



District Department of Transportation

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

K Street EB at 27th Street NW

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
2	207	2	2A	Planned	K Street Eastbound at 27 th Street Northwest



The *planned* speed camera will be located in Ward 2 at the intersection of K Street and 27th Street NW in the eastbound direction. K Street runs between Whitehurst Freeway Northwest to the west through downtown Washington, DC and to Florida Avenue Northeast to the east. The posted speed limit is 25 MPH.

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K Street EB at 27th Street NW

Field Assessment Summary

K Street NW is assumed to run in an East-West direction, and is classified as a principal arterial. K Street has three through lanes and one shared through-right turn lane in the westbound direction, and a left turn lane, two through lanes, and a shared through-right lane in the eastbound direction. 27th Street NW has one through lane in the southbound direction and one left turn lane and one shared left/right turn lane in the northbound direction. This site has the following characteristics:

- This site is located in a residential area with houses and apartments in the surrounding area to the east.
- The site is also adjacent to the Whitehurst Freeway and Rock Creek and Potomac Parkway, which carries mostly commuting traffic during the weekday peak hours.
- There is sidewalk with curb and gutter and drainage inlets on the eastbound side of the east leg.
- There are concrete medians on east and west legs and grass median on north leg.
- There is a traffic signal and crosswalk on the south leg with pedestrian signals.
- There are three schools in this area: Georgetown University, Fashion Institute of Design, and Georgetown Montessori School.
- The Rock Creek Park Trails and Chesapeake and Ohio Canal National Historic Park are also in the area.



Looking Eastbound



District Department of Transportation

K Street EB at 27th Street NW



Looking Westbound

Speed Data Analysis

Posted Speed Limit (MPH)	25
Mean Speed (MPH)	11
85th Percentile Speed (MPH)	15
10 MPH Pace Speed	4-13
ADT	5,412

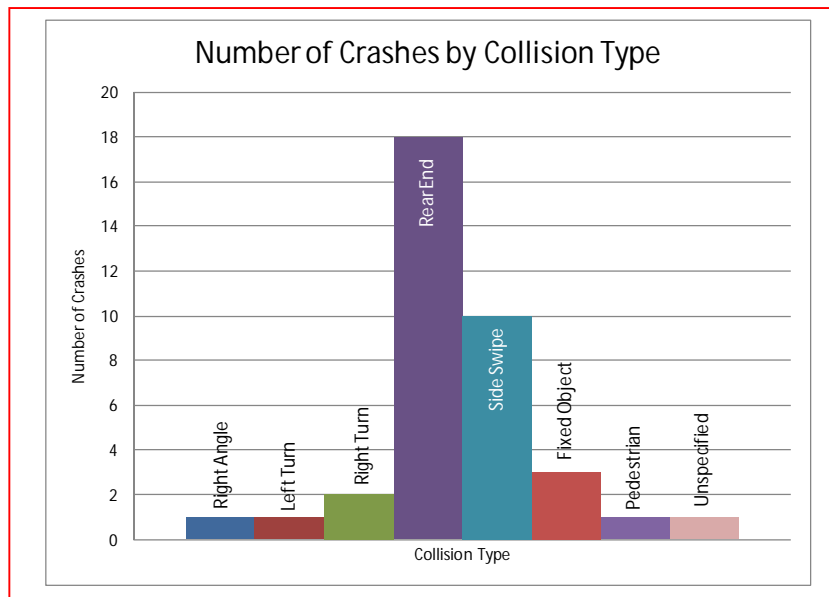
Both the mean speed and the 85th percentile speed are significantly lower than the posted speed limit. The 85th percentile speed is 10 MPH lower than the posted speed limit.

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 37 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 (18 crashes) and Side Swipe (10 crashes). The other collision types had less than three crashes or less.



Severity			Weather			Surface condition			Light Condition		
Total	37										
Fatal	0	0.0%	Clear	30	81.1%	Dry	30	81.1%	Day	18	48.6%
Injury	9	24.3%	Rain	2	5.4%	Wet	4	10.8%	Night	19	51.4%
Taxi	11	29.7%	Snow	0	0.0%	Snow/Ice	1	2.7%			
Truck	3	8.1%									



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.

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 collisions. There was a high frequency (9 crashes) of injury-related crashes at this location.

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



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K Street EB at 27th Street NW

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 and apartments in the surrounding area to the east.
 - b. The site is also adjacent to the Whitehurst Freeway and Rock Creek and Potomac Parkway, which carries mostly commuting traffic during the weekday peak hours.
 - c. There are three schools in this area: Georgetown University, Fashion Institute of Design, and Georgetown Montessori School.
 - d. The Rock Creek Park Trails and Chesapeake and Ohio Canal National Historic Park are in the area which generates 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 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.

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

K St EB at 27th St NW 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
11/12/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	17	1	4	1	0	0	0	0	0	0	0	0	0	0	23
03:00	15	2	6	5	0	0	0	0	0	0	0	0	0	0	28
04:00	122	10	11	6	2	0	0	0	0	0	0	0	0	0	151
05:00	208	37	42	34	7	0	0	0	0	0	0	0	0	0	328
06:00	250	75	89	47	3	0	0	0	0	0	0	0	0	0	464
07:00	268	111	102	33	1	0	0	0	0	0	0	0	0	0	515
08:00	296	80	62	10	0	0	0	0	0	0	0	0	0	0	448
09:00	279	36	24	5	1	0	0	0	0	0	0	0	0	0	345
10:00	180	11	6	1	0	0	0	0	0	0	0	0	0	0	198
11:00	257	32	20	4	0	0	0	0	0	0	0	0	0	0	313
12 PM	248	27	14	3	1	0	0	0	0	0	0	0	0	0	293
13:00	242	25	16	10	1	0	0	0	0	0	0	0	0	0	294
14:00	236	25	12	1	0	1	0	0	0	0	0	0	0	0	275
15:00	206	12	7	4	2	0	0	0	0	0	0	0	0	0	231
16:00	231	12	5	4	0	0	0	0	0	0	0	0	0	0	252
17:00	148	1	0	0	0	0	0	0	0	0	0	0	0	0	149
18:00	145	3	1	0	0	0	0	0	0	0	0	0	0	0	149
19:00	189	14	3	1	1	0	0	0	0	0	0	0	0	0	208
20:00	189	21	7	6	2	0	0	0	0	0	0	0	0	0	225
21:00	197	26	7	2	1	0	1	0	0	0	0	0	0	0	234
22:00	127	12	6	2	1	0	0	0	0	0	0	0	0	0	148
23:00	60	16	3	2	0	0	0	0	0	0	0	0	0	0	81
Total	4110	589	447	181	23	1	1	0	0	0	0	0	0	0	5352

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

K St EB at 27th St NW Speed

EB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
11/13/13	29	4	4	2	0	0	0	0	0	0	0	0	0	0	39
01:00	13	6	0	1	1	0	0	0	0	0	0	0	0	0	21
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	42	10	4	3	1	0	0	0	0	0	0	0	0	0	60
Grand Total	4152	599	451	184	24	1	1	0	0	0	0	0	0	0	5412

15th Percentile : 4 MPH
 50th Percentile : 9 MPH
 85th Percentile : 15 MPH
 95th Percentile : 22 MPH

Stats
 Mean Speed(Average) : 11 MPH
 10 MPH Pace Speed : 4-13 MPH
 Number in Pace : 3715
 Percent in Pace : 68.6%
 Number of Vehicles > 25 MPH : 145
 Percent of Vehicles > 25 MPH : 2.7%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

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K St EB at 27th St NW Volume

Start Time	12-Nov-13		13-Nov-13		14-Nov-13		Daily Average	
	Tue A.M.	P.M.	Wed A.M.	P.M.	Thu A.M.	P.M.	A.M.	P.M.
12:00	*	84	14	*	*	*	14	84
12:15	*	60	5	*	*	*	5	60
12:30	*	72	15	*	*	*	15	72
12:45	*	77	5	*	*	*	5	77
01:00	*	67	6	*	*	*	6	67
01:15	*	79	7	*	*	*	7	79
01:30	*	82	5	*	*	*	5	82
01:45	*	66	3	*	*	*	3	66
02:00	6	75	*	*	*	*	6	75
02:15	7	80	*	*	*	*	7	80
02:30	4	69	*	*	*	*	4	69
02:45	6	51	*	*	*	*	6	51
03:00	4	67	*	*	*	*	4	67
03:15	5	70	*	*	*	*	5	70
03:30	12	52	*	*	*	*	12	52
03:45	7	42	*	*	*	*	7	42
04:00	16	70	*	*	*	*	16	70
04:15	28	56	*	*	*	*	28	56
04:30	51	67	*	*	*	*	51	67
04:45	56	59	*	*	*	*	56	59
05:00	57	47	*	*	*	*	57	47
05:15	71	31	*	*	*	*	71	31
05:30	94	37	*	*	*	*	94	37
05:45	106	34	*	*	*	*	106	34
06:00	95	31	*	*	*	*	95	31
06:15	128	35	*	*	*	*	128	35
06:30	109	36	*	*	*	*	109	36
06:45	132	47	*	*	*	*	132	47
07:00	121	35	*	*	*	*	121	35
07:15	137	50	*	*	*	*	137	50
07:30	139	61	*	*	*	*	139	61
07:45	118	62	*	*	*	*	118	62
08:00	122	56	*	*	*	*	122	56
08:15	125	51	*	*	*	*	125	51
08:30	100	58	*	*	*	*	100	58
08:45	101	60	*	*	*	*	101	60
09:00	89	55	*	*	*	*	89	55
09:15	87	62	*	*	*	*	87	62
09:30	56	59	*	*	*	*	56	59
09:45	113	58	*	*	*	*	113	58
10:00	61	59	*	*	*	*	61	59
10:15	48	32	*	*	*	*	48	32
10:30	35	35	*	*	*	*	35	35
10:45	54	22	*	*	*	*	54	22
11:00	78	28	*	*	*	*	78	28
11:15	77	25	*	*	*	*	77	25
11:30	79	15	*	*	*	*	79	15
11:45	79	13	*	*	*	*	79	13
Total	2813	2539	60	0	0	0	2873	2539
Combined Total	5352		60		0		5412	
Peak	06:45	00:45	12:00				06:45	00:45
Vol.	529	305	39				529	305
P.H.F.	0.951	0.930	0.650				0.951	0.930
ADT	ADT 5,412		AADT 5,412					

DC Department of Transportation - Traffic Accident Reporting and Analysis System

Accident Summary Report (R-8)

Corridor: K ST,NW,NE From TWENTY FIFTH ST,NW TO TWENTY SEVENTH ST,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:	37	Right Angle:	1	2.7%	Fixed Object:	3	8.1%
Total Number of Fatalities:	0	Left Turn:	1	2.7%	Ran Off Road:	0	0.0%
Total Number of Injuries:	11	Right Turn:	2	5.4%	Ped. Involved:	1	2.7%
Total Number of Disabling Injuries:	1	Rear End:	18	48.6%	Backing:	0	0.0%
Total Number of NonDisabling Injuries:	1	Side Swiped:	10	27.0%	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:	1	Parked:	0	0.0%	Unspecified:	1	2.7%
Total Number of Motorcycles Involved:	1						

Time of Day	#ACC	%
07:30 ~ 09:30:	2	5.4%
09:30 ~ 11:30:	2	5.4%
11:30 ~ 13:30:	2	5.4%
13:30 ~ 16:00:	7	18.9%
16:00 ~18:30:	4	10.8%
18:30 ~ 07:30:	20	54.1%
Unspecified:	0	0.0%

Day o fweek	#ACC	%
Sunday:	6	16.2%
Monday:	4	10.8%
Tuesday:	9	24.3%
Wednesday:	2	5.4%
Thursday:	4	10.8%
Friday:	8	21.6%
Saturday:	4	10.8%

Weather Condition	#ACC	%
Clear:	30	81.1%
Rain:	2	5.4%
Snow:	0	0.0%
Sleet/Hail:	0	0.0%
Fog/Mist:	2	5.4%
Crosswind/Blowing Sand:	1	2.7%
Unspecified:	2	5.4%

Surface Condition	#ACC	%
Dry:	30	81.1%
Wet:	4	10.8%
Snow/Ice:	1	2.7%
Slush:	0	0.0%
Water/Sand:	0	0.0%
Repairing:	0	0.0%
Unspecified:	2	5.4%

Type of Vehicle	#VEH	%
Passenger Car:	46	67.6%
Bus:	2	2.9%
Truck:	3	4.4%
Taxi:	11	16.2%
Minivan:	0	0.0%
Police/Emergency Vehicle:	0	0.0%
Motorcycle/Moped:	1	1.5%
Bicycle:	1	1.5%
Fixed Object:	0	0.0%
Unspecified:	4	5.9%

Accident Severity Type	#ACC	%
Fatal Collision:	0	0.0%
Injury Collision:	9	24.3%
PDO Collision:	28	75.7%

Light Condition	#ACC	%
Daylight:	18	48.6%
Dawn/Dusk:	0	0.0%
Dark(Lighted):	19	51.4%
Dark(Not Lighted):	0	0.0%
Dark(Unknown Lighting):	0	0.0%
Unspecified:	0	0.0%

Contributing Factor	#VEH	%
Driver: Speed:	0	0.0%
Driver: Alcohol/Drug:	2	2.9%
Driver: Electronic Device:	0	0.0%
Driver: Others:	11	16.2%
Vehicle:	0	0.0%
Roadway:	2	2.9%
Unspecified:	53	77.9%

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

21 Records are not approved as of 10/6/2013 11:54:50 AM