



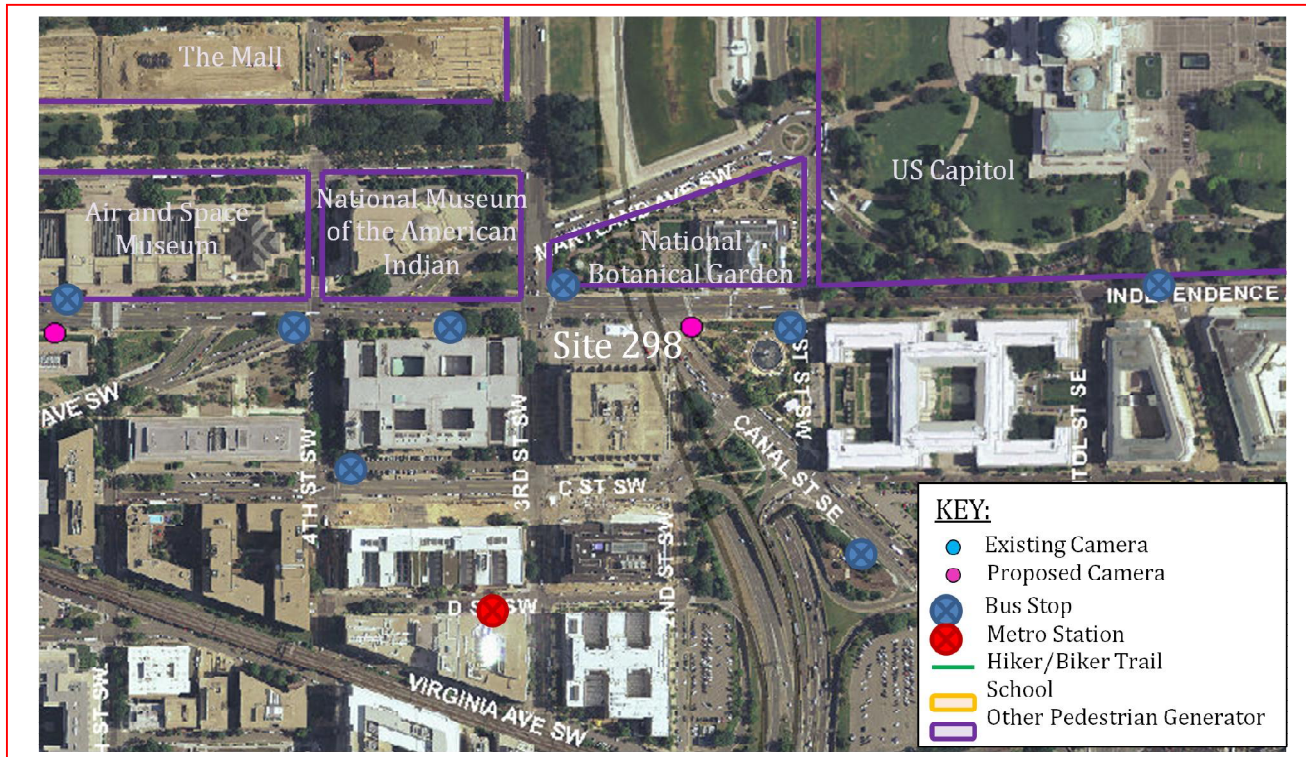
District Department of Transportation

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

Inside Southern part of 3rd Street Tunnel

Study Area and Location

District	PSA	Ward	ANC	Phase	Description
1	102/103	2 & 6	2C/6D	Proposed	Inside Southern part of 3 rd St Tunnel Northbound and Southbound



The *proposed* speed camera is located in Wards 2 and 6 inside the Southern part of the 3rd Street Tunnel in the northbound and southbound directions. The 3rd Street Tunnel, also known as I-395, runs between New York Avenue NW to the north Street Northeast to the north and I-695 to the south.

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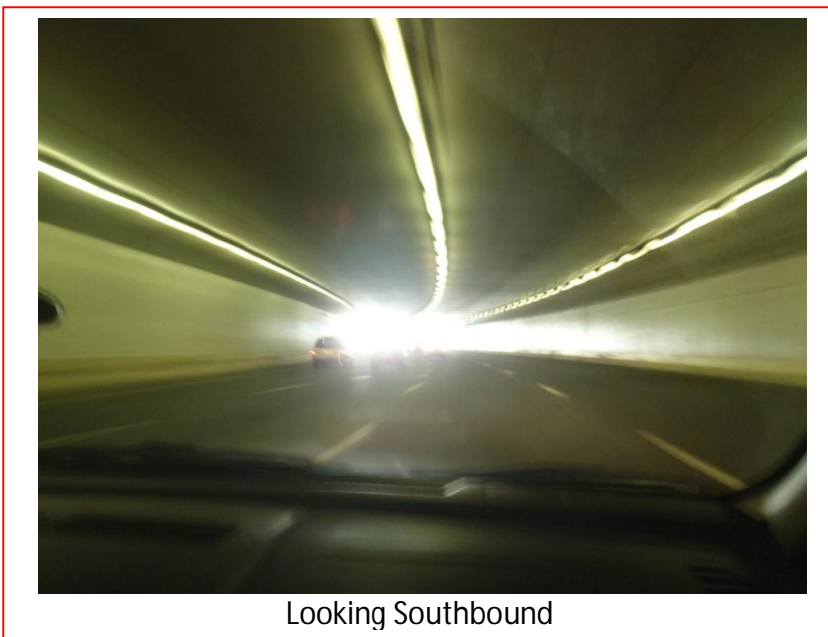
District Department of Transportation

Inside Southern part of 3rd Street Tunnel

Field Assessment Summary

The 3rd Street is assumed to run in a north-south direction, and is classified as a collector. The 3rd Street Tunnel has four travel lanes in each direction. This site has the following characteristics:

- This site is located inside of the 3rd Street Tunnel. The tunnel is lighted.
- The pavement is in good condition. There grade is flat in both directions.
- There is a 3-foot shoulder on both sides of the freeway in both directions.



Looking Southbound

Speed Data Analysis

	North-Bound	South-Bound
Posted Speed Limit (MPH)	45	45
Mean Speed (MPH)	38	33
85th Percentile Speed (MPH)	45	45
10 MPH Pace Speed	37-46	33-42
Sample Size	45,108	40,131
ADT	85,239	

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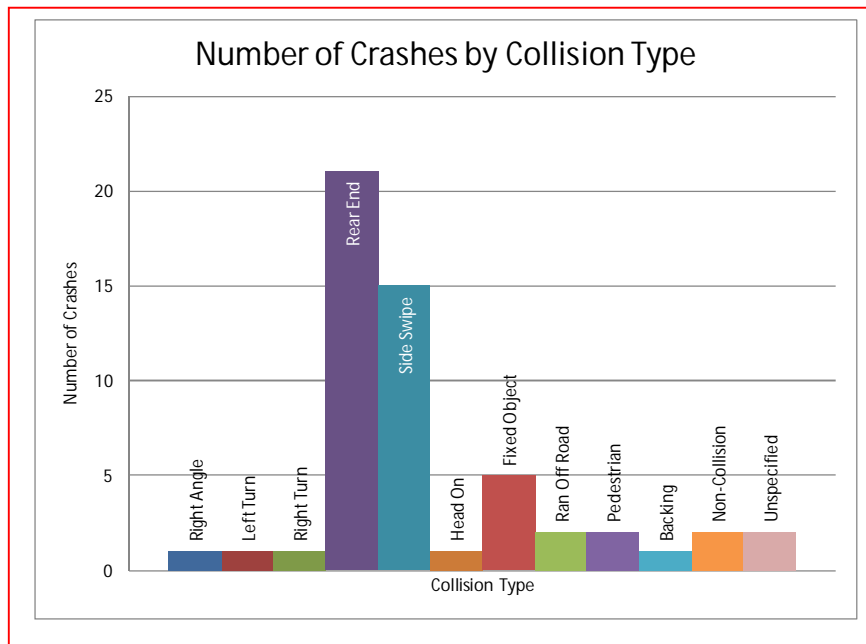
Inside Southern part of 3rd Street Tunnel

The mean speed is lower than the posted speed limit in both directions and the 85th percentile speed is the same as the posted speed limit at this location in both directions.

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 54 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 crashes at this location were Rear End (21 crashes), Side Swipe (15 crashes). Furthermore, this site experienced a high frequency (18 crashes) of injury-related crashes.

Severity			Weather			Surface condition			Light Condition		
Total	54										
Fatal	0	0.0%	Clear	45	83.3%	Dry	43	79.6%	Day	31	57.4%
Injury	18	33.3%	Rain	6	11.1%	Wet	8	14.8%	Night	19	35.2%
Truck	12	22.2%	Snow	1	1.9%	Snow/Ice	1	1.9%			
Taxi	6	11.1%									



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



District Department of Transportation

Inside Southern part of 3rd Street Tunnel

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 safety:

1. Speed Data – The speed data analysis shows travel speeds as the same as or lower than the posted speed limit.
2. Crash Data – There were an elevated number of speed-related crashes at this location, including rear end and side swipe crashes, as well as a high frequency (18 crashes) of injury-related crashes.
3. Field Assessment – The following site characteristics suggest a need for a safer travel environment:
 - a. Freeway environment in a lighted tunnel with a 3-foot shoulder on both sides of the freeway.

Although the 85th percentile speeds were the same as the posted speed limit, due to the elevated number of speed-related and injury-related crashes, there is a nexus between traffic safety and the speed camera at this location.

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

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

Inside southern part of 3rd St Tunnel NB Speed

NB

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
12/04/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	10	0	0	0	11	51	42	41	16	3	2	0	0	0	176
03:00	7	0	0	1	11	68	143	104	38	5	0	0	0	0	377
04:00	52	0	0	0	7	169	472	373	134	24	1	0	0	0	1232
05:00	182	0	0	6	35	448	1273	744	150	21	1	0	0	0	2860
06:00	261	0	0	6	83	768	1382	482	80	8	1	1	0	0	3072
07:00	276	0	2	37	257	1007	1143	280	31	0	0	0	0	0	3033
08:00	348	38	47	47	164	262	132	39	2	0	0	0	0	0	1079
09:00	301	21	23	44	228	644	603	114	13	0	0	0	0	0	1991
10:00	166	0	6	22	195	890	855	229	28	3	0	0	0	0	2394
11:00	178	0	2	13	176	851	899	307	50	4	0	1	0	0	2481
12 PM	186	0	2	32	214	840	832	237	37	5	1	0	0	0	2386
13:00	146	0	0	11	135	793	1008	343	45	5	1	0	0	0	2487
14:00	191	0	0	2	116	780	1099	388	73	6	0	0	0	0	2655
15:00	174	0	1	15	148	747	1108	478	55	10	0	0	0	0	2736
16:00	215	0	2	8	129	1024	1095	308	47	7	0	0	0	0	2835
17:00	185	0	0	1	149	932	1039	279	30	6	1	0	0	0	2622
18:00	138	0	0	5	113	863	1042	364	42	3	0	0	0	0	2570
19:00	105	0	0	3	51	565	943	307	44	7	1	1	0	0	2027
20:00	71	0	0	1	55	443	760	280	53	12	4	0	0	0	1679
21:00	74	0	0	3	43	427	732	264	49	4	0	0	0	0	1596
22:00	52	0	1	4	24	289	667	262	65	13	1	0	0	0	1378
23:00	17	0	0	3	26	230	343	140	39	9	1	0	0	0	808
Total	3335	59	86	264	2370	13091	17612	6363	1121	155	15	3	0	0	44474

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

www.sammateng.com

Inside southern part of 3rd St Tunnel NB Speed

NB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
12/05/13	8	0	0	5	10	125	154	69	13	1	0	0	0	0	385
01:00	10	0	0	4	15	47	89	53	20	7	2	1	1	0	249
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	18	0	0	9	25	172	243	122	33	8	2	1	1	0	634
Grand Total	3353	59	86	273	2395	13263	17855	6485	1154	163	17	4	1	0	45108

15th Percentile : 31 MPH
 50th Percentile : 40 MPH
 85th Percentile : 45 MPH
 95th Percentile : 49 MPH

Stats
 Mean Speed(Average) : 38 MPH
 10 MPH Pace Speed : 37-46 MPH
 Number in Pace : 27236
 Percent in Pace : 60.4%
 Number of Vehicles > 45 MPH : 8667
 Percent of Vehicles > 45 MPH : 19.2%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

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Inside southern part of 3rd St Tunnel NB Volume

Start Time	04-Dec-13		05-Dec-13		06-Dec-13		Daily Average	
	Wed A.M.	P.M.	Thu A.M.	P.M.	Fri A.M.	P.M.	A.M.	P.M.
12:00	*	538	126	*	*	*	126	538
12:15	*	605	92	*	*	*	92	605
12:30	*	660	92	*	*	*	92	660
12:45	*	583	75	*	*	*	75	583
01:00	*	643	64	*	*	*	64	643
01:15	*	607	73	*	*	*	73	607
01:30	*	612	55	*	*	*	55	612
01:45	*	625	57	*	*	*	57	625
02:00	48	650	*	*	*	*	48	650
02:15	38	690	*	*	*	*	38	690
02:30	44	612	*	*	*	*	44	612
02:45	46	703	*	*	*	*	46	703
03:00	56	653	*	*	*	*	56	653
03:15	97	684	*	*	*	*	97	684
03:30	89	718	*	*	*	*	89	718
03:45	135	681	*	*	*	*	135	681
04:00	194	731	*	*	*	*	194	731
04:15	289	706	*	*	*	*	289	706
04:30	335	738	*	*	*	*	335	738
04:45	414	660	*	*	*	*	414	660
05:00	667	688	*	*	*	*	667	688
05:15	701	677	*	*	*	*	701	677
05:30	724	617	*	*	*	*	724	617
05:45	768	640	*	*	*	*	768	640
06:00	748	708	*	*	*	*	748	708
06:15	774	589	*	*	*	*	774	589
06:30	750	659	*	*	*	*	750	659
06:45	800	614	*	*	*	*	800	614
07:00	839	563	*	*	*	*	839	563
07:15	751	537	*	*	*	*	751	537
07:30	711	482	*	*	*	*	711	482
07:45	732	445	*	*	*	*	732	445
08:00	579	445	*	*	*	*	579	445
08:15	293	410	*	*	*	*	293	410
08:30	103	403	*	*	*	*	103	403
08:45	104	421	*	*	*	*	104	421
09:00	122	392	*	*	*	*	122	392
09:15	476	427	*	*	*	*	476	427
09:30	706	387	*	*	*	*	706	387
09:45	687	390	*	*	*	*	687	390
10:00	688	375	*	*	*	*	688	375
10:15	596	395	*	*	*	*	596	395
10:30	576	313	*	*	*	*	576	313
10:45	534	295	*	*	*	*	534	295
11:00	617	258	*	*	*	*	617	258
11:15	623	228	*	*	*	*	623	228
11:30	630	174	*	*	*	*	630	174
11:45	611	148	*	*	*	*	611	148
Total	18695	25779	634	0	0	0	19329	25779
Combined Total	44474		634		0		45108	
Peak	06:15	03:45	12:00				06:15	03:45
Vol.	3163	2856	385				3163	2856
P.H.F.	0.942	0.967	0.764				0.942	0.967
ADT	ADT 45,108		AADT 45,108					

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

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Inside southern part of 3rd St Tunnel SB Speed

SB

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
12/05/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	6	0	0	0	5	37	67	91	76	36	17	5	0	0	340
03:00	3	0	0	0	8	39	56	96	73	31	13	6	0	0	325
04:00	9	0	0	0	4	43	114	153	116	55	13	7	2	1	517
05:00	57	0	0	4	27	190	338	310	229	95	26	10	1	0	1287
06:00	155	0	1	14	181	580	603	448	183	59	9	2	0	0	2235
07:00	239	0	0	47	404	710	644	415	170	48	13	2	0	0	2692
08:00	232	1	7	167	472	587	591	343	119	23	1	0	0	0	2543
09:00	208	0	12	226	485	614	456	192	46	13	1	0	0	0	2253
10:00	178	1	14	189	521	615	405	185	46	8	3	1	0	0	2166
11:00	188	1	19	262	522	608	386	166	38	4	1	1	0	0	2196
12 PM	270	1	43	317	562	487	414	149	38	8	1	0	0	0	2290
13:00	252	1	34	356	561	501	390	183	48	11	1	1	0	0	2339
14:00	290	2	86	368	480	402	364	229	80	23	2	0	0	0	2326
15:00	306	4	67	402	476	458	360	212	92	28	2	1	0	0	2408
16:00	338	23	80	189	217	212	102	53	15	7	1	0	0	0	1237
17:00	323	31	7	1	0	0	0	0	0	0	0	0	0	0	362
18:00	340	31	15	60	93	73	54	26	7	3	0	0	0	0	702
19:00	245	0	56	347	482	460	334	251	124	33	6	2	2	0	2342
20:00	232	2	41	401	626	417	261	177	80	23	7	2	2	0	2271
21:00	171	1	15	246	565	493	336	178	81	28	12	3	2	0	2131
22:00	148	0	12	191	448	444	293	135	87	35	15	12	1	0	1821
23:00	132	0	15	146	441	462	232	165	67	28	11	8	3	3	1713
Total	4322	99	524	3933	7580	8432	6800	4157	1815	599	155	63	13	4	38496

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

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Inside southern part of 3rd St Tunnel SB Speed

SB

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
12/06/13	49	0	7	76	268	306	182	95	52	20	11	3	2	1	1072
01:00	15	0	4	46	142	151	85	65	30	14	5	5	1	0	563
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	64	0	11	122	410	457	267	160	82	34	16	8	3	1	1635
Grand Total	4386	99	535	4055	7990	8889	7067	4317	1897	633	171	71	16	5	40131

15th Percentile : 11 MPH
 50th Percentile : 35 MPH
 85th Percentile : 45 MPH
 95th Percentile : 51 MPH

Stats
 Mean Speed(Average) : 33 MPH
 10 MPH Pace Speed : 33-42 MPH
 Number in Pace : 15167
 Percent in Pace : 37.8%
 Number of Vehicles > 45 MPH : 6824
 Percent of Vehicles > 45 MPH : 17.0%

SAMMAT ENGINEERING SERVICES, LLC

1515 RISING RIDGE ROAD
MOUNT AIRY, MD 21771

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Inside southern part of 3rd St Tunnel SB Volume

Start Time	05-Dec-13		06-Dec-13		07-Dec-13		Daily Average	
	Thu A.M.	P.M.	Fri A.M.	P.M.	Sat A.M.	P.M.	A.M.	P.M.
12:00	*	580	378	*	*	*	378	580
12:15	*	563	283	*	*	*	283	563
12:30	*	583	195	*	*	*	195	583
12:45	*	564	216	*	*	*	216	564
01:00	*	567	154	*	*	*	154	567
01:15	*	559	132	*	*	*	132	559
01:30	*	592	142	*	*	*	142	592
01:45	*	621	135	*	*	*	135	621
02:00	90	532	*	*	*	*	90	532
02:15	92	667	*	*	*	*	92	667
02:30	87	565	*	*	*	*	87	565
02:45	71	562	*	*	*	*	71	562
03:00	76	635	*	*	*	*	76	635
03:15	83	589	*	*	*	*	83	589
03:30	85	580	*	*	*	*	85	580
03:45	81	604	*	*	*	*	81	604
04:00	101	609	*	*	*	*	101	609
04:15	102	379	*	*	*	*	102	379
04:30	138	155	*	*	*	*	138	155
04:45	176	94	*	*	*	*	176	94
05:00	257	100	*	*	*	*	257	100
05:15	290	81	*	*	*	*	290	81
05:30	338	68	*	*	*	*	338	68
05:45	402	113	*	*	*	*	402	113
06:00	472	92	*	*	*	*	472	92
06:15	529	103	*	*	*	*	529	103
06:30	598	99	*	*	*	*	598	99
06:45	636	408	*	*	*	*	636	408
07:00	674	614	*	*	*	*	674	614
07:15	642	595	*	*	*	*	642	595
07:30	720	572	*	*	*	*	720	572
07:45	656	561	*	*	*	*	656	561
08:00	625	611	*	*	*	*	625	611
08:15	645	555	*	*	*	*	645	555
08:30	676	581	*	*	*	*	676	581
08:45	597	524	*	*	*	*	597	524
09:00	559	563	*	*	*	*	559	563
09:15	588	521	*	*	*	*	588	521
09:30	550	525	*	*	*	*	550	525
09:45	556	522	*	*	*	*	556	522
10:00	560	473	*	*	*	*	560	473
10:15	501	477	*	*	*	*	501	477
10:30	567	443	*	*	*	*	567	443
10:45	538	428	*	*	*	*	538	428
11:00	564	521	*	*	*	*	564	521
11:15	517	444	*	*	*	*	517	444
11:30	577	425	*	*	*	*	577	425
11:45	538	323	*	*	*	*	538	323
Total	16554	21942	1635	0	0	0	18189	21942
Combined Total	38496		1635		0		40131	
Peak	07:00	02:15	12:00				07:00	02:15
Vol.	2692	2429	1072				2692	2429
P.H.F.	0.935	0.910	0.709				0.935	0.910
ADT	ADT 40,131		AADT 40,131					

Accident Summary Report (R-8)

Corridor: INTERSTATE 395,BN From INTERSTATE 695 INTERSTATE,BN TO FOURTH ST,NW

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

Prepared By: Rahul Jain

Prepared Date: 12/27/2012

Total Number of Accident:	54	Collision Type	#ACC	%	Collision Type	#ACC	%
Total Number of Fatalities:	0	Right Angle:	1	1.9%	Fixed Object:	5	9.3%
Total Number of Injuries:	28	Left Turn:	1	1.9%	Ran Off Road:	2	3.7%
Total Number of Disabling Injuries:	1	Right Turn:	1	1.9%	Ped. Involved:	2	3.7%
Total Number of NonDisabling Injuries:	3	Rear End:	21	38.9%	Backing:	1	1.9%
Total Number of Pedestrians Involved:	1	Side Swiped:	15	27.8%	Non Collision:	2	3.7%
Total Number of Bicycles Involved:	1	Head On:	1	1.9%	Under/Over Ride:	0	0.0%
Total Number of Motorcycles Involved:	1	Parked:	0	0.0%	Unspecified:	2	3.7%
Time of Day				#ACC	%	Day o fweek	
07:30 ~ 09:30:				3	5.6%	Sunday:	
09:30 ~ 11:30:				6	11.1%	Monday:	
11:30 ~ 13:30:				10	18.5%	Tuesday:	
13:30 ~ 16:00:				8	14.8%	Wednesday:	
16:00 ~18:30:				7	13.0%	Thursday:	
18:30 ~ 07:30:				20	37.0%	Friday:	
Unspecified:				0	0.0%	Saturday:	
Weather Condition				#ACC	%	Surface Condition	
Clear:				45	83.3%	Dry:	
Rain:				6	11.1%	Wet:	
Snow:				1	1.9%	Snow/Ice:	
Sleet/Hail:				1	1.9%	Slush:	
Fog/Mist:				0	0.0%	Water/Sand:	
Crosswind/Blowing Sand:				0	0.0%	Repairing:	
Unspecified:				1	1.9%	Unspecified:	
Type of Vehicle				#VEH	%	Accident Severity Type	
Passenger Car:				76	75.2%	Fatal Collision:	
Bus:				4	4.0%	Injury Collision:	
Truck:				12	11.9%	PDO Collision:	
Taxi:				6	5.9%	Light Condition	
Minivan:				0	0.0%	Daylight:	
Police/Emergency Vehicle:				1	1.0%	Dawn/Dusk:	
Motorcycle/Moped:				1	1.0%	Dark(Lighted):	
Bicycle:				1	1.0%	Dark(Not Lighted):	
Fixed Object:				0	0.0%	Dark(Unknown Lighting):	
Unspecified:				0	0.0%	Unspecified:	
Contributing Factor				#VEH	%	Pedestrian Actions	
Driver: Speed:				0	0.0%	In Crosswalk with Signal:	
Driver: Alcohol/Drug:				0	0.0%	In Crosswalk against Signal:	
Driver: Electronic Device:				0	0.0%	In Crosswalk no Signal:	
Driver: Others:				20	19.8%	In Unmarked Crosswalk:	
Vehicle:				0	0.0%	Not in Crosswalk:	
Roadway:				0	0.0%	From Between Parked Cars:	
Unspecified:				81	80.2%	Unspecified:	

29 Records are not approved as of 12/27/2013 6:38:51 PM