



District Department of Transportation

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

M Street NW at Whitehurst Freeway NW

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
2	206	2	2E	Planned	M Street Northwest, Westbound at Whitehurst Freeway Northwest



The *planned* speed camera will be located in Ward 2 at the intersection of M Street Northwest and Whitehurst Freeway Northwest in the westbound direction. M Street NW runs between Canal Road NW to the west and Florida Avenue NE to the east. The posted speed limit is 35 MPH.

W2 - 44





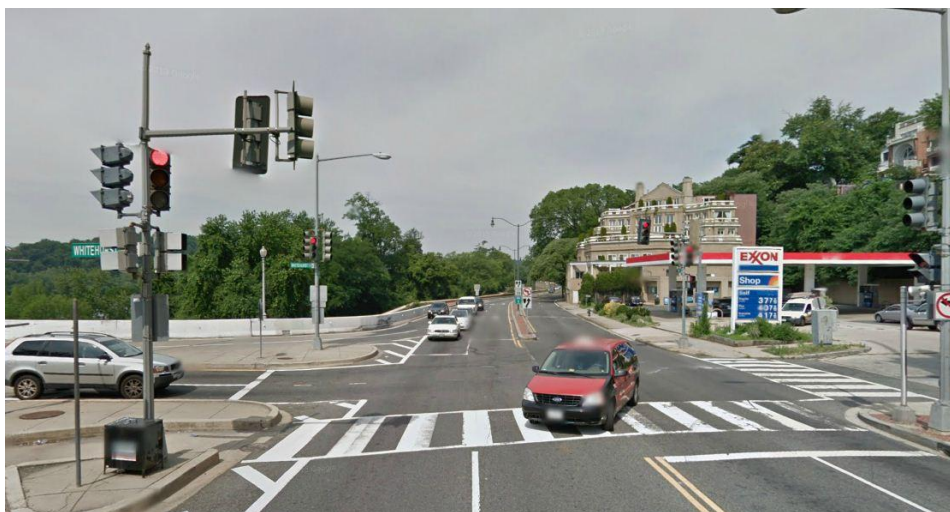
District Department of Transportation

M Street NW at Whitehurst Freeway NW

Field Assessment Summary

M Street NW is assumed to run in an East-West direction, and in this section of roadway is classified as a principal arterial. M Street NW has two through lanes westbound and one through lane, one shared through-right lane, and one right turn only lane eastbound. Whitehurst Freeway NW has two left turn lanes and a right turn lane northbound. Whitehurst Freeway NW ends at M Street NW and a shared right- left turn only lane for exiting traffic from the Exxon Gas Station and office buildings is the north leg of the intersection. Just south of the intersection, Whitehurst Freeway NW has two through lanes southbound. This site has the following characteristics:

- This site is located in a commercial area with business entrances on the north leg.
- Sidewalks with curb and gutter and drainage inlets are located along the northbound side of the south leg and on both sides of the east and west legs.
- The intersection has a traffic signal as well as crosswalks and pedestrian signals for the north and east legs.
- There is a concrete median on the south leg and a brick median on the west leg.
- There is one school in this area: Georgetown University.
- The Capital Crescent Trail and the Chesapeake & Ohio National Park Trail are located to the south, on the other side of the canal.

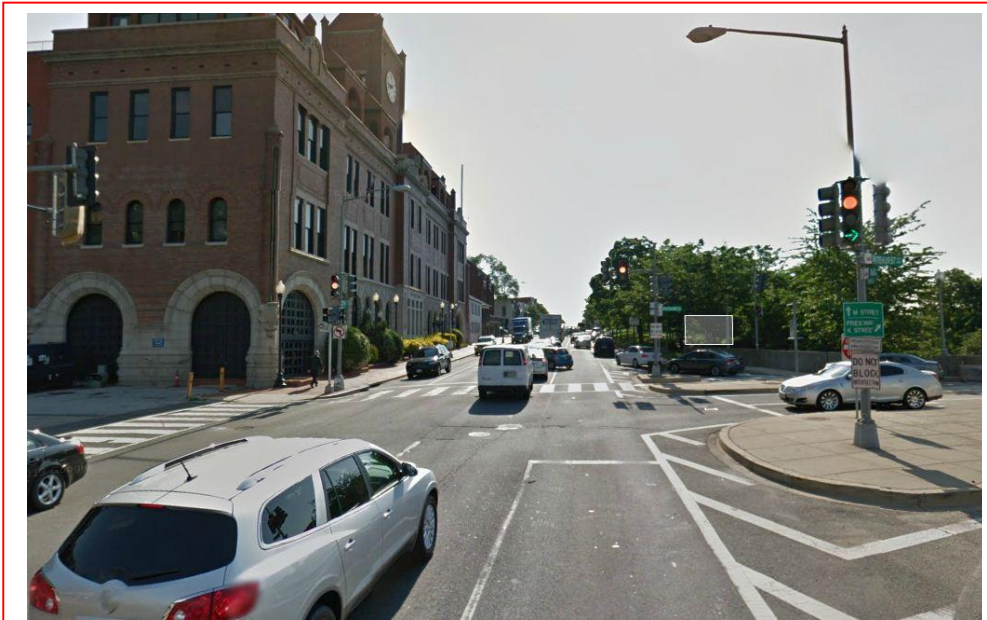


Looking Westbound



District Department of Transportation

M Street NW at Whitehurst Freeway NW



Looking Eastbound

Speed Data Analysis

Posted Speed Limit (MPH)	35
Mean Speed (MPH)	27
85th Percentile Speed (MPH)	32
10 MPH Pace Speed	25-34
ADT	19,942

Both the mean speed and the 85th percentile speed are lower than the posted speed limit. The 85th percentile speed is 3 MPH lower than the posted speed limit.

Crash Data Analysis

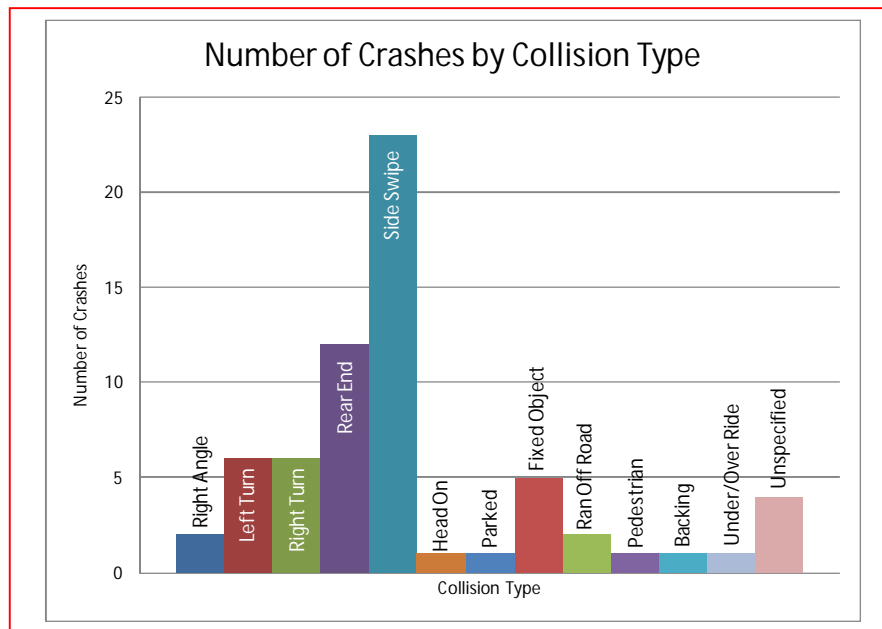
From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 65 crashes at this location. A breakdown of number of crashes by collision type can be found in the chart below. The most common types of collision at this location were Side Swiped (23 crashes) and Rear End (12 crashes). The other collision types had six crashes or less each.



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M Street NW at Whitehurst Freeway NW

Severity			Weather			Surface condition			Light Condition		
Total	65										
Fatal	0	0.0%	Clear	58	89.2%	Dry	50	76.9%	Day	35	53.8%
Injury	15	23.1%	Rain	5	7.7%	Wet	7	10.8%	Night	28	43.1%
Truck	20	30.8%	Snow	0	0.0%	Repairing	0	0.0%			
Taxi	9	13.8%									



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.

This site is located within a half mile radius from one of the Top 20 Hazardous Intersections by Crash Frequency (Wisconsin Ave at M Street) from 2009 to 2011, according to the report *TRAFFIC SAFETY STATISTICS REPORT FOR THE DISTRICT OF COLUMBIA (2009-2011)*².

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

² DDOT, TRAFFIC SAFETY STATISTICS REPORT FOR THE DISTRICT OF COLUMBIA (2009-2011), pg.69.



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M Street NW at Whitehurst Freeway 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 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 at this location. There was a high frequency (15 crashes) of injury-related crashes at this location.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
 - a. There is one school in this area: Georgetown University.
 - b. The Capital Crescent Trail and the Chesapeake & Ohio Canal National Historic Park Trail are located to the south of the intersection, on the other side of the canal.
 - c. 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, 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

M St WB at Whitehurst Frwy NW Speed

West Bound

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
11/04/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	0	0	10	32	11	6	0	0	0	0	0	0	0	0	59
03:00	0	1	8	18	13	5	1	0	0	0	0	0	0	0	46
04:00	3	0	9	71	47	13	0	0	0	0	0	0	0	0	143
05:00	5	0	36	191	166	59	6	1	0	0	0	0	0	0	464
06:00	41	4	53	381	402	73	5	0	0	0	0	0	0	0	959
07:00	52	6	60	689	380	73	4	0	0	0	0	0	0	0	1264
08:00	50	1	80	499	408	73	3	0	0	0	0	0	0	0	1114
09:00	50	4	101	505	357	53	5	0	0	0	0	0	0	0	1075
10:00	44	0	78	453	307	53	2	1	0	0	0	0	0	0	938
11:00	42	4	110	407	285	49	3	1	0	0	0	0	0	0	901
12 PM	40	4	86	483	338	49	8	0	0	0	0	0	0	0	1008
13:00	61	4	89	515	338	57	4	0	0	0	0	0	0	0	1068
14:00	78	20	146	682	391	52	7	2	2	0	0	0	0	0	1380
15:00	127	18	219	642	390	58	10	0	0	0	0	0	0	0	1464
16:00	175	63	271	711	260	20	2	0	0	0	0	0	0	0	1502
17:00	195	103	437	614	128	15	0	0	0	0	0	0	0	0	1492
18:00	148	104	458	640	157	24	4	0	0	0	0	0	0	0	1535
19:00	83	34	280	605	200	38	4	1	0	0	0	0	0	0	1245
20:00	48	3	115	370	187	39	4	1	0	0	1	0	0	0	768
21:00	30	5	90	307	175	23	7	1	0	0	0	0	0	0	638
22:00	22	1	48	216	144	35	6	0	1	0	0	0	0	0	473
23:00	8	1	22	93	90	22	5	1	0	0	0	0	0	0	242
Total	1302	380	2806	9124	5174	889	90	9	3	0	1	0	0	0	19778

SAMMAT ENGINEERING SERVICES, LLC

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M St WB at Whitehurst Frwy NW Speed

West Bound

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
11/05/13	6	0	12	36	44	7	3	0	0	0	0	0	0	0	108
01:00	4	2	4	25	17	8	0	0	0	0	0	0	0	0	60
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	10	2	16	61	61	15	3	0	0	0	0	0	0	0	168
Grand Total	1312	382	2822	9185	5235	904	93	9	3	0	1	0	0	0	19946

15th Percentile : 19 MPH
 50th Percentile : 27 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

Stats
 Mean Speed(Average) : 27 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 12719
 Percent in Pace : 63.8%
 Number of Vehicles > 35 MPH : 1440
 Percent of Vehicles > 35 MPH : 7.2%

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1515 RISING RIDGE ROAD
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M Street WB @ Whitehurst Frwy NW Volume

Start Time	04-Nov-13		05-Nov-13		06-Nov-13		Daily Average	
	Mon A.M.	P.M.	Tue A.M.	P.M.	Wed A.M.	P.M.	A.M.	P.M.
12:00	*	255	41	*	*	*	41	255
12:15	*	239	26	*	*	*	26	239
12:30	*	274	19	*	*	*	19	274
12:45	*	240	22	*	*	*	22	240
01:00	*	248	17	*	*	*	17	248
01:15	*	258	12	*	*	*	12	258
01:30	17	276	*	*	*	*	17	276
01:45	10	286	*	*	*	*	10	286
02:00	15	331	*	*	*	*	15	331
02:15	15	328	*	*	*	*	15	328
02:30	11	383	*	*	*	*	11	383
02:45	18	338	*	*	*	*	18	338
03:00	11	352	*	*	*	*	11	352
03:15	11	394	*	*	*	*	11	394
03:30	9	343	*	*	*	*	9	343
03:45	15	375	*	*	*	*	15	375
04:00	16	363	*	*	*	*	16	363
04:15	18	386	*	*	*	*	18	386
04:30	49	372	*	*	*	*	49	372
04:45	60	381	*	*	*	*	60	381
05:00	62	361	*	*	*	*	62	361
05:15	105	370	*	*	*	*	105	370
05:30	135	367	*	*	*	*	135	367
05:45	162	394	*	*	*	*	162	394
06:00	167	361	*	*	*	*	167	361
06:15	225	384	*	*	*	*	225	384
06:30	307	386	*	*	*	*	307	386
06:45	260	404	*	*	*	*	260	404
07:00	325	363	*	*	*	*	325	363
07:15	322	369	*	*	*	*	322	369
07:30	293	279	*	*	*	*	293	279
07:45	324	234	*	*	*	*	324	234
08:00	327	234	*	*	*	*	327	234
08:15	265	186	*	*	*	*	265	186
08:30	254	185	*	*	*	*	254	185
08:45	268	163	*	*	*	*	268	163
09:00	319	165	*	*	*	*	319	165
09:15	299	162	*	*	*	*	299	162
09:30	236	174	*	*	*	*	236	174
09:45	221	137	*	*	*	*	221	137
10:00	231	138	*	*	*	*	231	138
10:15	235	147	*	*	*	*	235	147
10:30	268	96	*	*	*	*	268	96
10:45	204	92	*	*	*	*	204	92
11:00	225	70	*	*	*	*	225	70
11:15	235	56	*	*	*	*	235	56
11:30	209	54	*	*	*	*	209	54
11:45	232	62	*	*	*	*	232	62
Total	6990	12815	137	0	0	0	7127	12815
Combined Total	19805		137		0		19942	
Peak	07:15	06:15	12:00				07:15	06:15
Vol.	1266	1537	108				1266	1537
P.H.F.	0.968	0.951	0.659				0.968	0.951
ADT	ADT 19,942		AADT 19,942					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: M ST,NW,NE From THIRTY FIFTH ST,NW TO CANAL RD,NW

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

Prepared By: Rahul Jain

Prepared Date: 10/6/2013

		Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Accident:	65	Right Angle:	2	3.1%	Fixed Object:	5	7.7%
Total Number of Fatalities:	0	Left Turn:	6	9.2%	Ran Off Road:	2	3.1%
Total Number of Injuries:	21	Right Turn:	6	9.2%	Ped. Involved:	1	1.5%
Total Number of Disabling Injuries:	2	Rear End:	12	18.5%	Backing:	1	1.5%
Total Number of NonDisabling Injuries:	7	Side Swiped:	23	35.4%	Non Collision:	0	0.0%
Total Number of Pedestrians Involved:	0	Head On:	1	1.5%	Under/Over Ride:	1	1.5%
Total Number of Bicycles Involved:	3	Parked:	1	1.5%	Unspecified:	4	6.2%
Total Number of Motorcycles Involved:	1						

Time of Day	#ACC	%	Day of week	#ACC	%
07:30 ~ 09:30:	4	6.2%	Sunday:	9	13.8%
09:30 ~ 11:30:	7	10.8%	Monday:	5	7.7%
11:30 ~ 13:30:	4	6.2%	Tuesday:	9	13.8%
13:30 ~ 16:00:	6	9.2%	Wednesday:	10	15.4%
16:00 ~ 18:30:	12	18.5%	Thursday:	12	18.5%
18:30 ~ 07:30:	32	49.2%	Friday:	11	16.9%
Unspecified:	0	0.0%	Saturday:	9	13.8%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	58	89.2%	Dry:	50	76.9%
Rain:	5	7.7%	Wet:	7	10.8%
Snow:	0	0.0%	Snow/Ice:	1	1.5%
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:	2	3.1%	Unspecified:	7	10.8%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	80	63.5%	Fatal Collision:	0	0.0%
Bus:	2	1.6%	Injury Collision:	15	23.1%
Truck:	20	15.9%	PDO Collision:	50	76.9%
Taxi:	9	7.1%			
Minivan:	0	0.0%	Light Condition	#ACC	%
Police/Emergency Vehicle:	0	0.0%	Daylight:	35	53.8%
Motorcycle/Moped:	1	0.8%	Dawn/Dusk:	1	1.5%
Bicycle:	3	2.4%	Dark(Lighted):	28	43.1%
Fixed Object:	0	0.0%	Dark(Not Lighted):	0	0.0%
Unspecified:	11	8.7%	Dark(Unknown Lighting):	0	0.0%
			Unspecified:	1	1.5%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	4	3.2%	In Crosswalk with Signal:	0	0.0%
Driver: Alcohol/Drug:	2	1.6%	In Crosswalk against Signal:	0	0.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	19	15.1%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	0	0.0%	Not in Crosswalk:	0	0.0%
Roadway:	1	0.8%	From Between Parked Cars:	0	0.0%
Unspecified:	100	79.4%	Unspecified:	0	0.0%

46 Records are not approved as of 10/6/2013 12:05:58 PM