



District Department of Transportation

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

Columbia Road N/B at 17th Street NW

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
3	302	1	1C	Proposed	Columbia Road Northbound at 17 th Street Northwest



This *proposed* speed camera will be located in Ward 1 at the intersection of Columbia Road and 17th Street Northwest in the northbound direction. Columbia Road runs from Warder Street Northwest in the east to Connecticut Avenue Northwest in the west. The posted speed limit is 25 MPH.

W1 - 53





District Department of Transportation

Columbia Road N/B at 17th Street NW

Field Assessment Summary

Columbia Road is assumed to run in a north-south direction, and is classified as a minor arterial. Columbia Road has one lane in each direction. 17th Street Northwest has one lane in each direction. This site has the following characteristics:

- This site is located in a residential and commercial area with retail stores, apartments on both sides of the street.
- There are sidewalks with curb and gutter, and on-street parking on both sides of the street.
- There is a bicycle lane in both directions of the east and west legs.
- The intersection is stop controlled on the south leg, and there are crosswalks on all legs.
- There are two schools near this site: Henry D. Cooke Elementary School and Adams Morgan Youth Leadership Academy.

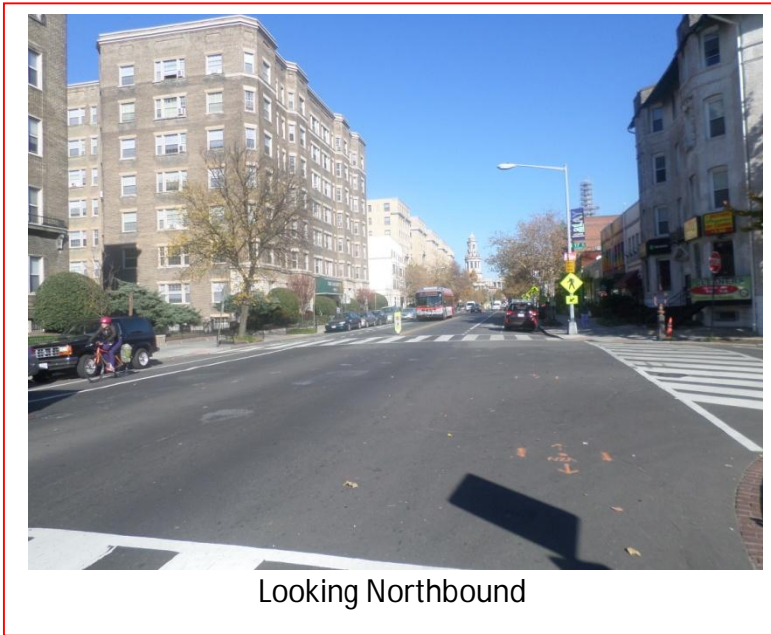


Looking Southbound



District Department of Transportation

Columbia Road N/B at 17th Street NW



Looking Northbound

Speed Data Analysis

Posted Speed Limit (MPH)	25
Mean Speed (MPH)	12
85th Percentile Speed (MPH)	18
10 MPH Pace Speed	5-14
ADT	7,501

The mean speeds and 85th percentile speed are both lower than the posted speed limit. The 85th percentile speed is 7 MPH lower than the speed limit.

Crash Data Analysis

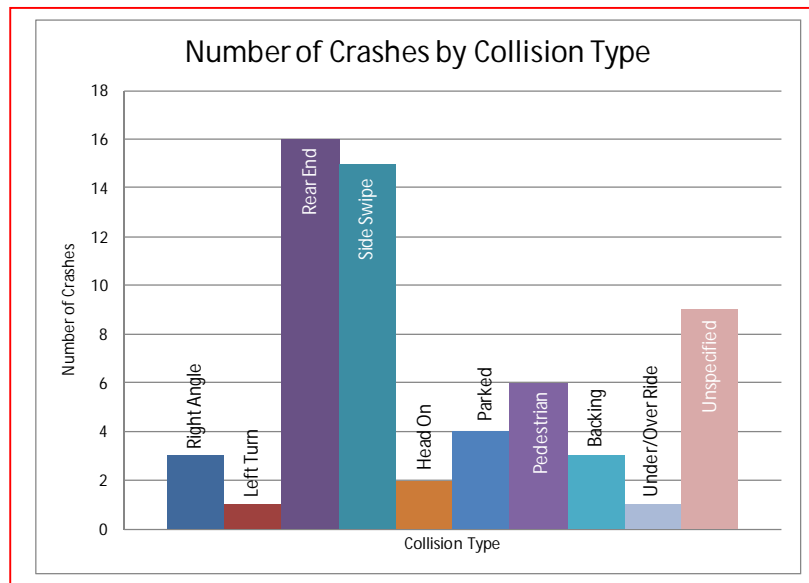
From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 60 crashes at this location. A breakdown of number of crashes by collision type can be found in the chart on the next page. The most common types of collision at this location were Rear End (16 crashes), Side Swipe (15 crashes), and Unspecified (9 crashes).



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Columbia Road N/B at 17th Street NW

Severity		Weather		Surface Condition		Light Condition	
Total	60						
Fatal	0 0.0%	Clear	49 81.7%	Dry	50 83.3%	Day	31 51.7%
Injury	26 43.3%	Rain	4 6.7%	Wet	7 11.7%	Night	27 45.0%
Bicycle	11 18.3%	Snow	1 1.7%	Snow/Ice	0 0.0%		
Pedestrian	6 10.0%						



There was an elevated number of speed related crashes at this location, including rear end and side swipe crashes. The 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. There were also a high number in pedestrian crashes at this location. “A pedestrian hit at 40 mph has an 85 percent chance of being killed; at 30 mph the risk is reduced to 45 percent; at 20 mph the risk is reduced to 5 percent.”²

Safety Nexus

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

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

² AASHTO Highway Safety Manual, 1st Edition, 2010; Volume 1, page 2-14



District Department of Transportation

Columbia Road N/B at 17th Street NW

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, including rear end and side swipe collisions, as well as a high frequency (26 crashes) of injury-related crashes. There were also a high number (6 crashes) of pedestrian crashes at this location.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
 - a. Residential and commercial area with retail stores and apartments on both sides, as well as driveways on adjacent streets.
 - b. There are two schools in this area: Henry D. Cooke Elementary School and Adams Morgan Youth Leadership Academy.
 - c. There are multiple bus stops which generate pedestrian activity.
 - d. There is on-street parking in this location.
 - e. There is a bicycle lane in both directions of the east and west leg.

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, injury-related crashes, and pedestrian-involved crashes, the specific site characteristics, the proximity of schools to the site, and other 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

Columbia Rd NB at 17th 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		
11/04/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	16	12	15	10	1	0	0	0	0	0	0	0	0	0	54
03:00	28	6	11	3	3	0	0	0	0	0	0	0	0	0	51
04:00	12	13	28	22	4	1	0	0	0	0	0	0	0	0	80
05:00	51	44	50	22	3	2	0	0	0	0	0	0	0	0	172
06:00	159	97	74	17	5	0	0	0	0	0	0	0	0	0	352
07:00	254	130	44	16	4	0	0	0	0	0	0	0	0	0	448
08:00	354	99	18	1	1	0	0	0	0	0	0	0	0	0	473
09:00	353	57	7	0	0	0	0	0	0	0	0	0	0	0	417
10:00	258	134	47	6	0	0	0	0	0	0	0	0	0	0	445
11:00	328	65	26	0	0	0	0	0	0	0	0	0	0	0	419
12 PM	305	107	18	2	1	0	0	0	0	0	0	0	0	0	433
13:00	320	95	25	6	0	0	0	0	0	0	0	0	0	0	446
14:00	246	114	51	10	0	0	0	0	0	0	0	0	0	0	421
15:00	248	122	38	1	1	1	0	0	0	0	0	0	0	0	411
16:00	257	130	37	3	0	0	0	0	0	0	0	0	0	0	427
17:00	311	103	39	1	0	0	0	0	0	0	0	0	0	0	454
18:00	349	85	24	1	0	0	0	0	0	0	0	0	0	0	459
19:00	192	111	45	12	0	0	0	0	0	0	0	0	0	0	360
20:00	167	96	60	8	2	0	0	0	0	0	0	0	0	0	333
21:00	103	84	65	13	2	0	0	0	0	0	0	0	0	0	267
22:00	99	80	61	15	3	0	0	0	0	0	0	0	0	0	258
23:00	47	52	48	14	0	1	0	0	0	0	0	0	0	0	162
Total	4457	1836	831	183	30	5	0	0	0	0	0	0	0	0	7342

Daily

15th Percentile : 5 MPH
 50th Percentile : 10 MPH
 85th Percentile : 18 MPH
 95th Percentile : 22 MPH

Mean Speed(Average) : 12 MPH
 10 MPH Pace Speed : 5-14 MPH
 Number in Pace : 4436
 Percent in Pace : 60.4%
 Number of Vehicles > 25 MPH : 184
 Percent of Vehicles > 25 MPH : 2.5%

SAMMAT ENGINEERING SERVICES, LLC

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www.sammateng.com

Columbia Rd NB at 17th St NW Speed

NB

Start Time	1	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	
11/05/13	23	22	41	16	0	0	0	0	0	0	0	0	0	0	102
01:00	10	14	21	12	0	0	0	0	0	0	0	0	0	0	57
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	33	36	62	28	0	0	0	0	0	0	0	0	0	0	159

Daily

15th Percentile : 8 MPH
 50th Percentile : 18 MPH
 85th Percentile : 25 MPH
 95th Percentile : 28 MPH

Mean Speed(Average) : 18 MPH
 10 MPH Pace Speed : 18-27 MPH
 Number in Pace : 74
 Percent in Pace : 46.5%
 Number of Vehicles > 25 MPH : 25
 Percent of Vehicles > 25 MPH : 15.8%

Grand Total	4490	1872	893	211	30	5	0	0	0	0	0	0	0	0	7501
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Overall

15th Percentile : 5 MPH
 50th Percentile : 10 MPH
 85th Percentile : 18 MPH
 95th Percentile : 22 MPH

Mean Speed(Average) : 12 MPH
 10 MPH Pace Speed : 5-14 MPH
 Number in Pace : 4494
 Percent in Pace : 59.9%
 Number of Vehicles > 25 MPH : 204
 Percent of Vehicles > 25 MPH : 2.7%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

Columbia Rd NB at 17th St NW Volume

Start Time	Mon	04-Nov-13	Tue	05-Nov-13	Wed	06-Nov-13	Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	106	29	*	*	*	29	106
12:15	*	109	29	*	*	*	29	109
12:30	*	104	25	*	*	*	25	104
12:45	*	114	19	*	*	*	19	114
01:00	*	123	19	*	*	*	19	123
01:15	*	98	15	*	*	*	15	98
01:30	*	107	14	*	*	*	14	107
01:45	*	118	9	*	*	*	9	118
02:00	11	108	*	*	*	*	11	108
02:15	9	107	*	*	*	*	9	107
02:30	20	110	*	*	*	*	20	110
02:45	14	96	*	*	*	*	14	96
03:00	15	100	*	*	*	*	15	100
03:15	8	99	*	*	*	*	8	99
03:30	12	101	*	*	*	*	12	101
03:45	16	111	*	*	*	*	16	111
04:00	17	88	*	*	*	*	17	88
04:15	18	114	*	*	*	*	18	114
04:30	19	108	*	*	*	*	19	108
04:45	26	117	*	*	*	*	26	117
05:00	28	118	*	*	*	*	28	118
05:15	35	96	*	*	*	*	35	96
05:30	54	125	*	*	*	*	54	125
05:45	55	115	*	*	*	*	55	115
06:00	70	106	*	*	*	*	70	106
06:15	80	124	*	*	*	*	80	124
06:30	101	132	*	*	*	*	101	132
06:45	101	97	*	*	*	*	101	97
07:00	114	76	*	*	*	*	114	76
07:15	105	83	*	*	*	*	105	83
07:30	108	101	*	*	*	*	108	101
07:45	121	100	*	*	*	*	121	100
08:00	116	104	*	*	*	*	116	104
08:15	125	75	*	*	*	*	125	75
08:30	120	75	*	*	*	*	120	75
08:45	112	79	*	*	*	*	112	79
09:00	117	69	*	*	*	*	117	69
09:15	95	58	*	*	*	*	95	58
09:30	91	82	*	*	*	*	91	82
09:45	114	58	*	*	*	*	114	58
10:00	118	79	*	*	*	*	118	79
10:15	102	61	*	*	*	*	102	61
10:30	111	57	*	*	*	*	111	57
10:45	114	61	*	*	*	*	114	61
11:00	113	40	*	*	*	*	113	40
11:15	103	40	*	*	*	*	103	40
11:30	91	43	*	*	*	*	91	43
11:45	112	39	*	*	*	*	112	39
Total	2911	4431	159	0	0	0	3070	4431
Combined Total	7342		159		0		7501	
Peak	07:45	05:45	12:00				07:45	05:45
Vol.	482	477	102				482	477
P.H.F.	0.964	0.903	0.879				0.964	0.903
ADT		ADT 7,501	AADT 7,501					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: COLUMBIA RD,NW From ONTARIO RD,NW TO QUARRY RD,NW

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

Prepared By: Rahul Jain

Prepared Date: 9/15/2013

		Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Accident:	60	Right Angle:	3	5.0%	Fixed Object:	0	0.0%
Total Number of Fatalities:	0	Left Turn:	1	1.7%	Ran Off Road:	0	0.0%
Total Number of Injuries:	37	Right Turn:	0	0.0%	Ped. Involved:	6	10.0%
Total Number of Disabling Injuries:	2	Rear End:	16	26.7%	Backing:	3	5.0%
Total Number of NonDisabling Injuries:	7	Side Swiped:	15	25.0%	Non Collision:	0	0.0%
Total Number of Pedestrians Involved:	6	Head On:	2	3.3%	Under/Over Ride:	1	1.7%
Total Number of Bicycles Involved:	11	Parked:	4	6.7%	Unspecified:	9	15.0%
Total Number of Motorcycles Involved:	0						

Time of Day	#ACC	%
07:30 ~ 09:30:	5	8.3%
09:30 ~ 11:30:	5	8.3%
11:30 ~ 13:30:	8	13.3%
13:30 ~ 16:00:	4	6.7%
16:00 ~18:30:	12	20.0%
18:30 ~ 07:30:	26	43.3%
Unspecified:	0	0.0%

Day o fweek	#ACC	%
Sunday:	11	18.3%
Monday:	5	8.3%
Tuesday:	7	11.7%
Wednesday:	5	8.3%
Thursday:	8	13.3%
Friday:	15	25.0%
Saturday:	9	15.0%

Weather Condition	#ACC	%
Clear:	49	81.7%
Rain:	4	6.7%
Snow:	1	1.7%
Sleet/Hail:	0	0.0%
Fog/Mist:	1	1.7%
Crosswind/Blowing Sand:	0	0.0%
Unspecified:	5	8.3%

Surface Condition	#ACC	%
Dry:	50	83.3%
Wet:	7	11.7%
Snow/Ice:	0	0.0%
Slush:	1	1.7%
Water/Sand:	0	0.0%
Repairing:	0	0.0%
Unspecified:	2	3.3%

Type of Vehicle	#VEH	%
Passenger Car:	68	61.3%
Bus:	6	5.4%
Truck:	8	7.2%
Taxi:	9	8.1%
Minivan:	0	0.0%
Police/Emergency Vehicle:	0	0.0%
Motorcycle/Moped:	1	0.9%
Bicycle:	11	9.9%
Fixed Object:	0	0.0%
Unspecified:	8	7.2%

Accident Severity Type	#ACC	%
Fatal Collision:	0	0.0%
Injury Collision:	26	43.3%
PDO Collision:	34	56.7%

Light Condition	#ACC	%
Daylight:	31	51.7%
Dawn/Dusk:	0	0.0%
Dark(Lighted):	27	45.0%
Dark(Not Lighted):	0	0.0%
Dark(Unknown Lighting):	0	0.0%
Unspecified:	2	3.3%

Contributing Factor	#VEH	%
Driver: Speed:	1	0.9%
Driver: Alcohol/Drug:	0	0.0%
Driver: Electronic Device:	0	0.0%
Driver: Others:	25	22.5%
Vehicle:	0	0.0%
Roadway:	0	0.0%
Unspecified:	85	76.6%

Pedestrian Actions	#ACC	%
In Crosswalk with Signal:	2	33.3%
In Crosswalk against Signal:	1	16.7%
In Crosswalk no Signal:	0	0.0%
In Unmarked Crosswalk:	0	0.0%
Not in Crosswalk:	2	33.3%
From Between Parked Cars:	0	0.0%
Unspecified:	1	16.7%

37 Records are not approved as of 9/15/2013 10:18:36 PM