



District Department of Transportation

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

### South Dakota Avenue at Bladensburg Road NE

#### Study Area and Location

District	PSA	Ward	ANC	Phase	Description
5	503	5	5A/5B	Planned	South Dakota Avenue southeast bound at Bladensburg Road Northeast



This *planned* speed camera location will be located in Ward 5 at the intersection of South Dakota Avenue and Bladensburg Road in the southeast-bound direction. South Dakota Avenue runs between Riggs Road Northeast to the North and New York Avenue Northeast to the south. The posted speed limit is 25 MPH.

W5 - 206





District Department of Transportation

## South Dakota Avenue at Bladensburg Road NE

### Field Assessment Summary

South Dakota Avenue is assumed to run in the northwest-southeast direction, and is classified as a principal arterial. South Dakota Avenue has one shared through/ left lane, one through lane, and one shared through/ right lane northbound as well as one shared through /right, one through, and one left turn lane southbound. Bladensburg Road has one through and right lane, one through lane, and one left turn lane eastbound as well as two through lanes and one left turn lane westbound. This site has the following characteristics:

- This site is located in a residential area with driveways and sidewalks on both sides of the road.
- There is on-street parking on the north side of the west leg of the intersection.
- There are concrete medians on the north and south legs of the intersection. There is a brick median on the east leg.
- The intersection has a traffic signal and crosswalks with pedestrian signals.
- There are three schools in the area: Marshall Elementary School, Fort Lincoln Elementary School and Friendship Public Charter School- Woodridge Elementary and Middle.
- Fort Lincoln Park is also in the area.
- There is a bus stop northwest-bound and southeast-bound on South Dakota Avenue on the north leg just before Franklin Street Northeast. Buses turn from Franklin Street onto South Dakota Avenue. Some buses continue on South Dakota Avenue while others turn left onto Bladensburg Road.



Looking Northwest-bound

W5 - 207



District Department of Transportation

## South Dakota Avenue at Bladensburg Road NE



Looking Southeast-bound

### Speed Data Analysis

Posted Speed Limit (MPH)	25
Mean Speed (MPH)	16
85th Percentile Speed (MPH)	32
10 MPH Pace Speed	4-13 MPH
ADT	11,149

The mean speed is 9 MPH lower than the posted speed limit, and the 85<sup>th</sup> percentile speed is 7 MPH higher than the posted speed limit.

### Crash Data Analysis

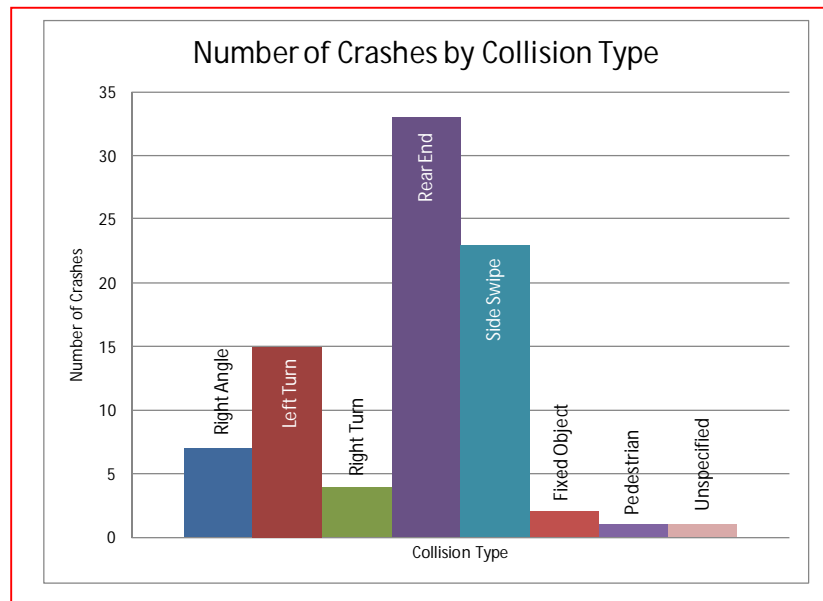
From the Accident Summary Report provided for the dates between January 1, 2010 and December 31, 2012, there were a total of 87 crashes at this location. A breakdown of collision type can be found in the chart on the next page. The most common types of collision at this location were Rear End (33 crashes), Side Swipe (23 crashes), Left Turn (15 crashes), and Right Angle (7 crashes). The other collision types had four crashes or less each. Furthermore, this location experienced a high frequency (34 crashes) of injury related crashes.

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## South Dakota Avenue at Bladensburg Road NE

Severity			Weather			Surface condition			Light Condition		
Total	87										
Fatal	0	0.0%	Clear	73	83.9%	Dry	74	85.1%	Day	63	72.4%
Injury	34	39.1%	Rain	10	11.5%	Wet	13	14.9%	Night	24	27.6%
Truck	16	18.4%	Fog/Mist	3	3.4%	Snow/Ice	0	0.0%			
Bus	7	8.0%									



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”<sup>1</sup> as two errors leading to rear-end and sideswipe crashes. Both of these errors can be decreased with a decrease in travel speed.

This intersection is listed as one of the top twenty hazardous intersections by crash frequency in 2011, according to the report *TRAFFIC SAFETY STATISTICS REPORT FOR THE DISTRICT OF COLUMBIA (2009-2011)*<sup>2</sup>.

<sup>1</sup> AASHTO Highway Safety Manual, 1<sup>st</sup> Edition, 2010; Volume 1, page 2-13

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



District Department of Transportation

## South Dakota Avenue at Bladensburg Road NE

### Safety Nexus

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

1. Speed Data – The 85<sup>th</sup> percentile speed is much higher than the posted speed limit at this location.
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 (34 crashes) of injury related crashes. This intersection is listed as one of the top twenty hazardous intersections by crash frequency in 2011.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
  - a. This is a residential area with driveways and sidewalks on both sides of the street.
  - b. There are three schools in the area: Marshall Elementary School, Fort Lincoln Elementary School, and Friendship Public Charter School- Woodridge Elementary and Middle.
  - c. Fort Lincoln Park is in the area which generates pedestrian and bicycle activity.
  - d. There are several bus stops 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 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](http://www.sammateng.com)

## South Dakota SEB at Bladensburg Rd NE Speed

SEB															
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
11/12/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	1	5	18	10	2	0	0	0	0	0	0	0	0	0	36
03:00	2	2	32	20	6	0	0	0	0	0	0	0	0	0	62
04:00	0	10	45	49	8	2	0	0	0	0	0	0	0	0	114
05:00	25	31	69	87	53	28	0	0	0	0	0	0	0	0	293
06:00	172	65	56	19	43	48	0	0	0	0	0	0	0	0	403
07:00	319	70	43	19	35	77	1	0	0	0	0	0	0	0	564
08:00	334	70	27	22	66	103	0	0	0	0	0	0	0	0	622
09:00	254	71	30	46	97	129	0	0	0	0	0	0	0	0	627
10:00	285	61	59	61	62	50	0	0	0	0	0	0	0	0	578
11:00	325	61	26	55	84	61	0	0	0	0	0	0	0	0	612
12 PM	434	32	12	53	69	51	0	0	0	0	0	0	0	0	651
13:00	370	49	52	91	96	66	0	0	0	0	0	0	0	0	724
14:00	323	51	28	76	125	87	0	0	0	0	0	0	0	0	690
15:00	387	30	12	52	136	126	0	0	0	0	0	0	0	0	743
16:00	362	43	38	62	90	39	0	0	0	0	0	0	0	0	634
17:00	357	32	17	78	134	97	0	0	0	0	0	0	0	0	715
18:00	353	25	16	64	155	84	0	0	0	0	0	0	0	0	697
19:00	277	24	36	78	113	61	1	0	0	0	0	0	0	0	590
20:00	257	19	12	67	104	60	0	0	0	0	0	0	0	0	519
21:00	209	23	4	35	81	50	0	0	0	0	0	0	0	0	402
22:00	150	15	4	18	64	53	0	0	0	0	0	0	0	0	304
23:00	132	28	0	18	52	39	0	0	0	0	0	0	0	0	269
Total	5328	817	636	1080	1675	1311	2	0	0	0	0	0	0	0	10849

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## South Dakota SEB at Bladensburg Rd NE Speed

SEB															
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
11/13/13	74	19	1	4	31	41	0	0	0	0	0	0	0	0	170
01:00	41	11	0	5	13	19	1	0	0	0	0	0	0	0	90
02:00	19	7	0	2	6	6	0	0	0	0	0	0	0	0	40
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	134	37	1	11	50	66	1	0	0	0	0	0	0	0	300
Grand Total	5462	854	637	1091	1725	1377	3	0	0	0	0	0	0	0	11149

15th Percentile : 5 MPH  
 50th Percentile : 11 MPH  
 85th Percentile : 32 MPH  
 95th Percentile : 37 MPH

Stats  
 Mean Speed(Average) : 16 MPH  
 10 MPH Pace Speed : 4-13 MPH  
 Number in Pace : 5717  
 Percent in Pace : 51.3%  
 Number of Vehicles > 25 MPH : 2896  
 Percent of Vehicles > 25 MPH : 26.0%

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## South Dakota SEB at Bladensburg Rd NE Volume

Start Time	Tue 12-Nov-13		Wed 13-Nov-13		Thu 14-Nov-13		Daily Average	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	149	51	*	*	*	51	149
12:15	*	155	49	*	*	*	49	155
12:30	*	172	36	*	*	*	36	172
12:45	*	175	34	*	*	*	34	175
01:00	*	169	30	*	*	*	30	169
01:15	*	176	20	*	*	*	20	176
01:30	*	182	17	*	*	*	17	182
01:45	*	193	23	*	*	*	23	193
02:00	*	183	18	*	*	*	18	183
02:15	*	158	22	*	*	*	22	158
02:30	17	173	*	*	*	*	17	173
02:45	19	176	*	*	*	*	19	176
03:00	13	188	*	*	*	*	13	188
03:15	13	174	*	*	*	*	13	174
03:30	15	210	*	*	*	*	15	210
03:45	21	171	*	*	*	*	21	171
04:00	20	180	*	*	*	*	20	180
04:15	26	173	*	*	*	*	26	173
04:30	26	110	*	*	*	*	26	110
04:45	42	171	*	*	*	*	42	171
05:00	42	178	*	*	*	*	42	178
05:15	74	172	*	*	*	*	74	172
05:30	78	190	*	*	*	*	78	190
05:45	99	175	*	*	*	*	99	175
06:00	122	189	*	*	*	*	122	189
06:15	90	165	*	*	*	*	90	165
06:30	89	181	*	*	*	*	89	181
06:45	102	162	*	*	*	*	102	162
07:00	125	155	*	*	*	*	125	155
07:15	128	143	*	*	*	*	128	143
07:30	150	143	*	*	*	*	150	143
07:45	161	149	*	*	*	*	161	149
08:00	160	145	*	*	*	*	160	145
08:15	163	136	*	*	*	*	163	136
08:30	136	116	*	*	*	*	136	116
08:45	163	122	*	*	*	*	163	122
09:00	167	97	*	*	*	*	167	97
09:15	148	107	*	*	*	*	148	107
09:30	160	100	*	*	*	*	160	100
09:45	152	98	*	*	*	*	152	98
10:00	149	98	*	*	*	*	149	98
10:15	132	69	*	*	*	*	132	69
10:30	162	70	*	*	*	*	162	70
10:45	139	67	*	*	*	*	139	67
11:00	165	71	*	*	*	*	165	71
11:15	146	66	*	*	*	*	146	66
11:30	136	72	*	*	*	*	136	72
11:45	165	60	*	*	*	*	165	60
Total	3915	6934	300	0	0	0	4215	6934
Combined Total	10849		300		0		11149	
Peak	08:45	02:45	12:00				08:45	02:45
Vol.	638	748	170				638	748
P.H.F.	0.955	0.890	0.833				0.955	0.890
ADT	ADT 11,149		AADT 11,149					



DC Department of Transportation - Traffic Accident Reporting and Analysis System

## Accident Summary Report (R-8)

**Corridor:** SOUTH DAKOTA AVE,NE From FRANKLIN ST,NE TO THIRTY FIRST ST,NE

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

**Prepared By:** Rahul Jain

**Prepared Date:** 10/6/2013

		<b>Collision Type</b>	<b>#ACC</b>	<b>%</b>	<b>Collision Type</b>	<b>#ACC</b>	<b>%</b>
Total Number of Accident:	87	Right Angle:	7	8.0%	Fixed Object:	2	2.3%
Total Number of Fatalities:	0	Left Turn:	15	17.2%	Ran Off Road:	1	1.1%
Total Number of Injuries:	48	Right Turn:	4	4.6%	Ped. Involved:	1	1.1%
Total Number of Disabling Injuries:	0	Rear End:	33	37.9%	Backing:	0	0.0%
Total Number of NonDisabling Injuries:	3	Side Swiped:	23	26.4%	Non Collision:	0	0.0%
Total Number of Pedestrians Involved:	1	Head On:	0	0.0%	Under/Over Ride:	0	0.0%
Total Number of Bicycles Involved:	0	Parked:	0	0.0%	Unspecified:	1	1.1%
Total Number of Motorcycles Involved:	0						

<b>Time of Day</b>	<b>#ACC</b>	<b>%</b>
07:30 ~ 09:30:	14	16.1%
09:30 ~ 11:30:	10	11.5%
11:30 ~ 13:30:	11	12.6%
13:30 ~ 16:00:	12	13.8%
16:00 ~18:30:	10	11.5%
18:30 ~ 07:30:	30	34.5%
Unspecified:	0	0.0%

<b>Day o fweek</b>	<b>#ACC</b>	<b>%</b>
Sunday:	13	14.9%
Monday:	8	9.2%
Tuesday:	15	17.2%
Wednesday:	13	14.9%
Thursday:	15	17.2%
Friday:	11	12.6%
Saturday:	12	13.8%

<b>Weather Condition</b>	<b>#ACC</b>	<b>%</b>
Clear:	73	83.9%
Rain:	10	11.5%
Snow:	0	0.0%
Sleet/Hail:	0	0.0%
Fog/Mist:	3	3.4%
Crosswind/Blowing Sand:	0	0.0%
Unspecified:	1	1.1%

<b>Surface Condition</b>	<b>#ACC</b>	<b>%</b>
Dry:	74	85.1%
Wet:	13	14.9%
Snow/Ice:	0	0.0%
Slush:	0	0.0%
Water/Sand:	0	0.0%
Repairing:	0	0.0%
Unspecified:	0	0.0%

<b>Type of Vehicle</b>	<b>#VEH</b>	<b>%</b>
Passenger Car:	127	73.4%
Bus:	7	4.0%
Truck:	16	9.2%
Taxi:	5	2.9%
Minivan:	0	0.0%
Police/Emergency Vehicle:	2	1.2%
Motorcycle/Moped:	0	0.0%
Bicycle:	0	0.0%
Fixed Object:	0	0.0%
Unspecified:	16	9.2%

<b>Accident Severity Type</b>	<b>#ACC</b>	<b>%</b>
Fatal Collision:	0	0.0%
Injury Collision:	34	39.1%
PDO Collision:	53	60.9%

<b>Light Condition</b>	<b>#ACC</b>	<b>%</b>
Daylight:	63	72.4%
Dawn/Dusk:	0	0.0%
Dark(Lighted):	23	26.4%
Dark(Not Lighted):	1	1.1%
Dark(Unknown Lighting):	0	0.0%
Unspecified:	0	0.0%

<b>Contributing Factor</b>	<b>#VEH</b>	<b>%</b>
Driver: Speed:	5	2.9%
Driver: Alcohol/Drug:	3	1.7%
Driver: Electronic Device:	0	0.0%
Driver: Others:	24	13.9%
Vehicle:	0	0.0%
Roadway:	3	1.7%
Unspecified:	138	79.8%

<b>Pedestrian Actions</b>	<b>#ACC</b>	<b>%</b>
In Crosswalk with Signal:	0	0.0%
In Crosswalk against Signal:	0	0.0%
In Crosswalk no Signal:	1	100.0%
In Unmarked Crosswalk:	0	0.0%
Not in Crosswalk:	0	0.0%
From Between Parked Cars:	0	0.0%
Unspecified:	0	0.0%

60 Records are not approved as of 10/6/2013 5:00:16 PM