camera's installation (17 crashes). The number of crashes increased after the installation of the speed camera.



District Department of Transportation

3500 Block Massachusetts Avenue 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 collisions. The increase in the number of crashes after the installation of the speed camera suggest an outlier and a more detailed safety analysis is needed to determine the cause of an increase in collisions.
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 houses, churches, embassies, and driveways on both sides of the street
 - b. There is one school located in the area: National Cathedral School.
 - c. There is one other pedestrian generator in the area: The National Cathedral.
 - d. There are multiple bus stops in this area which generate pedestrian activity.

The speed data analysis showed the mean and 85th percentile speeds to be lower than the posted speed limit, and the crash data analysis showed elevated number of speed-related crashes at this location. Due to the analysis results along with the specific site 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

3500 Block of Massachusetts Ave NW EB Speed

EB

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
11/05/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23
03:00	20	0	0	0	0	0	0	0	0	0	0	0	0	0	20
04:00	55	0	0	0	0	0	0	0	0	0	0	0	0	0	55
05:00	169	0	0	0	0	0	0	0	0	0	0	0	0	0	169
06:00	347	2	1	1	0	0	0	0	0	0	0	0	0	0	351
07:00	474	0	1	1	0	0	0	0	0	0	0	0	0	0	476
08:00	415	1	1	1	0	0	0	0	0	0	0	0	0	0	418
09:00	428	0	0	0	1	0	0	0	0	0	0	0	0	0	429
10:00	403	0	0	0	1	0	0	0	0	0	0	0	0	0	404
11:00	379	0	0	0	0	0	0	0	0	0	0	0	0	0	379
12 PM	365	0	0	0	0	0	0	0	0	0	0	0	0	0	365
13:00	363	0	0	0	0	0	0	0	0	0	0	0	0	0	363
14:00	384	0	0	0	0	0	0	0	0	0	0	0	0	0	384
15:00	377	0	0	0	0	0	0	0	0	0	0	0	0	0	377
16:00	370	0	0	0	1	0	0	0	0	0	0	0	0	0	371
17:00	404	0	0	1	0	0	0	0	0	0	0	0	0	0	405
18:00	429	0	0	0	0	0	0	0	0	0	0	0	0	0	429
19:00	339	1	0	0	0	0	0	0	0	0	0	0	0	0	340
20:00	304	0	0	0	0	0	0	0	0	0	0	0	0	0	304
21:00	274	0	0	0	0	0	0	0	0	0	0	0	0	0	274
22:00	224	0	0	0	0	0	0	0	0	0	0	0	0	0	224
23:00	140	0	0	0	0	0	0	0	0	0	0	0	0	0	140
Total	6686	4	3	4	3	0	0	0	0	0	0	0	0	0	6700

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

3500 Block of Massachusetts Ave NW EB 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
11/06/13	72	0	0	0	0	0	0	0	0	0	0	0	0	0	72
01:00	36	0	1	0	1	0	0	0	0	0	0	0	0	0	38
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	108	0	1	0	1	0	0	0	0	0	0	0	0	0	110
Grand Total	6794	4	4	4	4	0	0	0	0	0	0	0	0	0	6810

15th Percentile : 4 MPH
50th Percentile : 8 MPH
85th Percentile : 12 MPH
95th Percentile : 14 MPH

Stats
Mean Speed(Average) : 9 MPH
10 MPH Pace Speed : 4-13 MPH
Number in Pace : 5478
Percent in Pace : 80.4%
Number of Vehicles > 30 MPH : 2
Percent of Vehicles > 30 MPH : 0.0%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

3500 Block of Massachusetts Ave NW EB Volume

Start Time	Tue A.M.	05-Nov-13 P.M.	Wed A.M.	06-Nov-13 P.M.	Thu A.M.	07-Nov-13 P.M.	Daily Average	
							A.M.	P.M.
12:00	*	101	23	*	*	*	23	101
12:15	*	89	18	*	*	*	18	89
12:30	*	99	12	*	*	*	12	99
12:45	*	76	19	*	*	*	19	76
01:00	*	78	11	*	*	*	11	78
01:15	*	94	8	*	*	*	8	94
01:30	*	90	10	*	*	*	10	90
01:45	*	101	9	*	*	*	9	101
02:00	5	90	*	*	*	*	5	90
02:15	10	102	*	*	*	*	10	102
02:30	4	87	*	*	*	*	4	87
02:45	4	105	*	*	*	*	4	105
03:00	4	98	*	*	*	*	4	98
03:15	7	101	*	*	*	*	7	101
03:30	6	94	*	*	*	*	6	94
03:45	3	84	*	*	*	*	3	84
04:00	8	91	*	*	*	*	8	91
04:15	9	86	*	*	*	*	9	86
04:30	19	103	*	*	*	*	19	103
04:45	19	91	*	*	*	*	19	91
05:00	27	94	*	*	*	*	27	94
05:15	37	105	*	*	*	*	37	105
05:30	48	106	*	*	*	*	48	106
05:45	57	100	*	*	*	*	57	100
06:00	68	112	*	*	*	*	68	112
06:15	69	114	*	*	*	*	69	114
06:30	100	98	*	*	*	*	100	98
06:45	114	105	*	*	*	*	114	105
07:00	109	94	*	*	*	*	109	94
07:15	107	84	*	*	*	*	107	84
07:30	134	86	*	*	*	*	134	86
07:45	126	76	*	*	*	*	126	76
08:00	134	86	*	*	*	*	134	86
08:15	116	66	*	*	*	*	116	66
08:30	80	74	*	*	*	*	80	74
08:45	88	78	*	*	*	*	88	78
09:00	89	75	*	*	*	*	89	75
09:15	125	61	*	*	*	*	125	61
09:30	115	63	*	*	*	*	115	63
09:45	100	75	*	*	*	*	100	75
10:00	98	70	*	*	*	*	98	70
10:15	112	63	*	*	*	*	112	63
10:30	96	51	*	*	*	*	96	51
10:45	98	40	*	*	*	*	98	40
11:00	97	54	*	*	*	*	97	54
11:15	103	34	*	*	*	*	103	34
11:30	94	34	*	*	*	*	94	34
11:45	85	18	*	*	*	*	85	18
Total	2724	3976	110	0	0	0	2834	3976
Combined Total	6700		110		0		6810	
Peak	07:30	05:30	12:00				07:30	05:30
Vol.	510	432	72				510	432
P.H.F.	0.951	0.947	0.783				0.951	0.947
ADT		ADT 6,810	AADT 6,810					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: MASSACHUSETTS AVE,NW,NE,SE From FULTON ST,NW TO EDMUNDS ST,NW

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

Prepared By: Rahul Jain

Prepared Date: 10/6/2013

Total Number of Accident:	16	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	3	18.8%	Fixed Object:	0	0.0%
Total Number of Injuries:	10	Left Turn:	0	0.0%	Ran Off Road:	1	6.3%
Total Number of Disabling Injuries:	3	Right Turn:	2	12.5%	Ped. Involved:	1	6.3%
Total Number of NonDisabling Injuries:	2	Rear End:	6	37.5%	Backing:	0	0.0%
Total Number of Pedestrians Involved:	0	Side Swiped:	1	6.3%	Non Collision:	1	6.3%
Total Number of Bicycles Involved:	6	Head On:	0	0.0%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	0	Parked:	0	0.0%	Unspecified:	1	6.3%

Time of Day	#ACC	%	Day o fweek	#ACC	%
07:30 ~ 09:30:	3	18.8%	Sunday:	2	12.5%
09:30 ~ 11:30:	0	0.0%	Monday:	2	12.5%
11:30 ~ 13:30:	2	12.5%	Tuesday:	3	18.8%
13:30 ~ 16:00:	2	12.5%	Wednesday:	2	12.5%
16:00 ~18:30:	4	25.0%	Thursday:	2	12.5%
18:30 ~ 07:30:	5	31.3%	Friday:	4	25.0%
Unspecified:	0	0.0%	Saturday:	1	6.3%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	16	100.0%	Dry:	16	100.0%
Rain:	0	0.0%	Wet:	0	0.0%
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:	0	0.0%	Unspecified:	0	0.0%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	24	70.6%	Fatal Collision:	0	0.0%
Bus:	1	2.9%	Injury Collision:	8	50.0%
Truck:	1	2.9%	PDO Collision:	8	50.0%
Taxi:	1	2.9%			
Minivan:	0	0.0%	Light Condition	#ACC	%
Police/Emergency Vehicle:	0	0.0%	Daylight:	11	68.8%
Motorcycle/Moped:	0	0.0%	Dawn/Dusk:	0	0.0%
Bicycle:	6	17.6%	Dark(Lighted):	4	25.0%
Fixed Object:	0	0.0%	Dark(Not Lighted):	1	6.3%
Unspecified:	1	2.9%	Dark(Unknown Lighting):	0	0.0%
			Unspecified:	0	0.0%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	1	2.9%	In Crosswalk with Signal:	0	0.0%
Driver: Alcohol/Drug:	0	0.0%	In Crosswalk against Signal:	0	0.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	8	23.5%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	0	0.0%	Not in Crosswalk:	0	0.0%
Roadway:	0	0.0%	From Between Parked Cars:	0	0.0%
Unspecified:	25	73.5%	Unspecified:	0	0.0%

10 Records are not approved as of 10/6/2013 1:16:51 PM

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: MASSACHUSETTS AVE,NW,NE,SE From EDMUNDS ST,NW TO FULTON ST,NW

Time Period Covered: From 02/01/2007 To 02/01/2010

Prepared By: Rahul Jain

Prepared Date: 11/18/201

Total Number of Accident:	9	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	1	11.1%	Fixed Object:	1	11.1%
Total Number of Injuries:	4	Left Turn:	1	11.1%	Ran Off Road:	1	11.1%
Total Number of Disabling Injuries:	1	Right Turn:	0	0.0%	Ped. Involved:	0	0.0%
Total Number of NonDisabling Injuries:	0	Rear End:	3	33.3%	Backing:	0	0.0%
Total Number of Pedestrians Involved:	0	Side Swiped:	0	0.0%	Non Collision:	0	0.0%
Total Number of Bicycles Involved:	1	Head On:	1	11.1%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	0	Parked:	1	11.1%	Unspecified:	0	0.0%

Time of Day	#ACC	%	Day o fweek	#ACC	%
07:30 ~ 09:30:	2	22.2%	Sunday:	1	11.1%
09:30 ~ 11:30:	1	11.1%	Monday:	1	11.1%
11:30 ~ 13:30:	0	0.0%	Tuesday:	1	11.1%
13:30 ~ 16:00:	0	0.0%	Wednesday:	1	11.1%
16:00 ~18:30:	2	22.2%	Thursday:	2	22.2%
18:30 ~ 07:30:	4	44.4%	Friday:	2	22.2%
Unspecified:	0	0.0%	Saturday:	1	11.1%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	5	55.6%	Dry:	5	55.6%
Rain:	3	33.3%	Wet:	3	33.3%
Snow:	1	11.1%	Snow/Ice:	1	11.1%
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:	0	0.0%	Unspecified:	0	0.0%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	15	88.2%	Fatal Collision:	0	0.0%
Bus:	0	0.0%	Injury Collision:	4	44.4%
Truck:	0	0.0%	PDO Collision:	5	55.6%
Taxi:	0	0.0%			
Minivan:	0	0.0%	Light Condition	#ACC	%
Police/Emergency Vehicle:	1	5.9%	Daylight:	5	55.6%
Motorcycle/Moped:	0	0.0%	Dawn/Dusk:	0	0.0%
Bicycle:	1	5.9%	Dark(Lighted):	3	33.3%
Fixed Object:	0	0.0%	Dark(Not Lighted):	1	11.1%
Unspecified:	0	0.0%	Dark(Unknown Lighting):	0	0.0%
			Unspecified:	0	0.0%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	1	5.9%	In Crosswalk with Signal:	0	0.0%
Driver: Alcohol/Drug:	0	0.0%	In Crosswalk against Signal:	0	0.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	4	23.5%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	0	0.0%	Not in Crosswalk:	0	0.0%
Roadway:	0	0.0%	From Between Parked Cars:	0	0.0%
Unspecified:	12	70.6%	Unspecified:	0	0.0%

5 Records are not approved as of 11/18/2013 4:02:53 PM