



District Department of Transportation

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

East Capitol Street at Benning Road NE

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
6	603/604/608	7	7D/7E	Planned	East Capitol Street at Benning Road Northeast, Westbound



This *planned* speed camera will be located in Ward 7 at the intersection of East Capitol Street and Benning Road Northeast in the westbound direction. East Capitol Street runs between Southern Avenue Southeast to the east and C Street Northeast to the west. The posted speed limit is 35 MPH.

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District Department of Transportation

East Capitol Street at Benning Road NE

Field Assessment Summary

East Capitol Street is assumed to run in an east-west direction, and is classified as a principal arterial. East Capitol Street has three travel lanes in each direction and a left turn bay eastbound on the west leg of the intersection. Benning Road Northeast has three lanes in each direction. One of the lanes in each direction of Benning Road Northeast is a left turn lane. This site has the following characteristics:

- This is a residential and commercial area with apartments and businesses.
- There are four schools in the area: Boys and Girls Club of America, DC Prep, Richard Wright Public Charter School, and Plummer Elementary School.
- The Benning Road Metro Station is in the northeast corner of the intersection.
- There is a concrete island in the center of the intersection and concrete medians on the north and south legs. There are grass medians on the east and west legs.
- There is sidewalk on both sides of all four legs of the intersection.
- The intersection has a traffic signal with pedestrian signals and crosswalks on all four legs.
- There are bus stops westbound on the east and west legs and eastbound on the east leg. There is another bus stop on the west side of the south leg.



Looking Eastbound

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District Department of Transportation

East Capitol Street at Benning Road NE



Looking Westbound

Speed Data Analysis

Posted Speed Limit (MPH)	35
Mean Speed (MPH)	30
85th Percentile Speed (MPH)	39
10 MPH Pace Speed	29-38 MPH
ADT	10,663

The mean speed is less than the posted speed while the 85th percentile speed is 4 MPH higher than the posted speed.

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 81 crashes at this location. A breakdown of number of crashes by collision type can be found in the chart on the next page. This location also experienced a high frequency of injury-related crashes. The most common types of crashes at this location were Rear End (25 crashes), Side Swipe (14 crashes), Right Angle (10 crashes) and Right Turn (7 crashes). The other collision types had six crashes or less each. Furthermore, this site experienced a high frequency (37 crashes) of injury-related crashes.

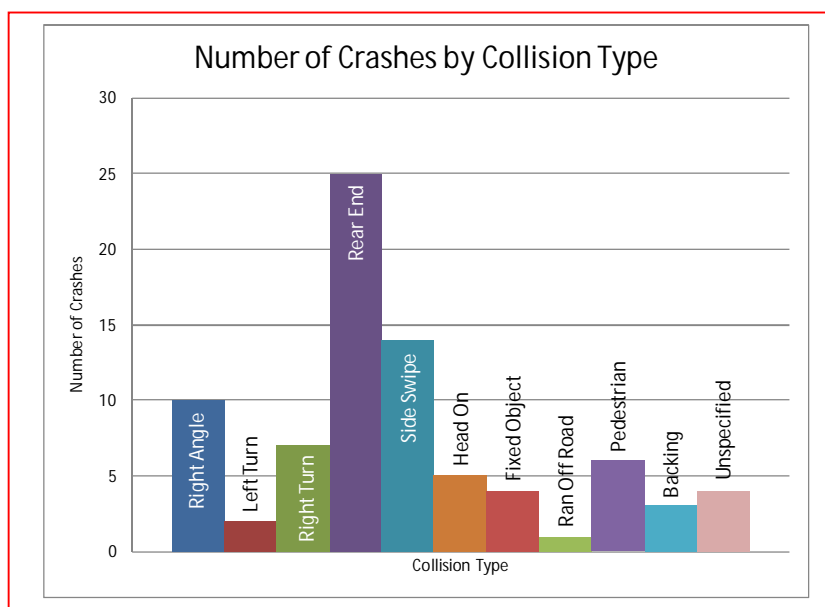
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District Department of Transportation

East Capitol Street at Benning Road NE

Severity			Weather			Surface condition			Light Condition		
Total	81										
Fatal	0	0.0%	Clear	65	80.2%	Dry	66	81.5%	Day	45	55.6%
Injury	37	45.7%	Rain	12	14.8%	Wet	13	16.0%	Night	30	37.0%
Truck	12	14.8%	Snow	1	1.2%	Snow/Ice	0	0.0%			
Bus	8	9.9%									



There were 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” as two errors leading to Rear End and Side Swipe crashes.¹ Both of these errors can be reduced with a decrease in travel speed.

The Benning Road Corridor was listed as one of the Top 10 high frequency crash corridors from 2009 to 2011, according to the *Traffic Safety Statistics Report for the District of Columbia* (2009-2011).² The *Traffic Safety Statistics Report for the District of Columbia* (2009-2011) also listed this site as one of the Top 20 hazardous intersections from 2009 to 2011.³ This site is listed in the Top 5 percent high accident locations in the District from 2010 to 2012.⁴

¹ AASHTO, *Highway Safety Manual*, 1st Edition, 2010; Volume 1, pages 2-13.

² DDOT, *Traffic Safety Statistics Report for the District of Columbia* (2009-2011), page 80.

³ DDOT, *Traffic Safety Statistics Report for the District of Columbia* (2009-2011), page 70.

⁴ DDOT, *Top 5 Percent High Accident Locations Map for 2010-2012*.



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East Capitol Street at Benning Road NE

Safety Nexus

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

1. Speed Data – The 85th percentile speed is higher than the posted speed limit at this location.
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 (37 crashes) of injury-related crashes. The Benning Road Corridor is listed as one of the Top 10 high frequency crash corridors from 2009 to 2011. This intersection is listed as one of the Top 20 hazardous intersections from 2009 to 2011 and is listed in the Top 5 percent high accident locations in the District from 2010 to 2012.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
 - a. This is a residential and commercial area with apartments and businesses.
 - b. There are four schools in the area: Boys and Girls Club of America, DC Prep, Richard Wright Public Charter, and Plummer Elementary School.
 - c. There are several bus stops and one Metrorail station in the area which generate pedestrian activity.

Due to the speed data analysis, the elevated number of speed-related crashes and injury-related 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.

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SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

East Capitol St WB at Benning RD SE Speed

WB

Start Time	15	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	
11/20/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	2	0	7	9	22	12	6	4	1	0	0	0	0	0	63
04:00	1	1	5	10	31	38	30	11	5	1	0	0	0	0	133
05:00	13	2	3	30	80	118	85	56	18	8	2	2	0	0	417
06:00	147	36	107	160	232	168	93	44	14	2	1	0	0	0	1004
07:00	266	50	48	27	3	1	0	0	0	0	0	0	0	0	395
08:00	286	52	77	61	30	11	2	1	1	0	0	0	0	0	521
09:00	69	26	58	127	285	179	96	41	15	6	0	0	0	0	902
10:00	19	0	16	60	195	142	72	20	7	2	2	1	0	0	536
11:00	25	4	22	105	178	144	59	22	9	2	0	0	0	0	570
12 PM	21	0	23	80	179	158	59	13	7	3	2	0	0	0	545
13:00	20	1	15	65	203	167	65	27	7	3	3	0	0	0	576
14:00	27	3	9	81	180	158	58	24	9	3	0	0	0	0	552
15:00	28	5	40	108	243	131	46	17	4	0	0	0	0	0	622
16:00	20	13	49	161	206	119	36	12	2	0	0	0	0	0	618
17:00	39	24	86	170	191	84	18	4	0	0	0	0	0	0	616
18:00	30	15	82	199	212	66	19	5	0	0	0	0	0	0	628
19:00	13	3	21	112	192	89	26	8	0	1	0	0	0	0	465
20:00	11	1	18	91	144	94	24	7	2	0	0	0	0	0	392
21:00	6	1	16	74	164	116	30	6	3	1	0	0	0	0	417
22:00	7	2	11	50	86	97	17	9	4	0	0	0	0	0	283
23:00	3	2	7	22	69	49	16	8	3	1	0	0	0	0	180
Total	1053	241	720	1802	3125	2141	857	339	111	33	10	3	0	0	10435

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

East Capitol St WB at Benning RD SE Speed

WB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
11/21/13	0	0	10	20	35	42	10	4	1	0	1	0	0	0	123
01:00	1	1	3	5	30	12	6	2	1	0	0	0	0	0	61
02:00	1	3	1	9	16	5	7	2	0	0	0	0	0	0	44
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	2	4	14	34	81	59	23	8	2	0	1	0	0	0	228
Grand Total	1055	245	734	1836	3206	2200	880	347	113	33	11	3	0	0	10663

15th Percentile : 12 MPH
50th Percentile : 31 MPH
85th Percentile : 39 MPH
95th Percentile : 44 MPH

Stats
Mean Speed(Average) : 30 MPH
10 MPH Pace Speed : 29-38 MPH
Number in Pace : 4823
Percent in Pace : 45.2%
Number of Vehicles > 35 MPH : 3400
Percent of Vehicles > 35 MPH : 31.9%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

East Capitol St WB at Benning RD SE Volume

Start Time	Wed A.M.	20-Nov-13 P.M.	Thu A.M.	21-Nov-13 P.M.	Fri A.M.	22-Nov-13 P.M.	Daily Average	
							A.M.	P.M.
12:00	*	130	35	*	*	*	35	130
12:15	*	136	33	*	*	*	33	136
12:30	*	141	29	*	*	*	29	141
12:45	*	138	26	*	*	*	26	138
01:00	*	146	20	*	*	*	20	146
01:15	*	139	16	*	*	*	16	139
01:30	*	131	15	*	*	*	15	131
01:45	*	160	10	*	*	*	10	160
02:00	*	139	7	*	*	*	7	139
02:15	*	137	11	*	*	*	11	137
02:30	*	133	14	*	*	*	14	133
02:45	*	143	12	*	*	*	12	143
03:00	15	154	*	*	*	*	15	154
03:15	17	157	*	*	*	*	17	157
03:30	16	144	*	*	*	*	16	144
03:45	15	167	*	*	*	*	15	167
04:00	18	155	*	*	*	*	18	155
04:15	29	159	*	*	*	*	29	159
04:30	43	151	*	*	*	*	43	151
04:45	43	153	*	*	*	*	43	153
05:00	87	144	*	*	*	*	87	144
05:15	77	173	*	*	*	*	77	173
05:30	109	165	*	*	*	*	109	165
05:45	144	134	*	*	*	*	144	134
06:00	185	170	*	*	*	*	185	170
06:15	253	147	*	*	*	*	253	147
06:30	273	157	*	*	*	*	273	157
06:45	293	154	*	*	*	*	293	154
07:00	104	123	*	*	*	*	104	123
07:15	83	102	*	*	*	*	83	102
07:30	86	133	*	*	*	*	86	133
07:45	122	107	*	*	*	*	122	107
08:00	88	101	*	*	*	*	88	101
08:15	86	97	*	*	*	*	86	97
08:30	130	104	*	*	*	*	130	104
08:45	217	90	*	*	*	*	217	90
09:00	265	110	*	*	*	*	265	110
09:15	258	110	*	*	*	*	258	110
09:30	204	92	*	*	*	*	204	92
09:45	175	105	*	*	*	*	175	105
10:00	166	85	*	*	*	*	166	85
10:15	122	74	*	*	*	*	122	74
10:30	123	59	*	*	*	*	123	59
10:45	125	65	*	*	*	*	125	65
11:00	156	62	*	*	*	*	156	62
11:15	142	48	*	*	*	*	142	48
11:30	139	37	*	*	*	*	139	37
11:45	133	33	*	*	*	*	133	33
Total	4541	5894	228	0	0	0	4769	5894
Combined Total	10435		228		0		10663	
Peak	06:00	05:15	12:00				06:00	05:15
Vol.	1004	642	123				1004	642
P.H.F.	0.857	0.928	0.879				0.857	0.928
ADT	ADT 10,663		AADT 10,663					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: EAST CAPITOL ST,BN From FORTY SEVENTH ST,BN TO TEXAS AVE,BN

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

Prepared By: Rahul Jain

Prepared Date: 11/25/2013

Total Number of Accident:	81	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	10	12.3%	Fixed Object:	4	4.9%
Total Number of Injuries:	56	Left Turn:	2	2.5%	Ran Off Road:	1	1.2%
Total Number of Disabling Injuries:	0	Right Turn:	7	8.6%	Ped. Involved:	6	7.4%
Total Number of NonDisabling Injuries:	10	Rear End:	25	30.9%	Backing:	3	3.7%
Total Number of Pedestrians Involved:	5	Side Swiped:	14	17.3%	Non Collision:	0	0.0%
Total Number of Bicycles Involved:	2	Head On:	5	6.2%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	1	Parked:	0	0.0%	Unspecified:	4	4.9%

Time of Day	#ACC	%	Day of week	#ACC	%
07:30 ~ 09:30:	12	14.8%	Sunday:	11	13.6%
09:30 ~ 11:30:	1	1.2%	Monday:	8	9.9%
11:30 ~ 13:30:	5	6.2%	Tuesday:	14	17.3%
13:30 ~ 16:00:	9	11.1%	Wednesday:	9	11.1%
16:00 ~ 18:30:	20	24.7%	Thursday:	10	12.3%
18:30 ~ 07:30:	34	42.0%	Friday:	13	16.0%
Unspecified:	0	0.0%	Saturday:	16	19.8%

Weather Condition	#ACC	%	Surface Condition	#ACC	%
Clear:	65	80.2%	Dry:	66	81.5%
Rain:	12	14.8%	Wet:	13	16.0%
Snow:	1	1.2%	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:	3	3.7%	Unspecified:	2	2.5%

Type of Vehicle	#VEH	%	Accident Severity Type	#ACC	%
Passenger Car:	113	72.9%	Fatal Collision:	0	0.0%
Bus:	8	5.2%	Injury Collision:	37	45.7%
Truck:	12	7.7%	PDO Collision:	44	54.3%
Taxi:	2	1.3%			
Minivan:	0	0.0%	Light Condition	#ACC	%
Police/Emergency Vehicle:	5	3.2%	Daylight:	45	55.6%
Motorcycle/Moped:	1	0.6%	Dawn/Dusk:	3	3.7%
Bicycle:	2	1.3%	Dark(Lighted):	30	37.0%
Fixed Object:	0	0.0%	Dark(Not Lighted):	0	0.0%
Unspecified:	12	7.7%	Dark(Unknown Lighting):	0	0.0%
			Unspecified:	3	3.7%

Contributing Factor	#VEH	%	Pedestrian Actions	#ACC	%
Driver: Speed:	4	2.6%	In Crosswalk with Signal:	3	60.0%
Driver: Alcohol/Drug:	3	1.9%	In Crosswalk against Signal:	2	40.0%
Driver: Electronic Device:	0	0.0%	In Crosswalk no Signal:	0	0.0%
Driver: Others:	30	19.4%	In Unmarked Crosswalk:	0	0.0%
Vehicle:	1	0.6%	Not in Crosswalk:	0	0.0%
Roadway:	0	0.0%	From Between Parked Cars:	0	0.0%
Unspecified:	117	75.5%	Unspecified:	0	0.0%

48 Records are not approved as of 11/25/2013 1:20:48 PM