Appendix D: Detailed Test Results

Test Schedule…….. D-1
24-Hour Test 1 10/03/01……. D-2
24-Hour Test 2 10/16/01……. D-7
24-Hour Test 3 10/18/01……. D-12
24-Hour Test 4 10/23/01……. D-17
24-Hour Test 5 10/25/01……. D-22
24-Hour Test 6 11/01/01……. D-27
24-Hour Test 7 11/08/01……. D-32
24-Hour Test 8 11/13/01……. D-37
24-Hour Test 9 11/27/01……. D-42
24-Hour Test 10 11/29/01…….. D-47
24-Hour Test 11 12/11/01…….. D-52
24-Hour Test 12 12/18/01…….. D-57
24-Hour Test 13 1/03/02…….. D-62
24-Hour Test 14 1/14/02…….. D-67
24-Hour Test 15 1/16/02…….. D-72
24-Hour Test 16 1/18/02…….. D-77
24-Hour Test 17 2/18/02…….. D-82
24-Hour Test 18 2/22/02…….. D-87
24-Hour Test 19 2/25/02…….. D-92
24-Hour Test 20 2/27/02…….. D-97
24-Hour Test 21 2/28/02…….. D-102
24-Hour Test 22 3/07/02…….. D-107
24-Hour Test 23 3/11/02…….. D-112
24-Hour Test 24 3/22/02…….. D-117
24-Hour Test 25 4/22/02…….. D-120

Test Schedule

Test Site	Mounting Location	Height	Vendor Recommended Mounting Height								
			3M	ASIM IR 254	ASIM DT 272	ASIM TT 262	ECM Loren	Autosense II	SmarTek	Autoscope	Traficon
			N/A	16-32 ft	1.6-39 ft	16-32 ft	20-40 ft	20-25 ft	25-40 ft	25-45 ft	25-45 ft
Freeway	Base Location #1	5 ft									
	(Sidefire)	15 ft									
	15 ft from the 1st lane	20 ft							**16-Oct-01**		
		25 ft							**18-Oct-01**	**16-Oct-01**	**18-Feb-02**
		30 ft							**23-Oct-01**	**18-Oct-01**	**28-Feb-02**
		35 ft							**25-Oct-01**	**23-Oct-01**	**22-Feb-02**
		40 ft							**1-Nov-01**	**25-Oct-01**	**25-Feb-02**
		45ft								**1-Nov-01**	**27-Feb-02**
	Base Location #2	5 ft			**8-Nov-01**						
	(Sidefire)	15 ft									
	25 ft from the 1st lane	20 ft							**8-Nov-01**		
		25 ft							**13-Nov-01**	**8-Nov-01**	
		30 ft							**29-Nov-01**	**13-Nov-01**	
		35 ft							**27-Nov-01**	**29-Nov-01**	**29-Nov-01**
		40 ft							**11-Dec-01**	**27-Nov-01**	**27-Nov-01**
		45 ft								**11-Dec-01**	**11-Dec-01**
	Base Location #3	5 ft			**18-Dec-01**						
	(Sidefire)	15 ft									
	35 ft from the 1st lane	20 ft							**18-Jan-02**		
		25 ft							**16-Jan-02**	**18-Jan-02**	**18-Jan-02**
		30 ft							**14-Jan-02**	**16-Jan-02**	**16-Jan-02**
		35 ft							**3-Jan-02**	**14-Jan-02**	**14-Jan-02**
		40 ft							**18-Dec-01**	**3-Jan-02**	**3-Jan-02**
		45 ft								**18-Dec-01**	**18-Dec-01**
	Catwalk	21 ft		**3-Oct-01**	**3-Oct-01**	**3-Oct-01**		**3-Oct-01**			**11-Mar-02**
	(Overhead)	17 ft		**7-Mar-02**		**7-Mar-02**					
		30 ft								**3-Oct-01**	**7-Mar-02**
	Under Pavement	n/a	**18-Dec-01**								
	Under Bridge	n/a	**22-Apr-02**								
Intersection	NE Luminaire Extension	37 ft								**22-Mar-02**	**22-Mar-02**
	NW TMC Pole	Optimal		**15-Mar-02**	**Mar-15-02**				**15-Mar-02**		

24 Hours Test 1
Freeway – Volume
12:00 PM, October 3, 2001 to 12:00 PM, October 4, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
ASIM TT 262	Overhead	0	21	1	26,924	26,579	-1.3%	2.8%	152	0.9988
ASIM DT 272	Overhead	0	21	2	23,879	23,102	-3.3%	8.7%	131	0.9723
ASIM IR 254	Overhead	0	21	3	24,955	22,467	-10.0%	10.0%	171	0.9930
Autosense II	Overhead	0	22	3	24,955	24,854	-0.4%	0.7%	196	0.9998
Autoscope	Overhead	0	30	1	26,924	26,437	-1.8%	2.2%	151	0.9991
				2	23,879	23,667	-0.9%	1.5%	136	0.9989
				3	24,955	24,580	-1.5%	1.6%	194	0.9999

Note:

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

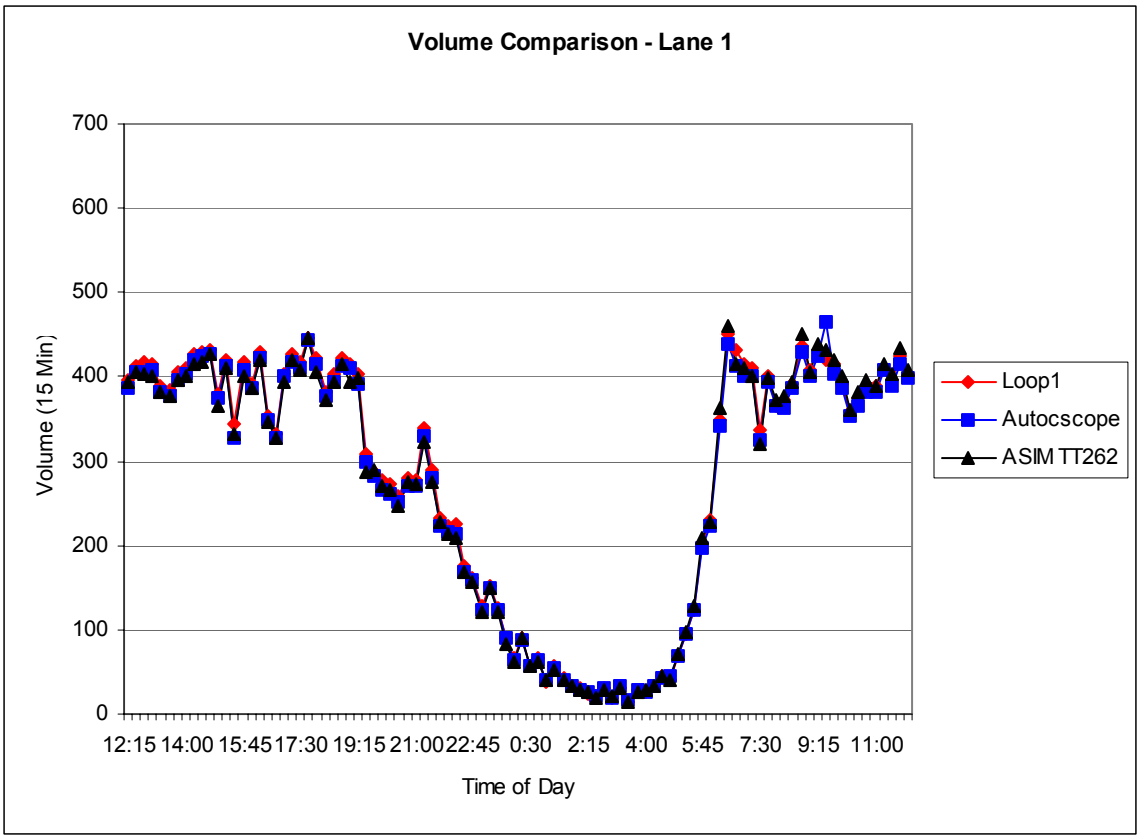
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

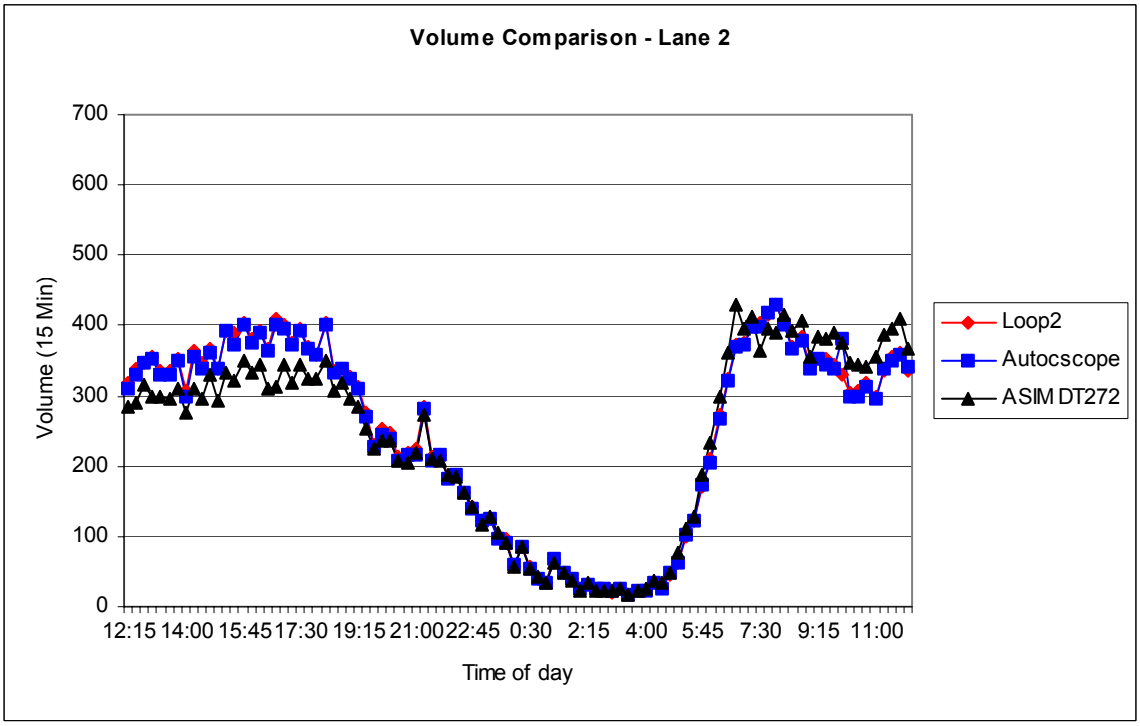
24 Hours Test 1
Freeway – Speed
12:00 PM, October 3, 2001 to 12:00 PM, October 4, 2001

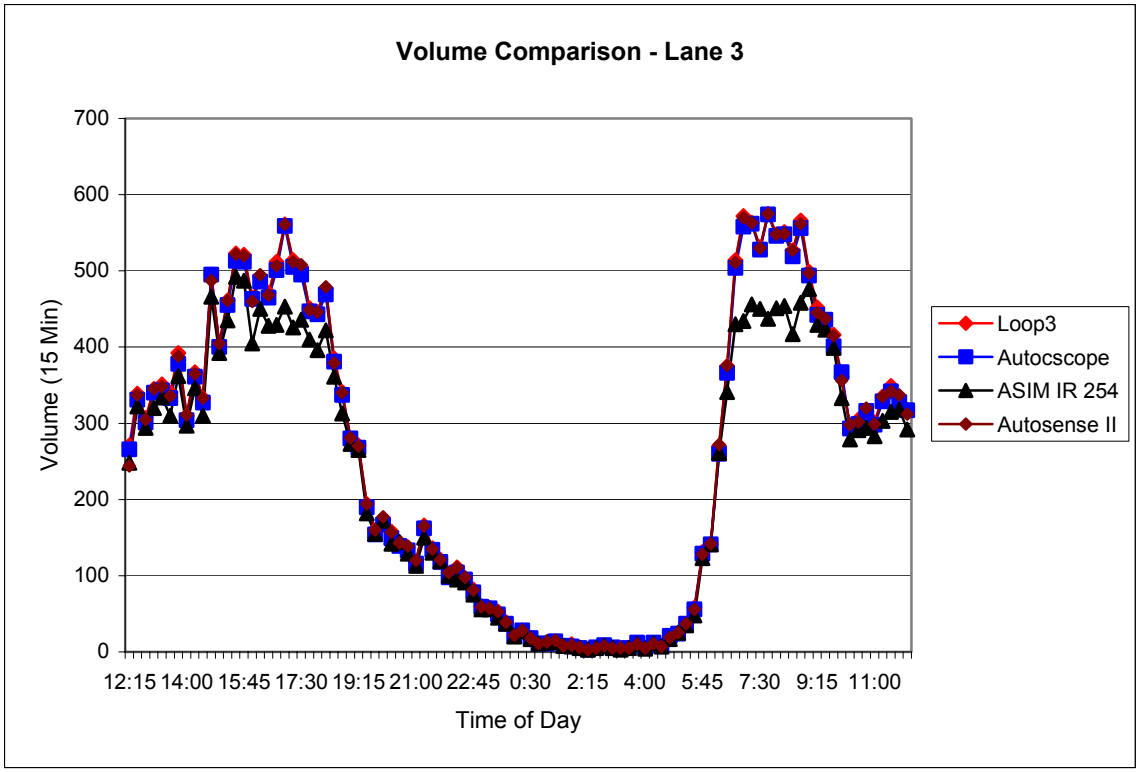
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
ASIM TT 262	Overhead	0	21	1	53	55	4.2%	4.4%	12	0.9974
ASIM IR 254	Overhead	0	21	3	61	54	-10.7%	10.8%	7	0.8368
Autosense II	Overhead	0	22	3	61	64	5.8%	5.8%	7	0.9893
Autoscope	Overhead	0	30	1	53	56	6.8%	7.0%	12	0.9944
				2	58	59	2.7%	3.1%	7	0.9816
				3	61	60	-1.9%	2.5%	6	0.9578

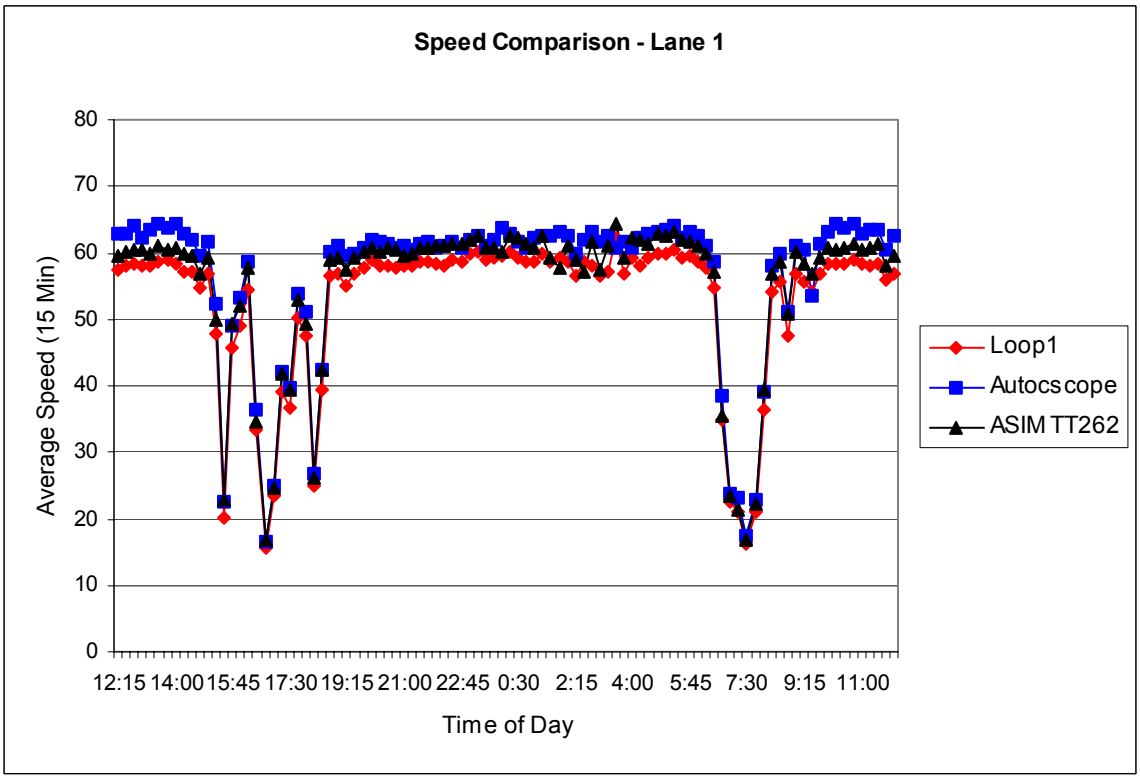
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

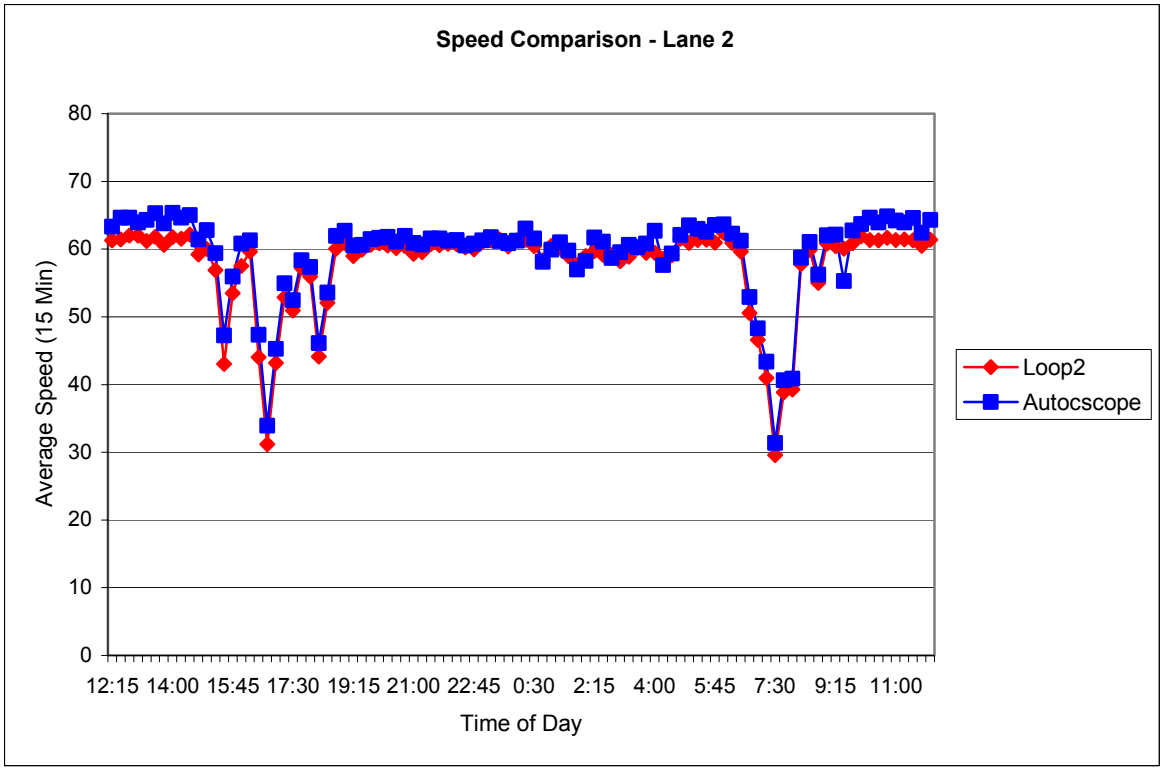
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

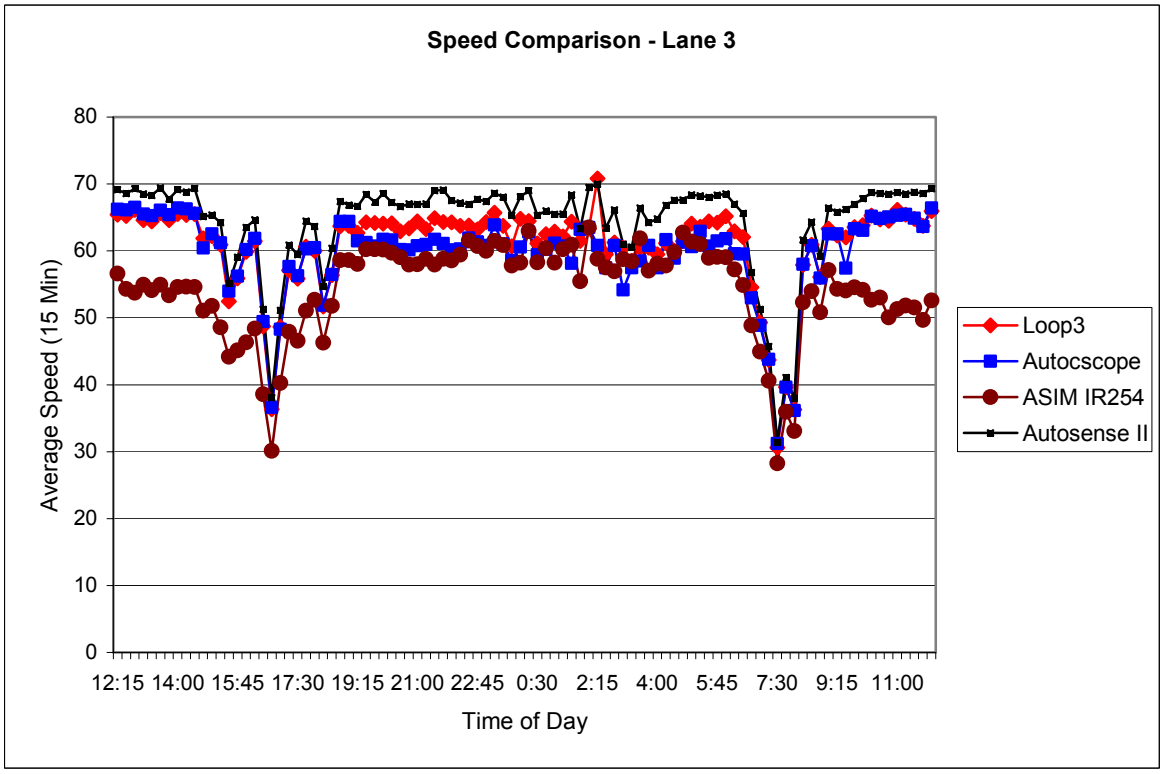

Volume Comparison - Lane 1
700
600
500
400
300
200
100
0
Volume (15 Min)
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autocscope
ASIM TT262


Volume Comparison - Lane 2
700
600
500
400
300
200
100
0
Volume (15 Min)
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of day
Loop2
Autocscope
ASIM DT272


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autocscope
ASIM IR 254
Autosense II


Speed Comparison - Lane 1
Average Speed (15 Min)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autocscope
ASIM TT262


Speed Comparison - Lane 2
Average Speed (15 Min)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autocscope


Speed Comparison - Lane 3
Average Speed (15 Min)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autocscope
ASIM IR254
Autosense II

24-Hour Test 2
Freeway - Volume
00:00 AM, October 16, 2001 to 24:00 PM, October 16, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	25	1	25,060	24,456	-2.4%	2.7%	141	0.9989
				2	24,097	23,985	-0.5%	2.5%	139	0.9982
				3	25,400	24,903	-2.0%	2.6%	197	0.9995
SmarTek	Sidefire	15	20	1	25,060	23,183	-7.5%	7.5%	131	0.9896
				2	24,097	22,629	-6.1%	6.1%	129	0.9983
				3	25,400	22,483	-11.5%	11.6%	175	0.9974
3M	Under Ground			1	25,060	25,627	2.3%	2.3%	144	0.9995
				2	24,097	23,734	-1.5%	1.7%	139	0.9995
				3	25,400	25,016	-1.5%	1.7%	200	0.9998

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

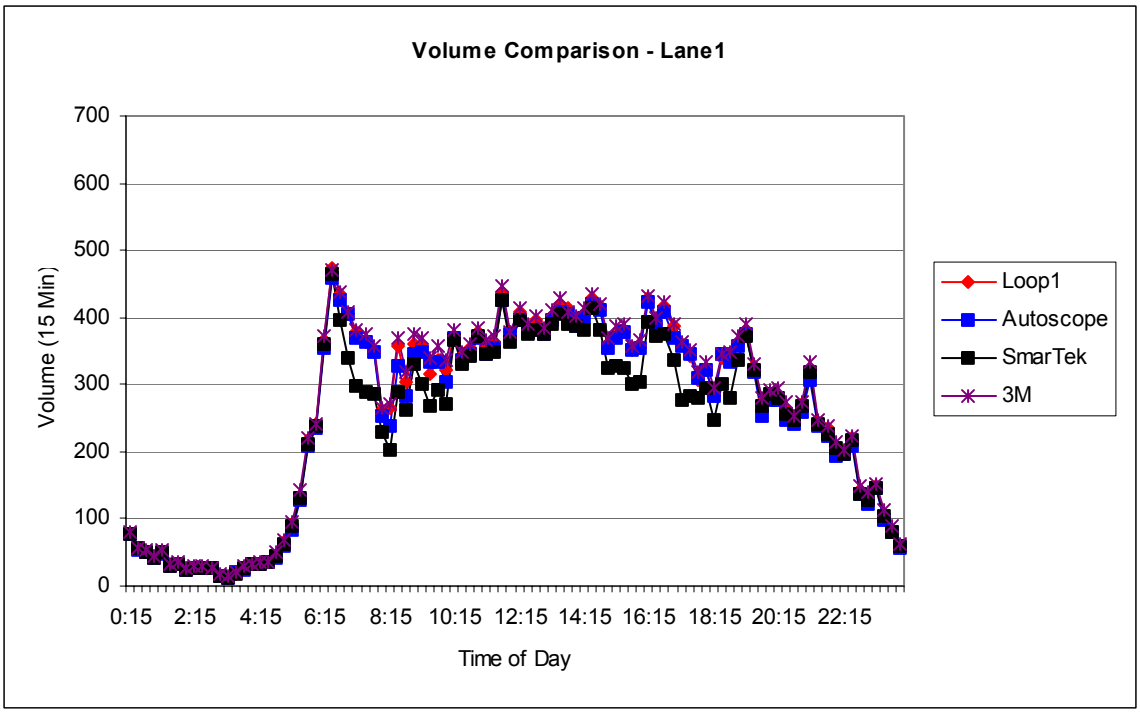
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

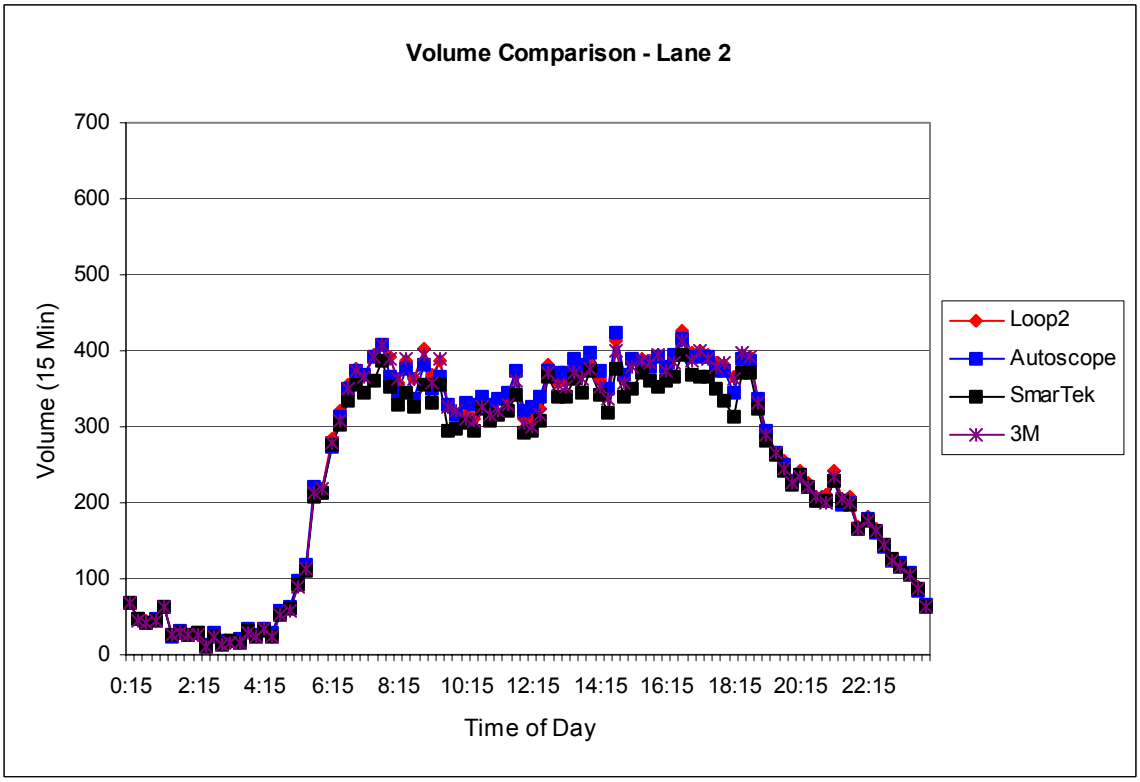
24-Hour Test 2
Freeway - Speed
00:00 AM, October 16, 2001 to 24:00 PM, October 16, 2001

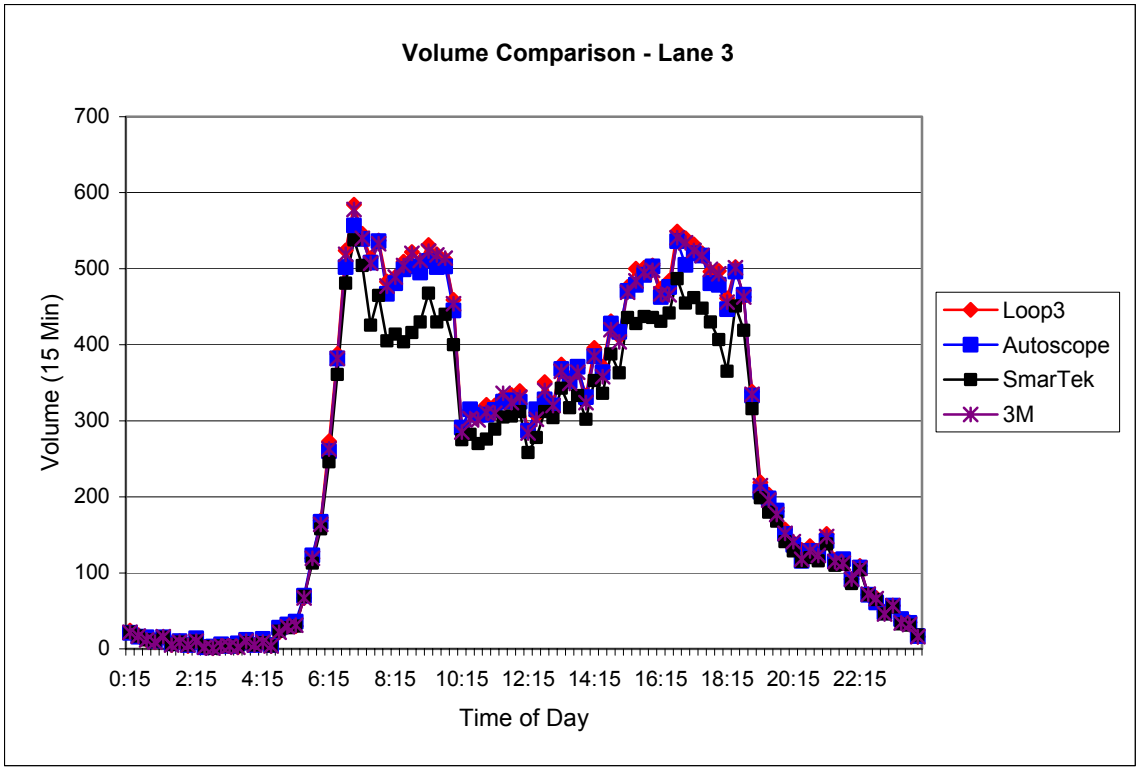
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	25	1	47	46	-1.3%	4.8%	16	0.9954
				2	53	54	2.9%	3.1%	12	0.9930
				3	57	61	7.1%	7.2%	13	0.9878
SmarTek	Sidefire	15	20	1	47	48	3.2%	6.7%	17	0.9914
				2	53	58	10.5%	11.9%	11	0.9769
				3	57	57	-0.1%	5.8%	9	0.9755
3M	Under Ground			1	47	49	5.3%	6.1%	18	0.9988
				2	53	52	-2.3%	2.3%	11	0.9984
				3	57	56	-0.7%	1.7%	11	0.9912

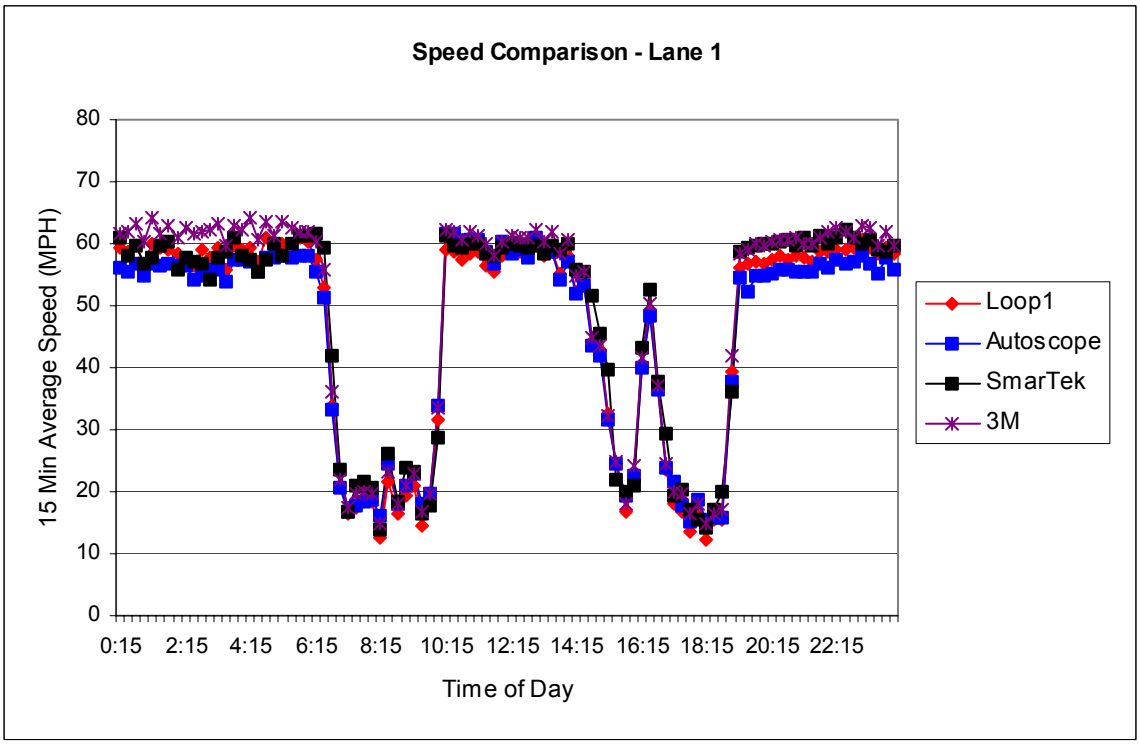
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

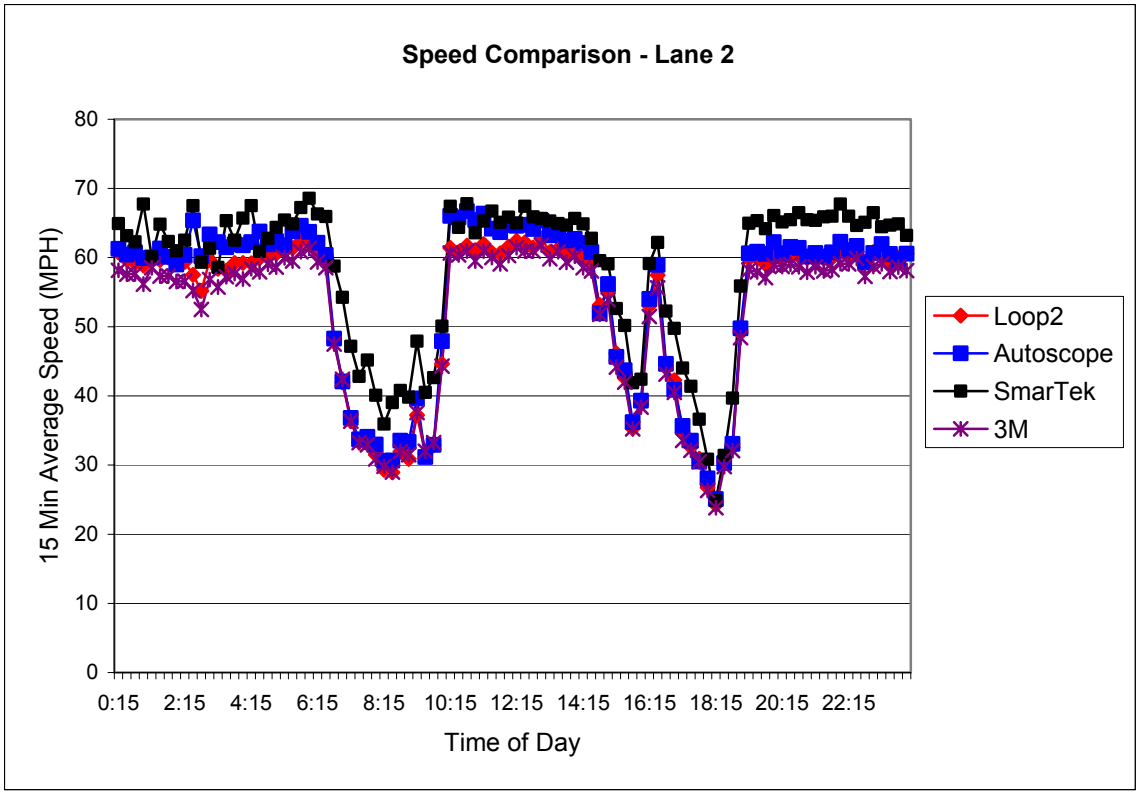
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

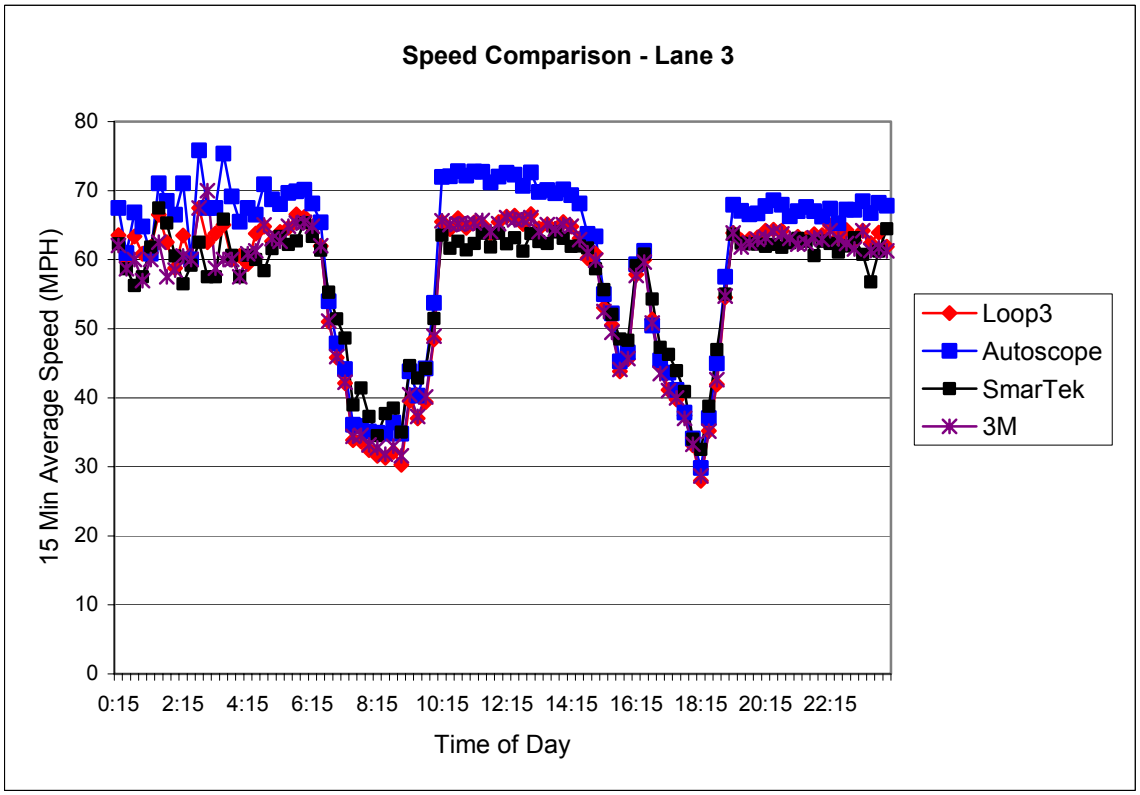

Volume Comparison - Lane1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop1
Autoscope
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 3
Freeway - Volume
00:00 AM, October 18, 2001 to 24:00 PM, October 18, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	30	1	25,059	24,708	-1.4%	1.8%	138	0.9994
				2	24,045	22,895	-4.8%	4.8%	130	0.9976
				3	26,785	25,848	-3.5%	3.8%	198	0.9992
SmarTek	Sidefire	15	25	1	25,059	22,423	-10.5%	10.7%	122	0.9748
				2	24,045	22,119	-8.0%	8.0%	121	0.9974
				3	26,785	24,856	-7.2%	7.3%	186	0.9984
3M	Under Ground			1	25,059	25,744	2.7%	2.7%	141	0.9994
				2	24,045	23,712	-1.4%	1.7%	134	0.9995
				3	26,785	26,367	-1.6%	1.7%	202	0.9998

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

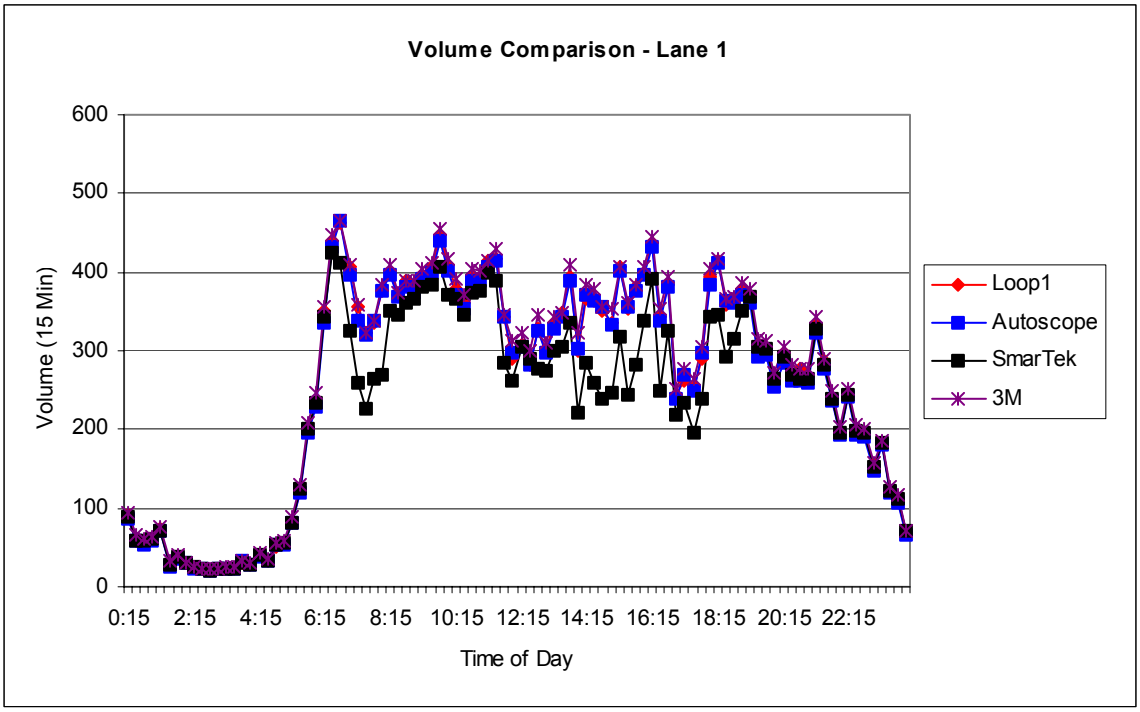
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

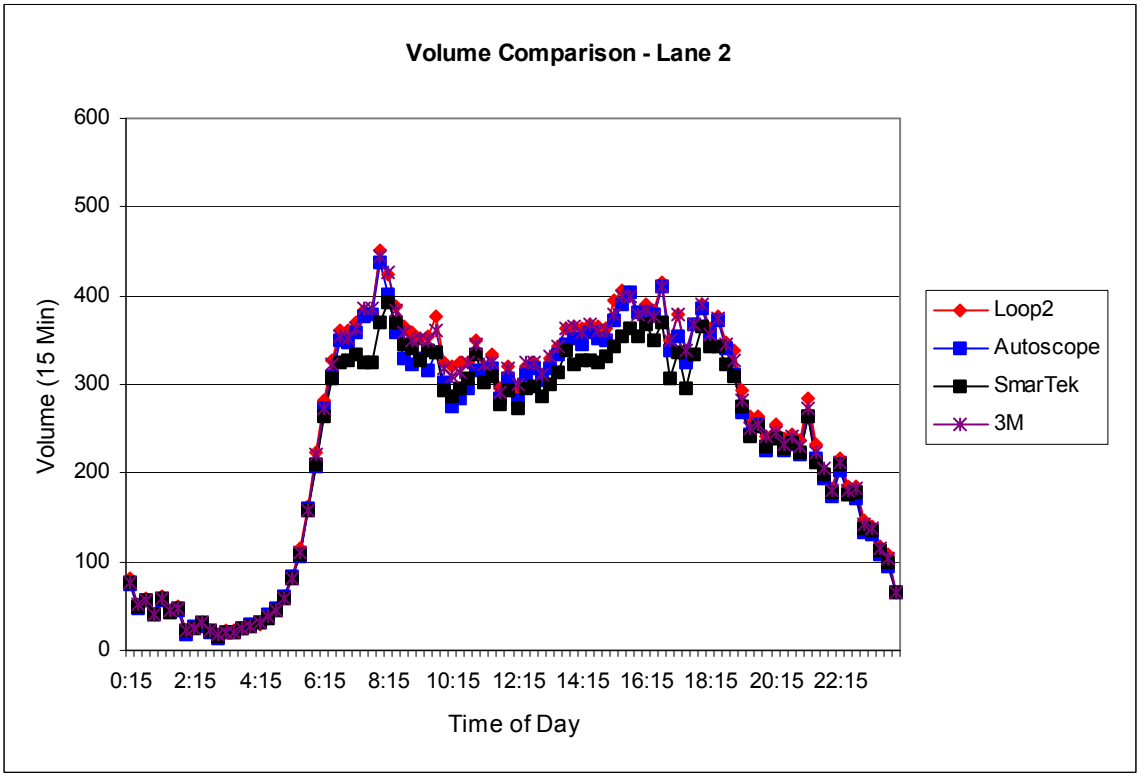
24-Hour Test 3
Freeway - Speed
00:00 AM, October 18, 2001 to 24:00 PM, October 18, 2001

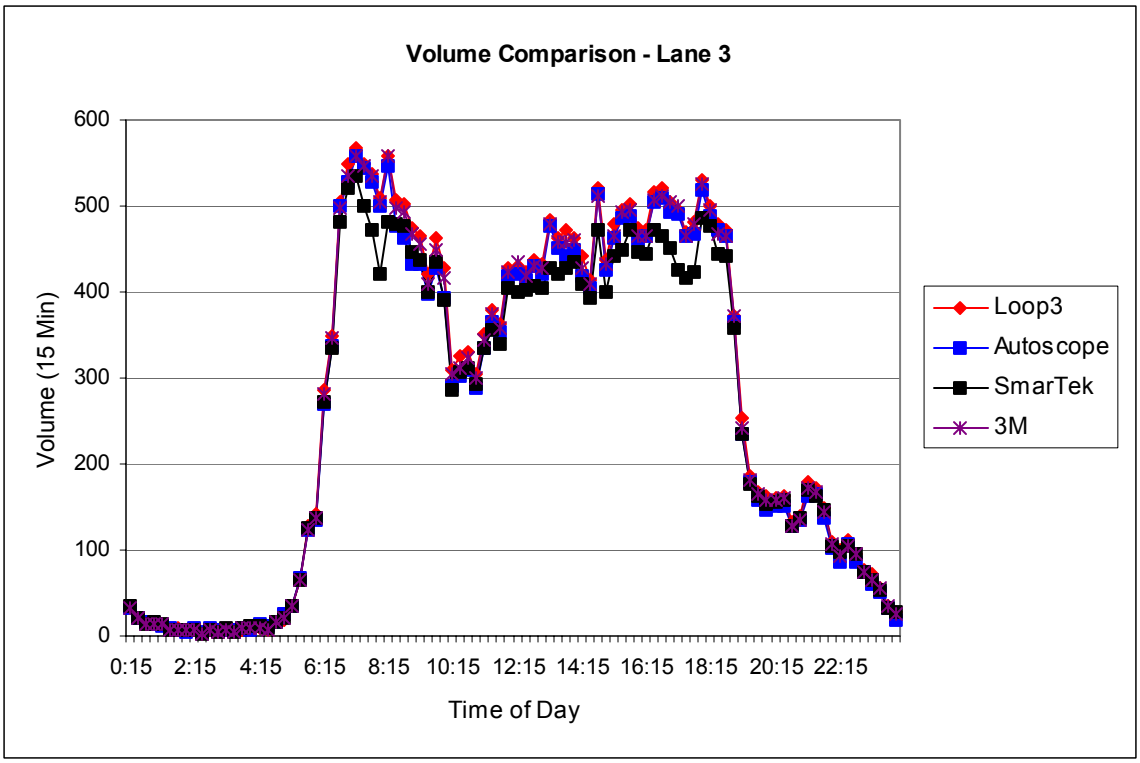
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	30	1	45	44	-2.8%	4.9%	16	0.9986
				2	52	52	-1.0%	1.8%	11	0.9957
				3	56	58	2.3%	2.6%	11	0.9768
SmarTek	Sidefire	15	25	1	45	46	3.4%	8.0%	19	0.9883
				2	52	59	12.8%	14.2%	12	0.9670
				3	56	61	7.9%	8.4%	10	0.9770
3M	Under Ground			1	45	47	4.8%	5.7%	18	0.9985
				2	52	51	-2.3%	2.3%	11	0.9984
				3	56	56	-1.2%	1.5%	10	0.9796

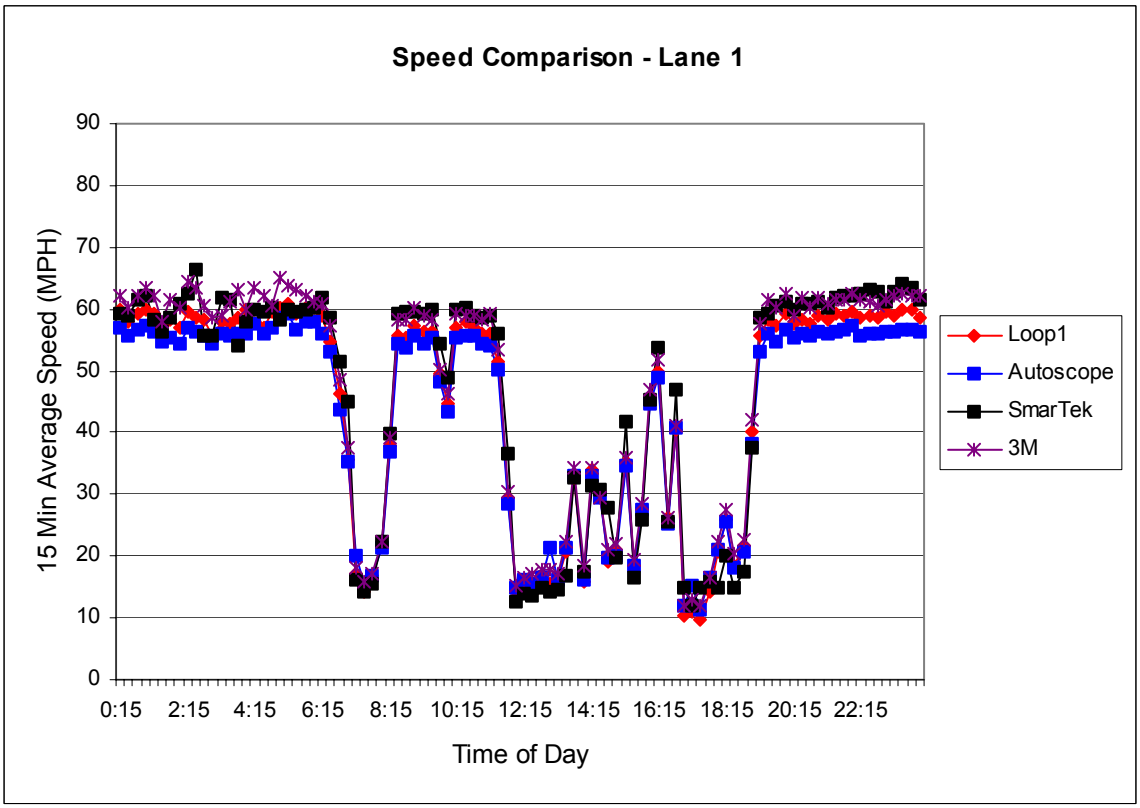
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

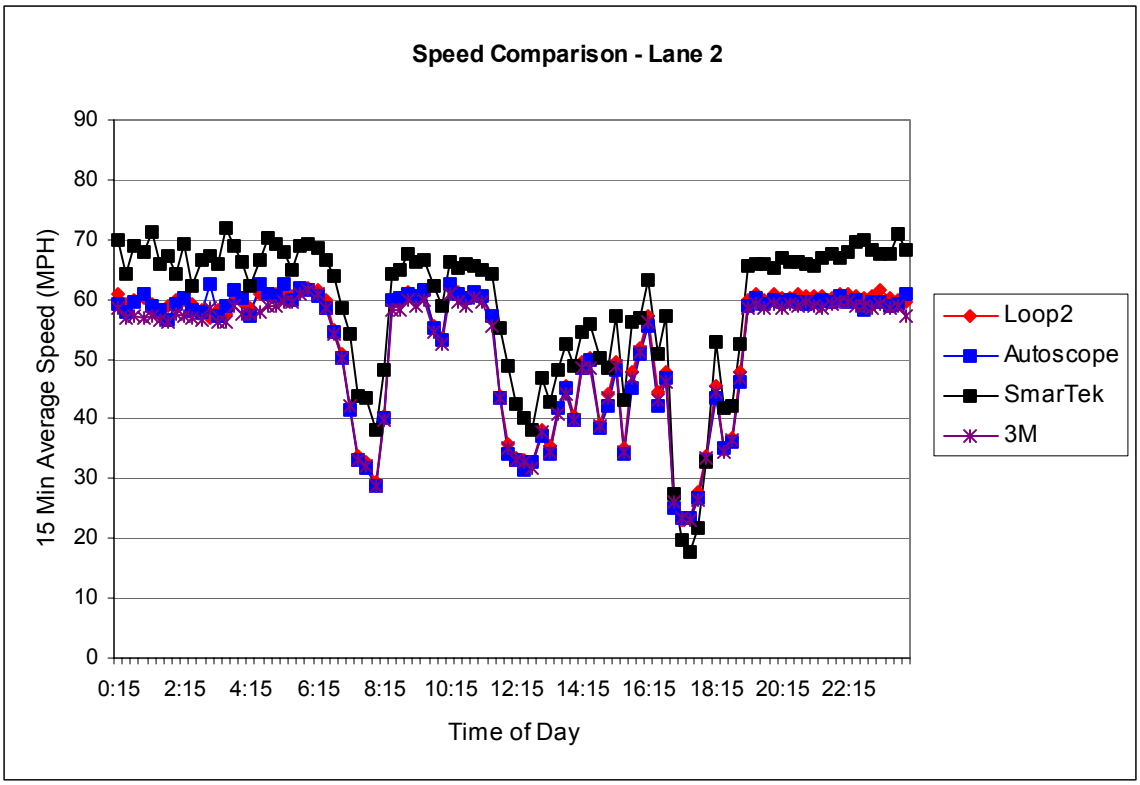
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

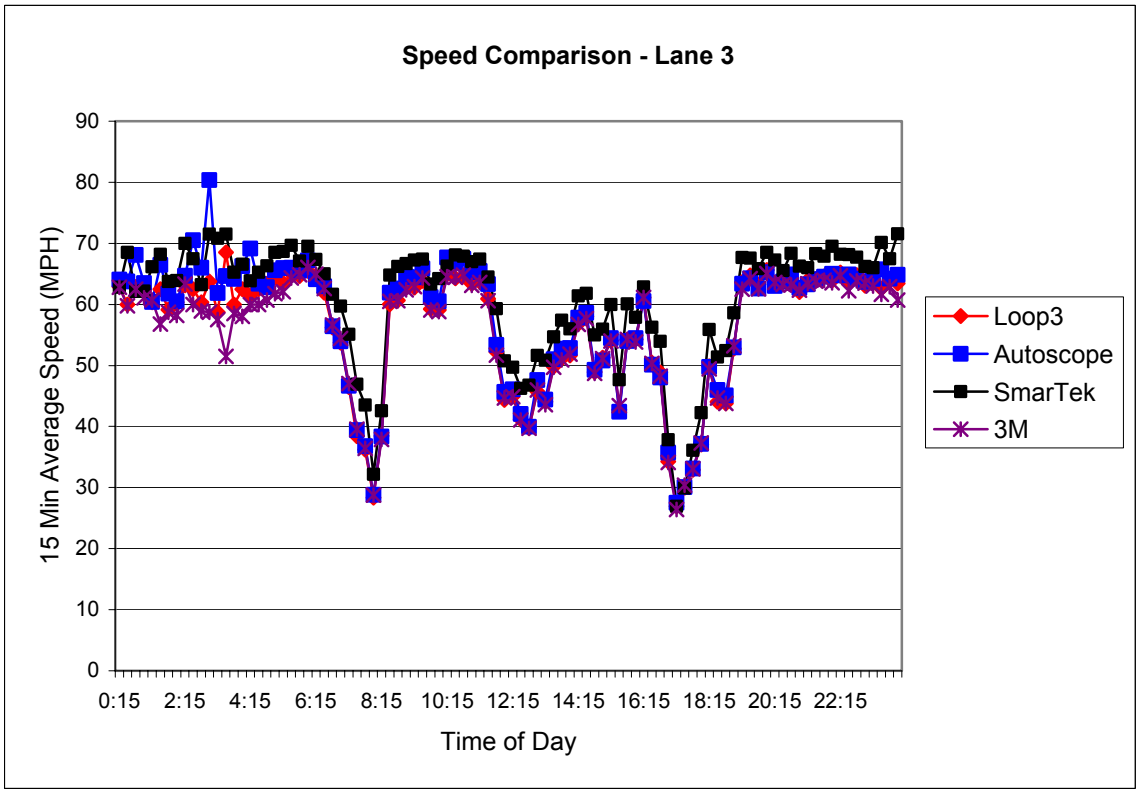

Volume Comparison - Lane 1
600
500
400
300
200
100
0
Volume (15 Min)
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop1
Autoscope
SmarTek
3M


Volume Comparison - Lane 2
600
500
400
300
200
100
0
Volume (15 Min)
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 4
Freeway - Volume
00:00 AM, October 23, 2001 to 24:00 PM, October 23, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	35	1	25,347	24,939	-1.6%	1.8%	145	0.9995
				2	23,734	23,003	-3.1%	3.5%	134	0.9985
				3	25,168	24,510	-2.6%	2.9%	198	0.9995
SmarTek	Sidefire	15	30	1	25,347	21,948	-13.4%	13.4%	124	0.9691
				2	23,734	22,283	-6.1%	6.3%	125	0.9972
				3	25,168	23,392	-7.1%	7.1%	187	0.9993
3M	Under Ground			1	25,347	26,010	2.6%	2.6%	149	0.9995
				2	23,734	23,316	-1.8%	2.0%	135	0.9995
				3	25,168	24,651	-2.1%	2.1%	199	0.9998

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

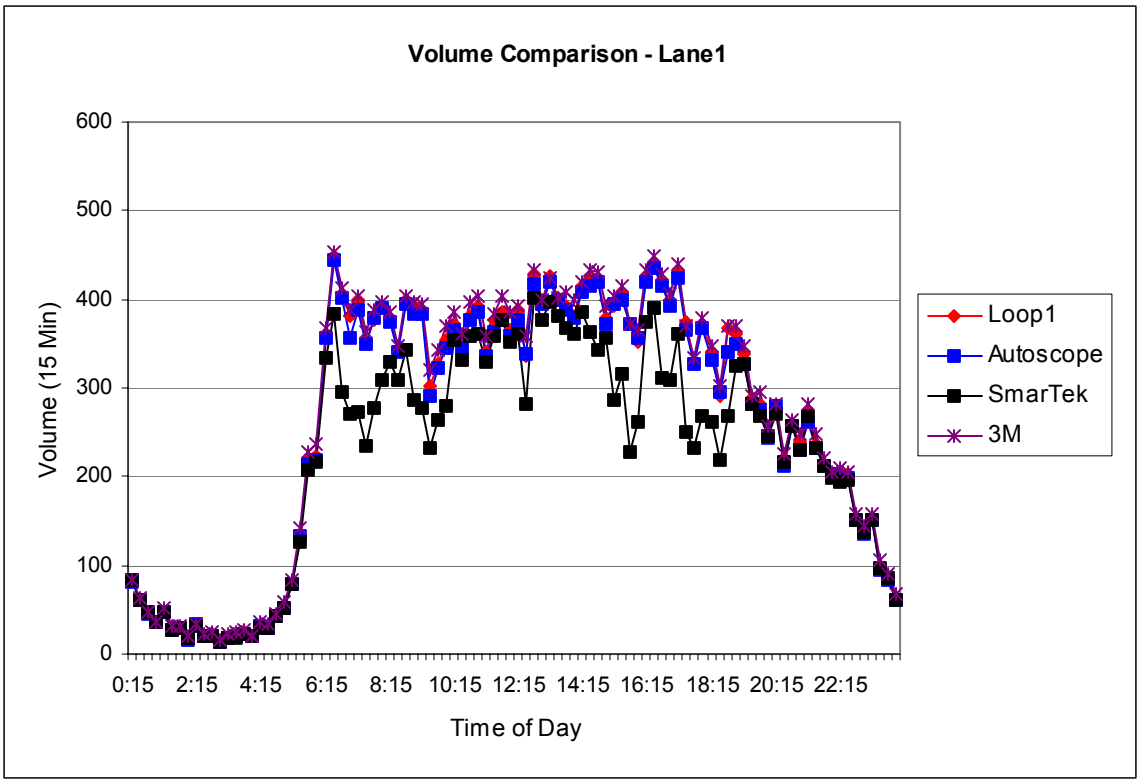
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

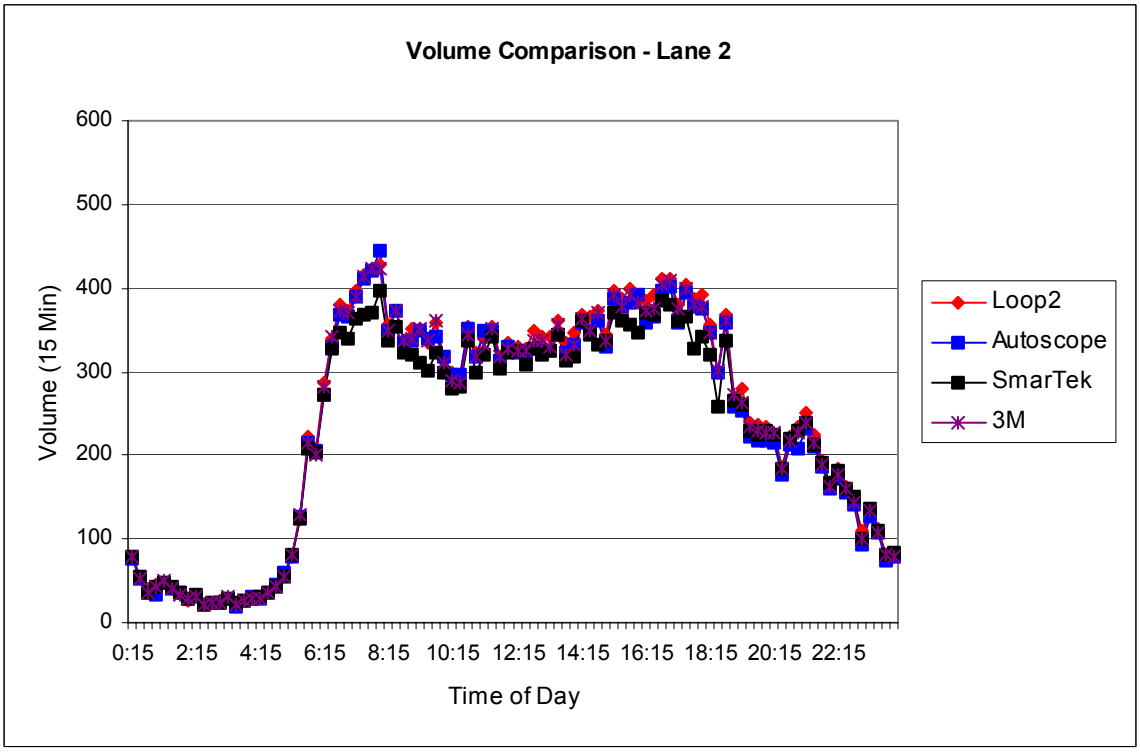
24-Hour Test 4
Freeway - Speed
00:00 AM, October 23, 2001 to 24:00 PM, October 23, 2001

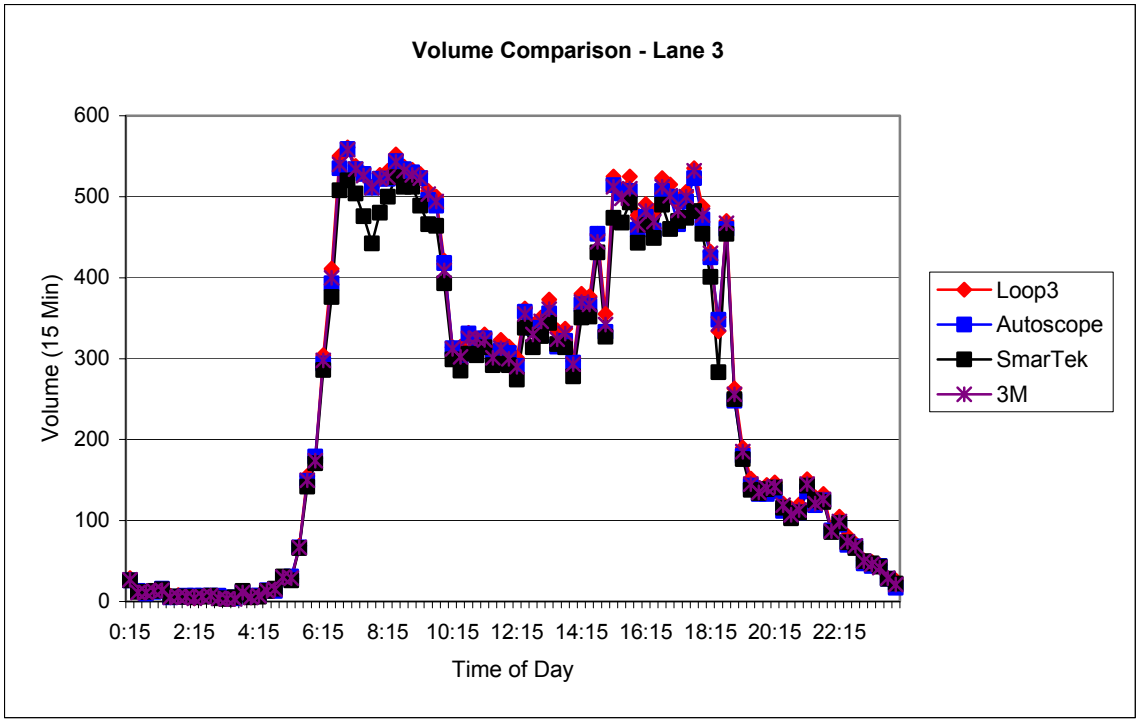
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	35	1	49	50	1.1%	1.9%	14	0.9964
				2	55	55	-0.8%	1.6%	9	0.9937
				3	58	58	-0.3%	2.0%	9	0.9847
SmarTek	Sidefire	15	30	1	49	50	1.6%	5.8%	15	0.9819
				2	55	62	12.9%	13.4%	10	0.9474
				3	58	62	6.1%	6.6%	10	0.9401
3M	Under Ground			1	49	52	4.6%	4.9%	15	0.9978
				2	55	54	-2.5%	2.5%	9	0.9973
				3	58	58	-1.0%	1.7%	9	0.9851

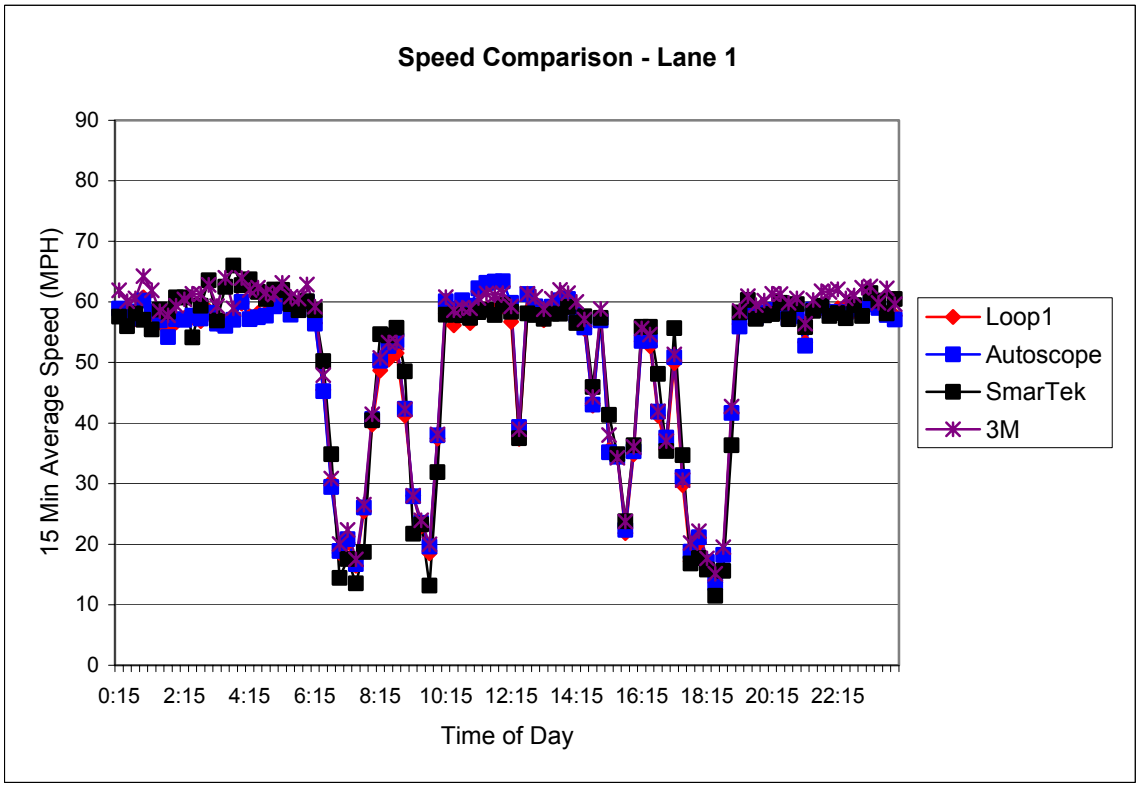
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

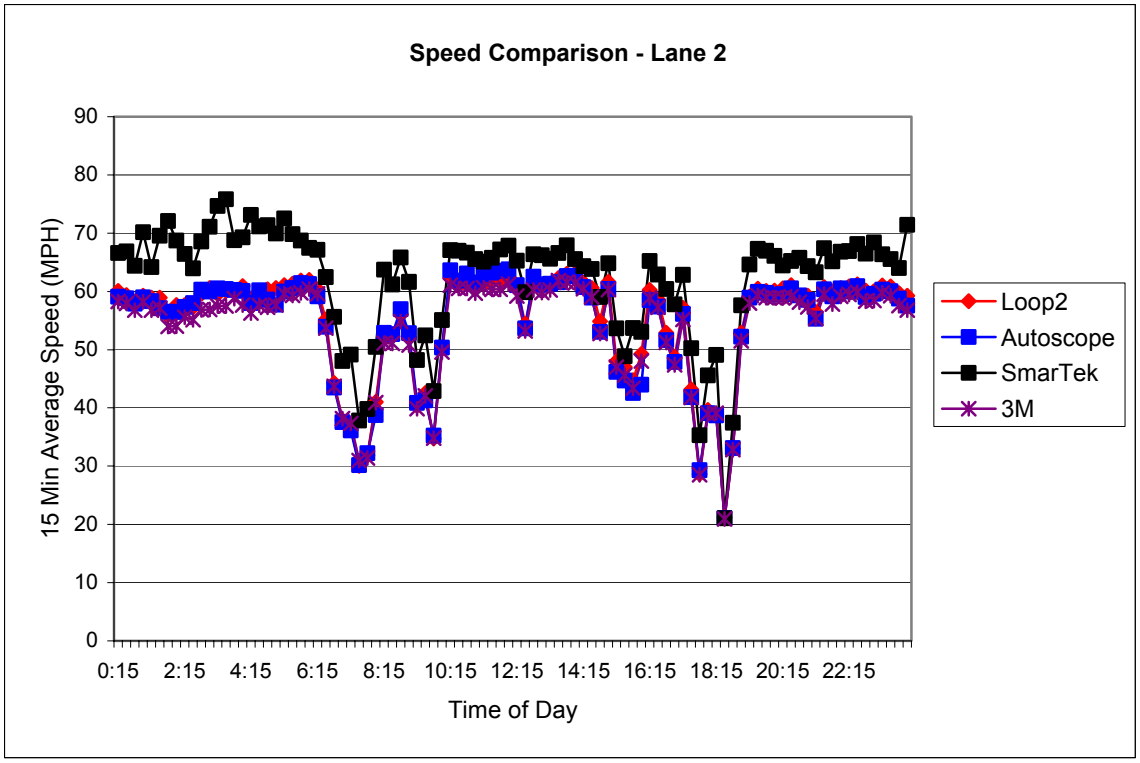
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

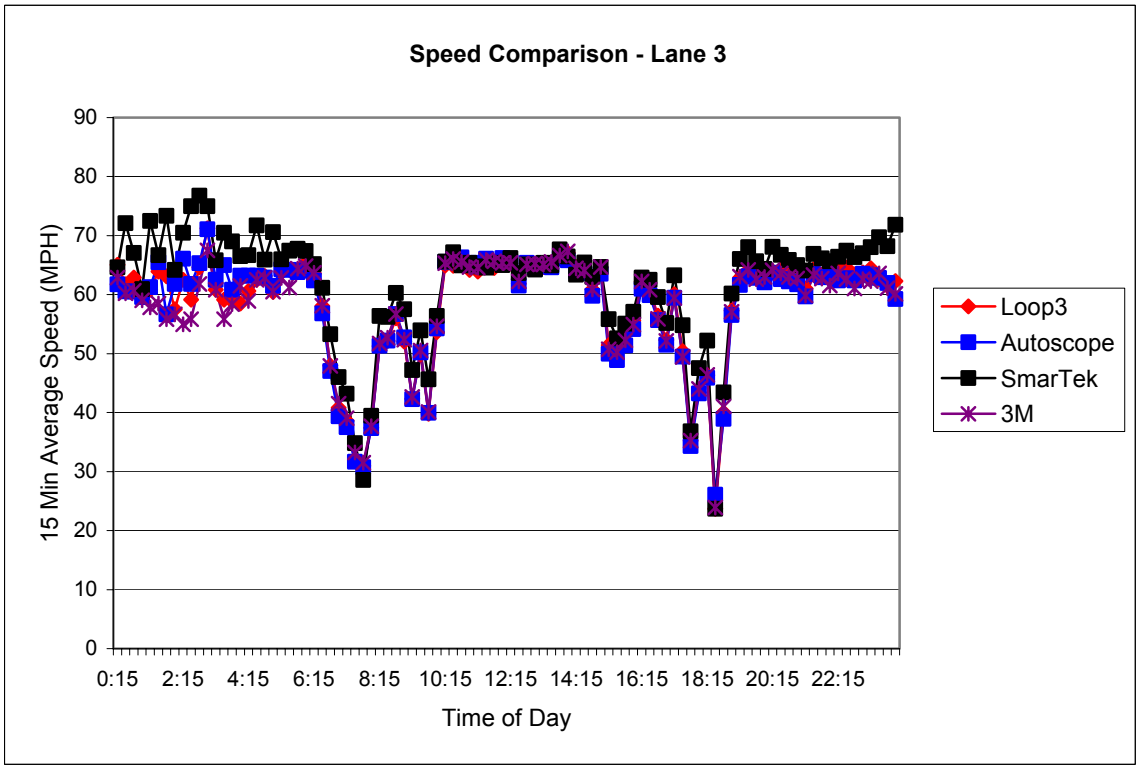

Volume Comparison - Lane1
Volume (15 Min)
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop1
Autoscope
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
600
500
400
300
200
100
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
0:15
2:15
4:15
6:15
8:15
10:15
12:15
14:15
16:15
18:15
20:15
22:15
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 5
Freeway - Volume
12:00 PM, October 25, 2001 to 12:00 PM, October 26, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	40	1	26,771	26,618	-0.6%	0.9%	153	0.9997
				2	24,094	23,754	-1.4%	1.7%	135	0.9995
				3	25,615	25,774	0.6%	1.3%	200	0.9998
SmarTek	Sidefire	15	35	1	26,771	23,612	-11.8%	12.0%	133	0.9584
				2	24,094	22,515	-6.6%	6.7%	123	0.9959
				3	25,615	23,767	-7.2%	7.3%	184	0.9984
3M	Under Ground			1	26,771	27,337	2.1%	2.1%	156	0.9997
				2	24,094	23,541	-2.3%	2.4%	133	0.9997
				3	25,615	25,071	-2.1%	2.1%	197	0.9999

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

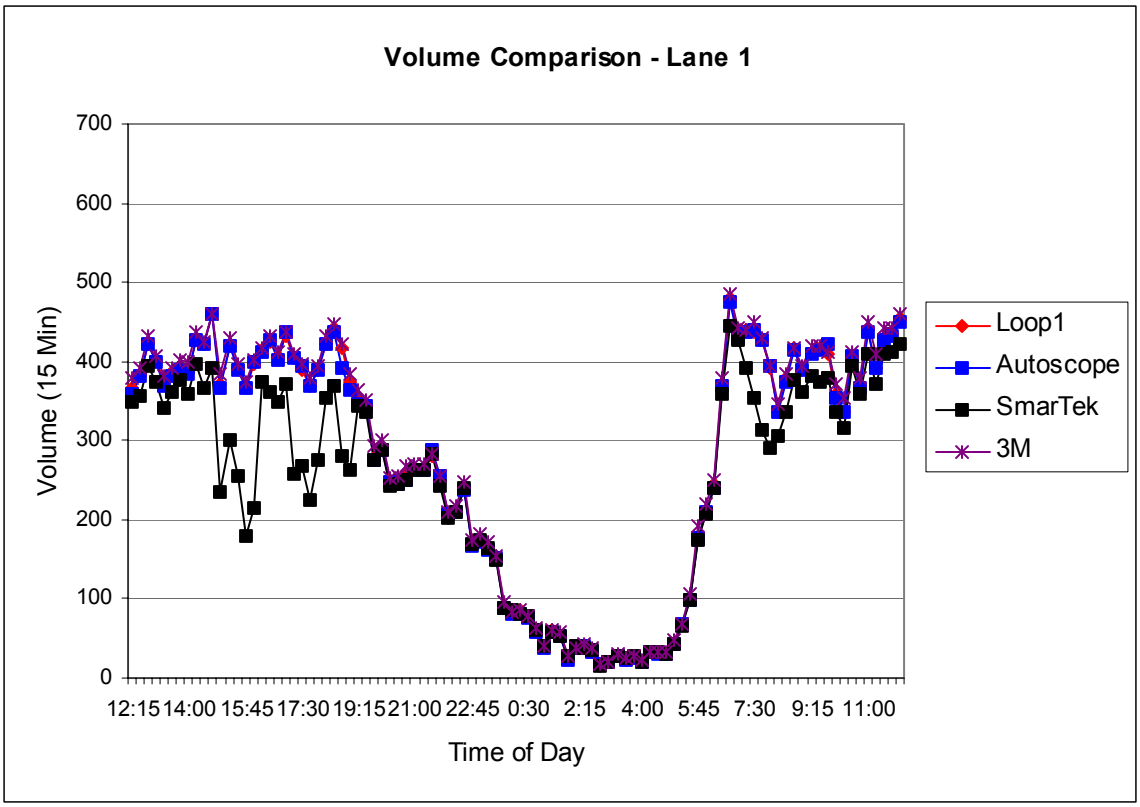
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

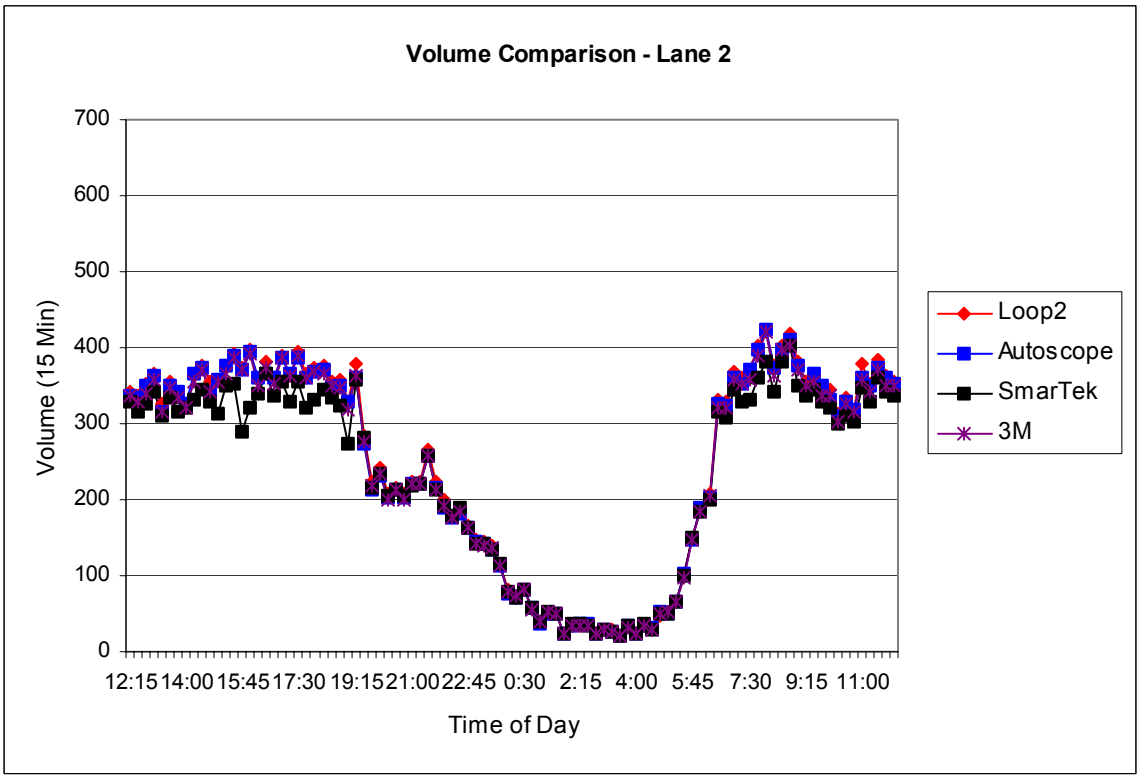
24-Hour Test 5
Freeway - Speed
12:00 PM, October 25, 2001 to 12:00 PM, October 26, 2001

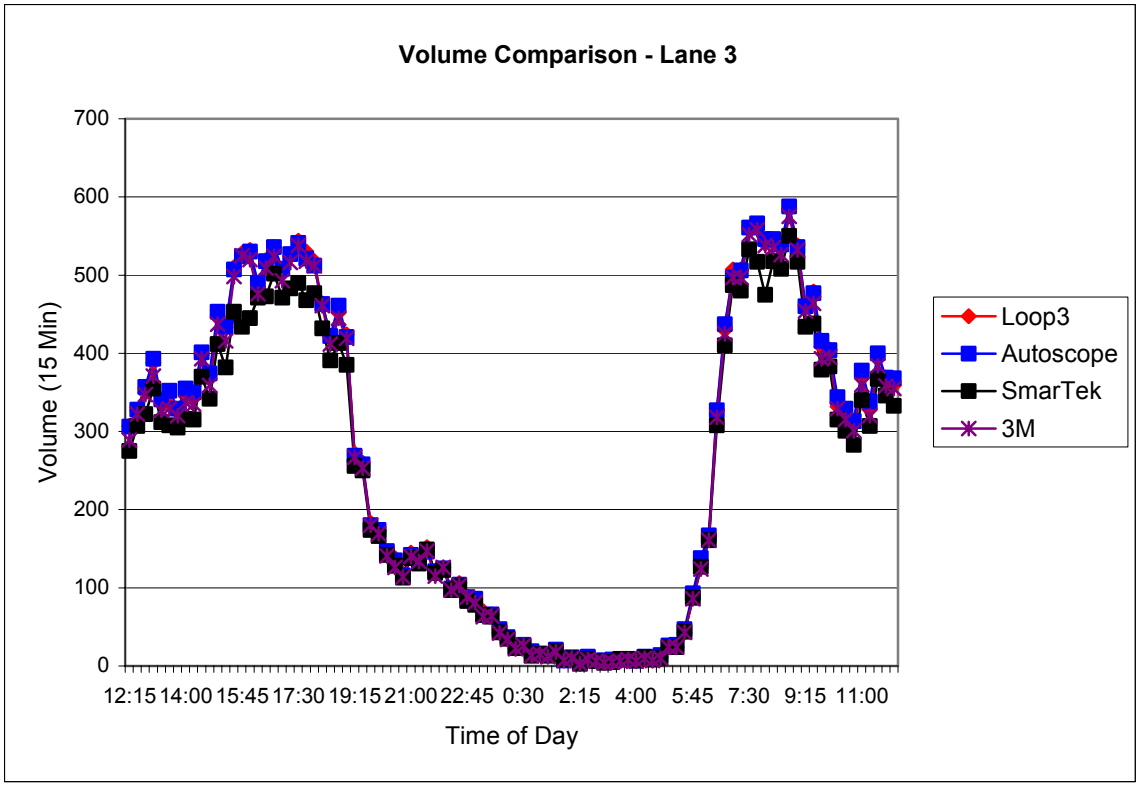
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	40	1	54	54	-0.1%	1.3%	10	0.9960
				2	58	58	-0.5%	1.4%	6	0.9884
				3	61	60	-2.5%	3.4%	6	0.9546
SmarTek	Sidefire	15	35	1	54	54	0.1%	5.4%	8	0.9320
				2	58	55	-5.6%	6.3%	4	0.9012
				3	61	59	-4.6%	4.8%	5	0.9455
3M	Under Ground			1	54	57	4.4%	4.4%	10	0.9955
				2	58	57	-2.2%	2.1%	6	0.9948
				3	61	61	-0.2%	1.3%	6	0.9784

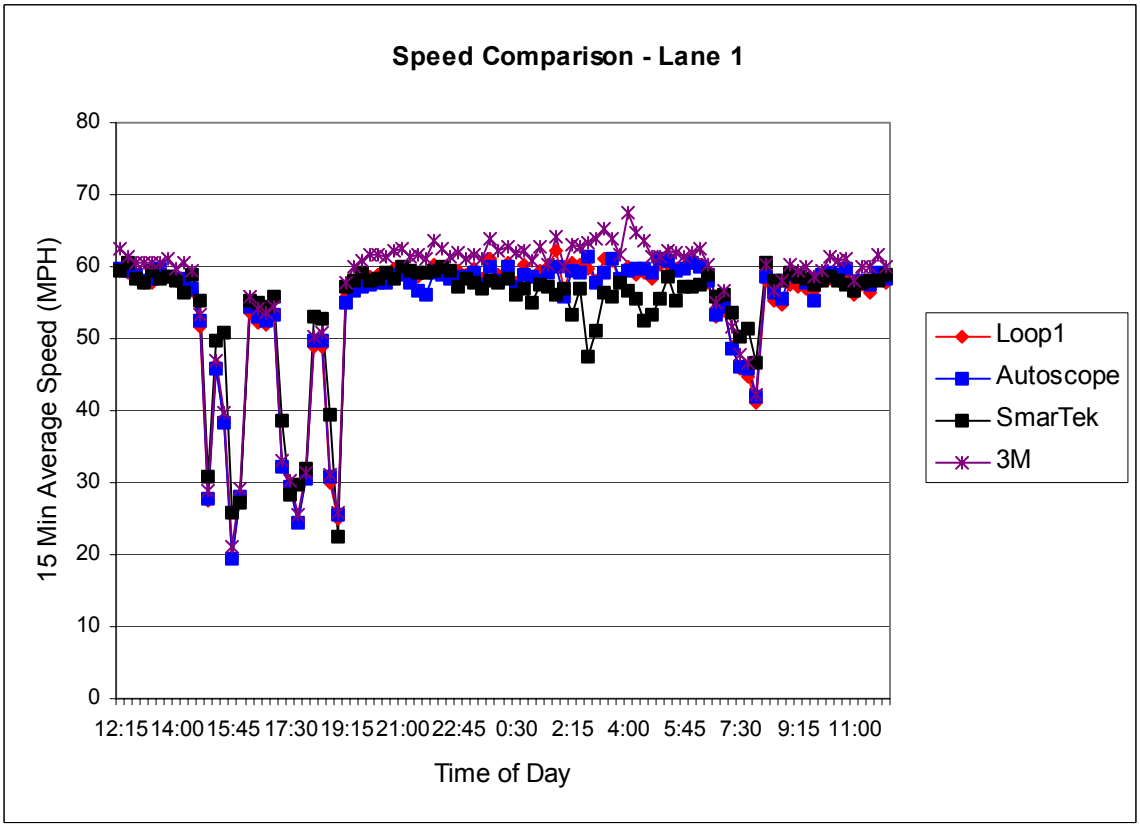
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

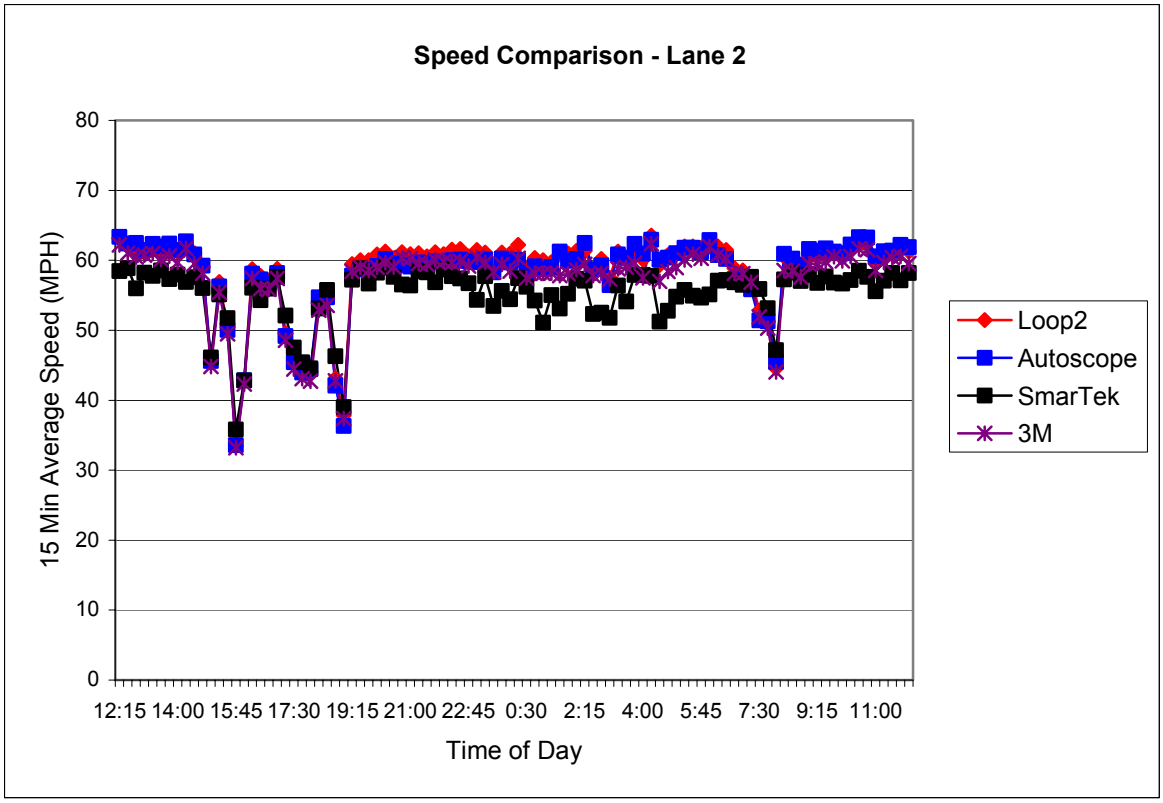
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

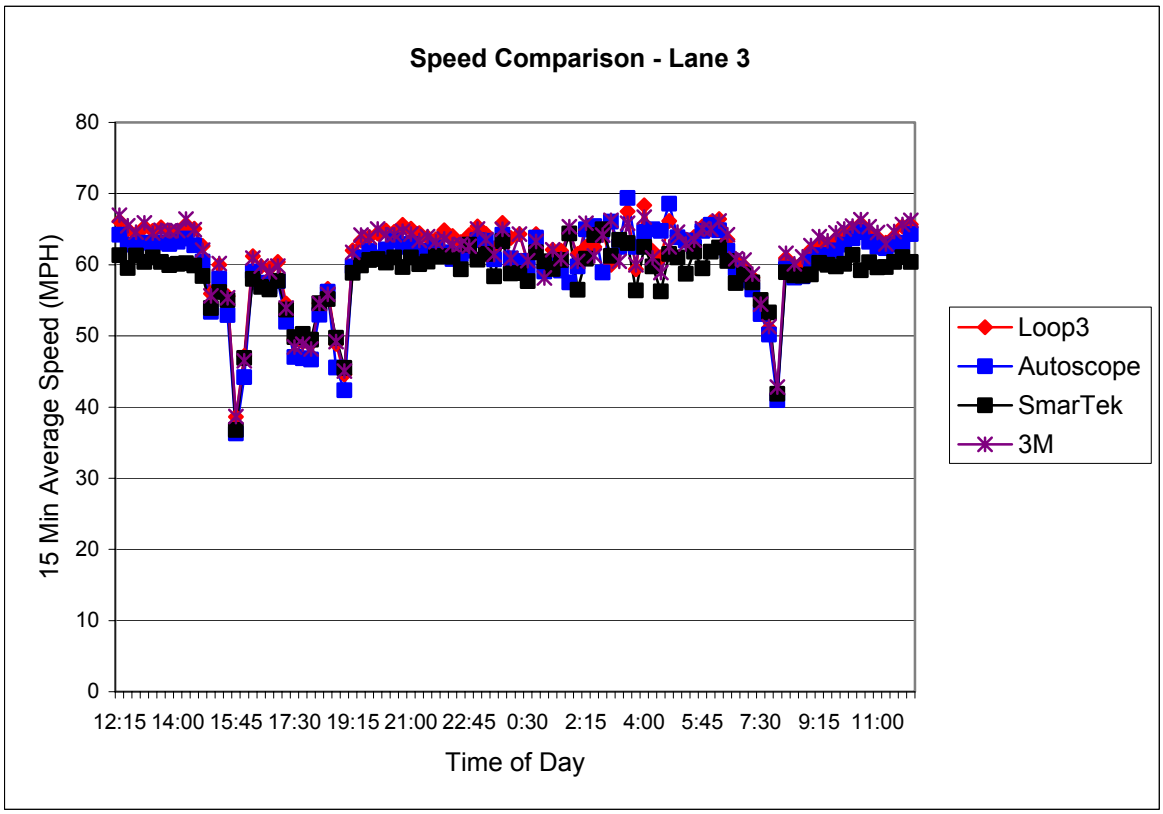

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 6
Freeway - Volume
12:00 PM, November 1, 2001 to 12:00 PM, November 2, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	45	1	25,712	25,164	-2.1%	2.3%	140	0.9980
				2	24,344	23,880	-1.9%	2.7%	137	0.9985
				3	25,803	25,432	-1.4%	2.0%	198	0.9996
SmarTek	Sidefire	15	40	1	25,712	21,319	-17.1%	17.1%	123	0.8992
				2	24,344	21,623	-11.2%	11.2%	116	0.9839
				3	25,803	23,871	-7.5%	7.5%	182	0.9955
3M	Under Ground			1	25,712	25,765	0.2%	2.3%	145	0.9997
				2	24,344	23,906	-1.8%	1.9%	135	0.9995
				3	25,803	25,234	-2.2%	2.3%	197	0.9998
ASIM IR 254	Sidefire	15	15	1	25,712	25,765	0.2%	8.6%	134	0.9760

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

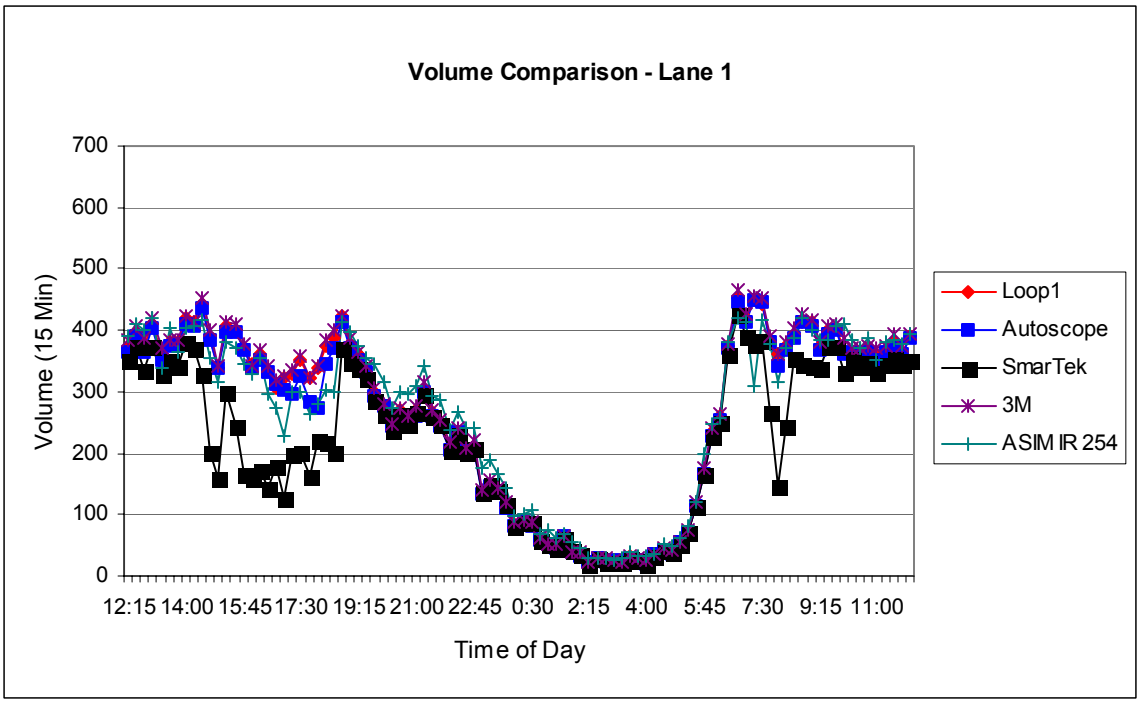
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

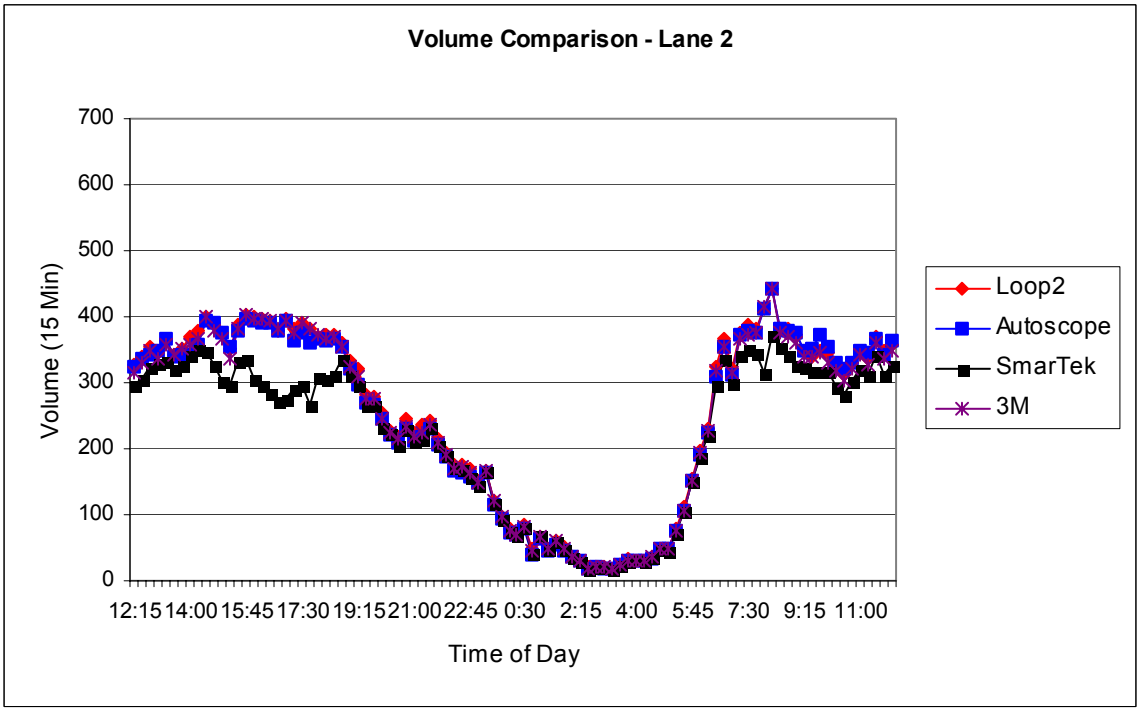
24-Hour Test 6
Freeway - Speed
12:00 PM, November 1, 2001 to 12:00 PM, November 2, 2001

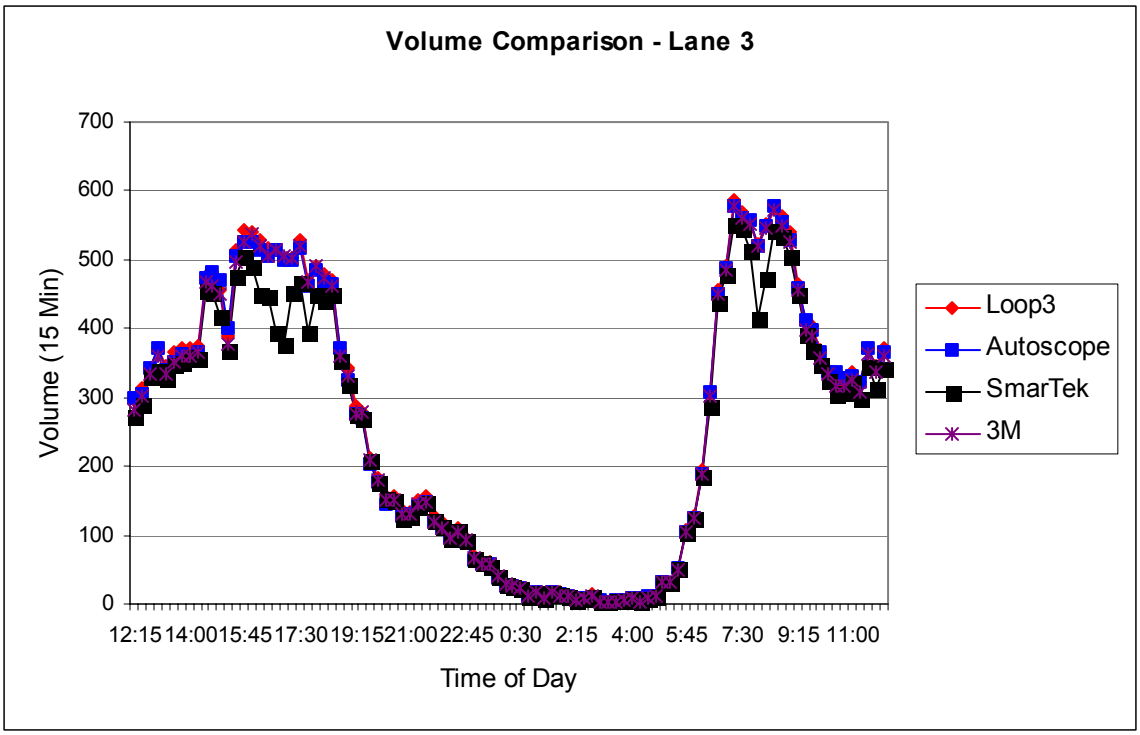
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	15	45	1	51	48	-5.9%	5.7%	13	0.9962
				2	56	52	-6.1%	6.0%	9	0.9943
				3	59	55	-7.3%	7.4%	9	0.9887
SmarTek	Sidefire	15	40	1	51	52	2.9%	7.8%	15	0.9602
				2	56	54	-2.7%	6.1%	8	0.9350
				3	59	60	1.2%	4.4%	8	0.9588
3M	Under Ground			1	51	53	5.0%	5.4%	15	0.9976
				2	56	55	-2.2%	2.2%	9	0.9972
				3	59	59	-0.5%	1.4%	9	0.9918
ASIM IR 254	Sidefire	15	15	1	51	56	10.6%	11.2%	16	0.9957

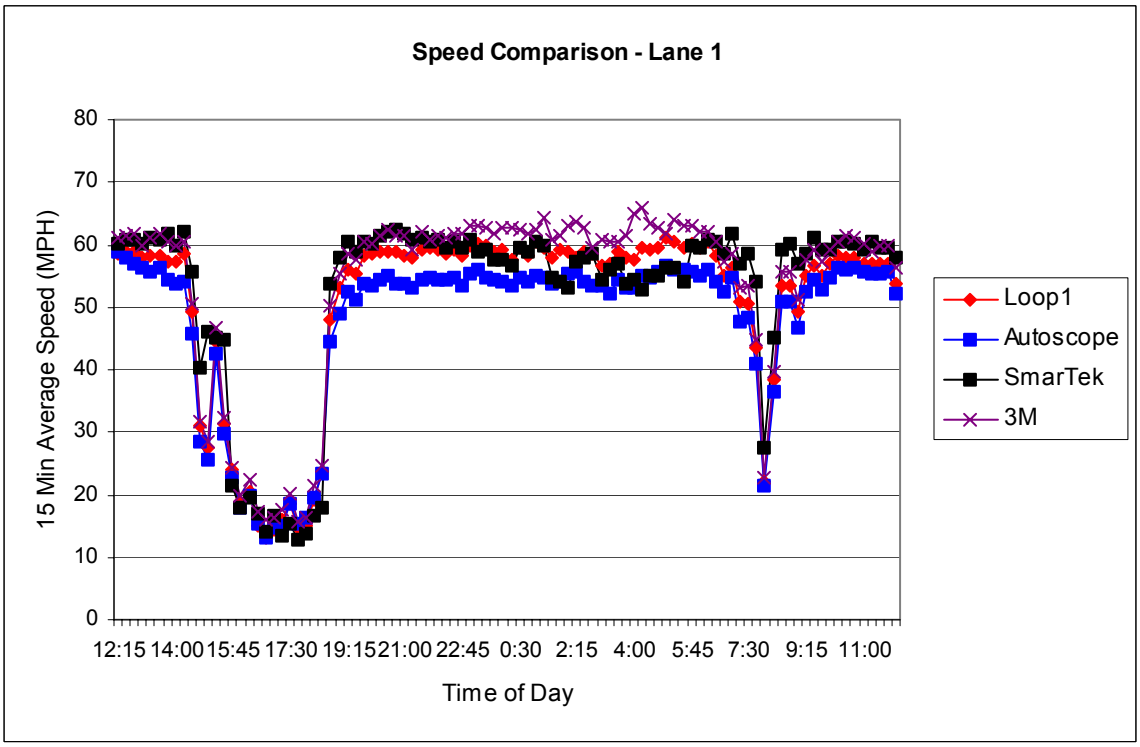
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

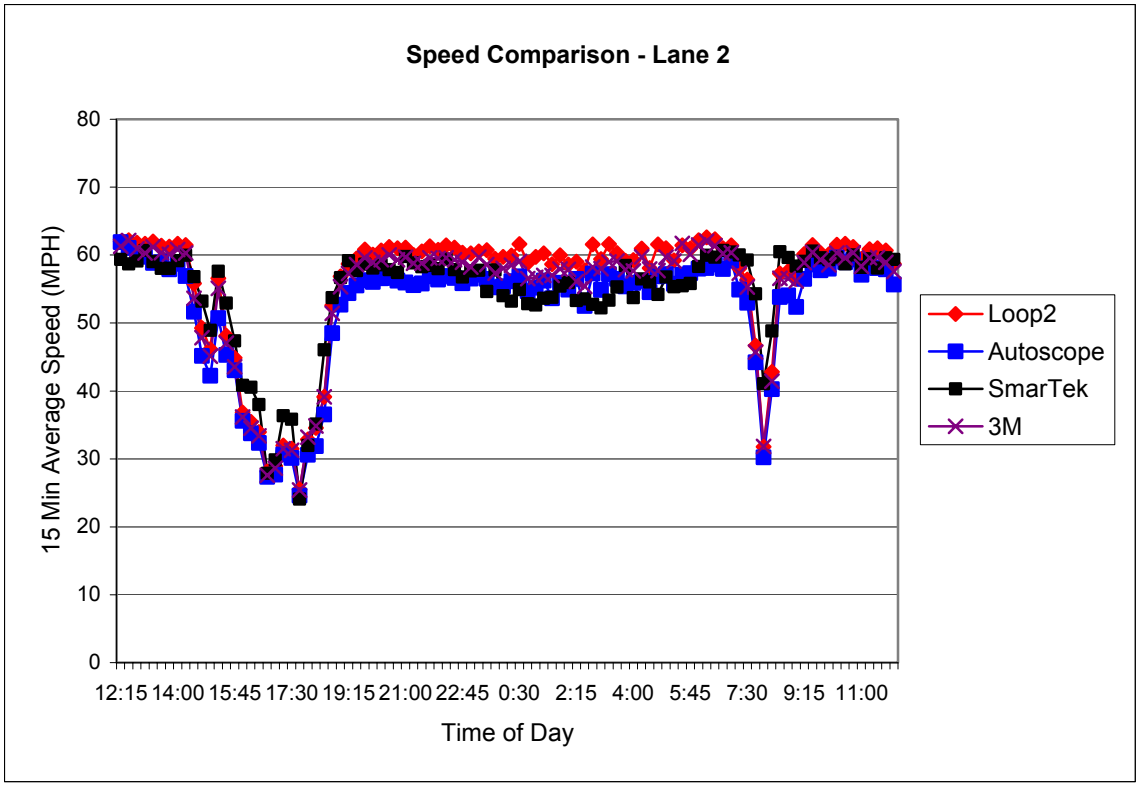
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

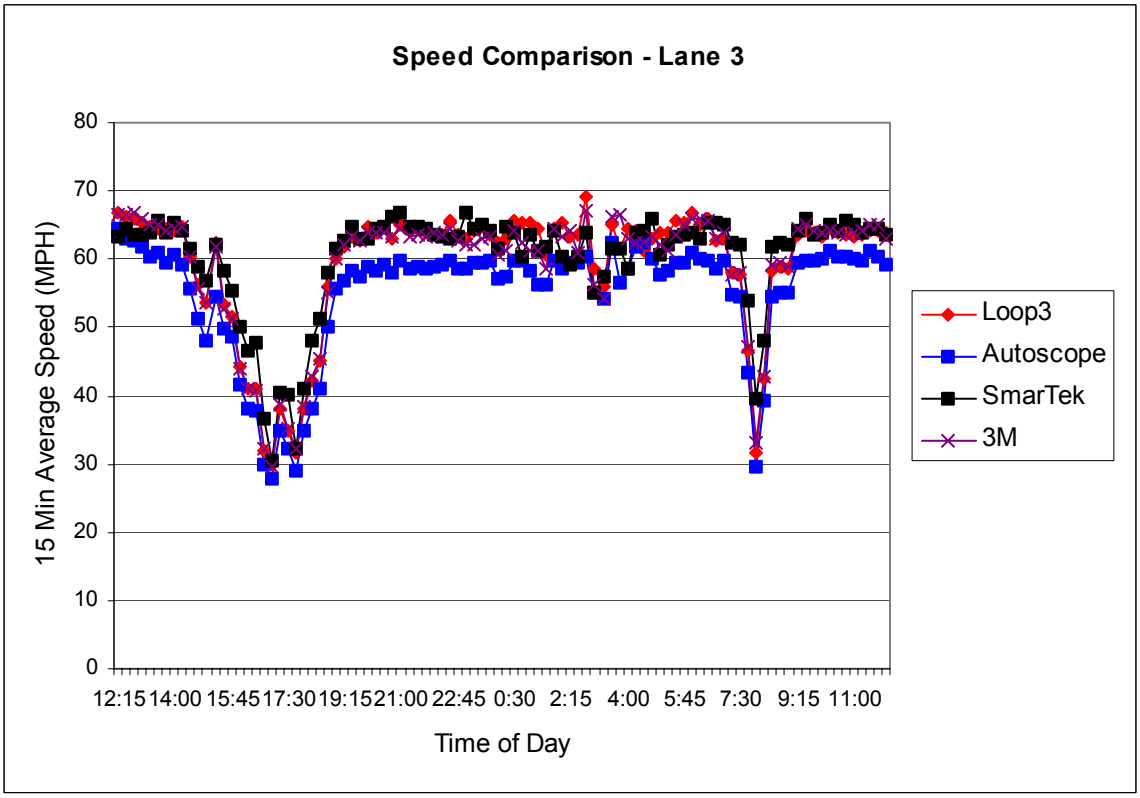

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
SmarTek
3M
ASIM IR 254


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 7
Freeway - Volume
12:00 PM, November 8, 2001 to 12:00 PM, November 9, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	25	1	25,676	25,188	-1.9%	2.6%	150	0.9988
				2	24,362	25,791	5.9%	6.0%	148	0.9971
				3	25,821	29,738	15.2%	15.2%	217	0.9943
SmarTek	Sidefire	25	20	1	25,676	24,675	-3.9%	3.9%	144	0.9985
				2	24,362	22,000	-9.7%	9.7%	121	0.9975
				3	25,821	23,026	-10.8%	11.0%	173	0.9970
3M	Under Ground			1	25,676	26,360	2.7%	2.7%	153	0.9996
				2	24,362	23,981	-1.6%	1.7%	137	0.9996
				3	25,821	25,371	-1.7%	1.9%	198	0.9998

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

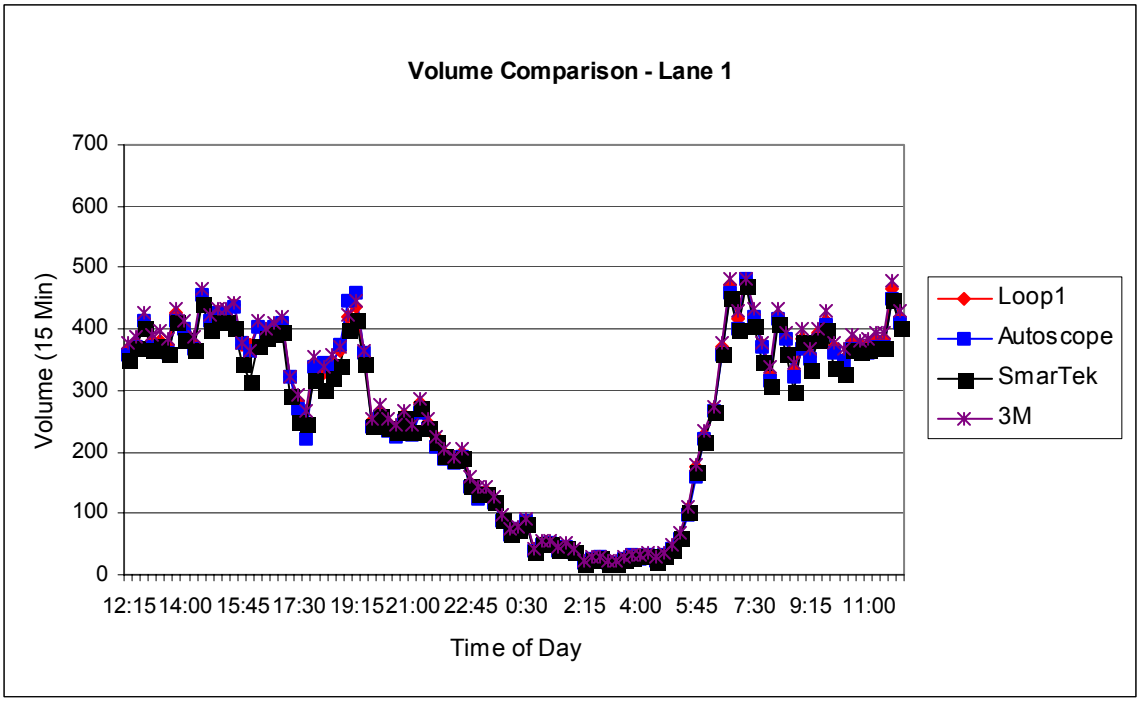
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

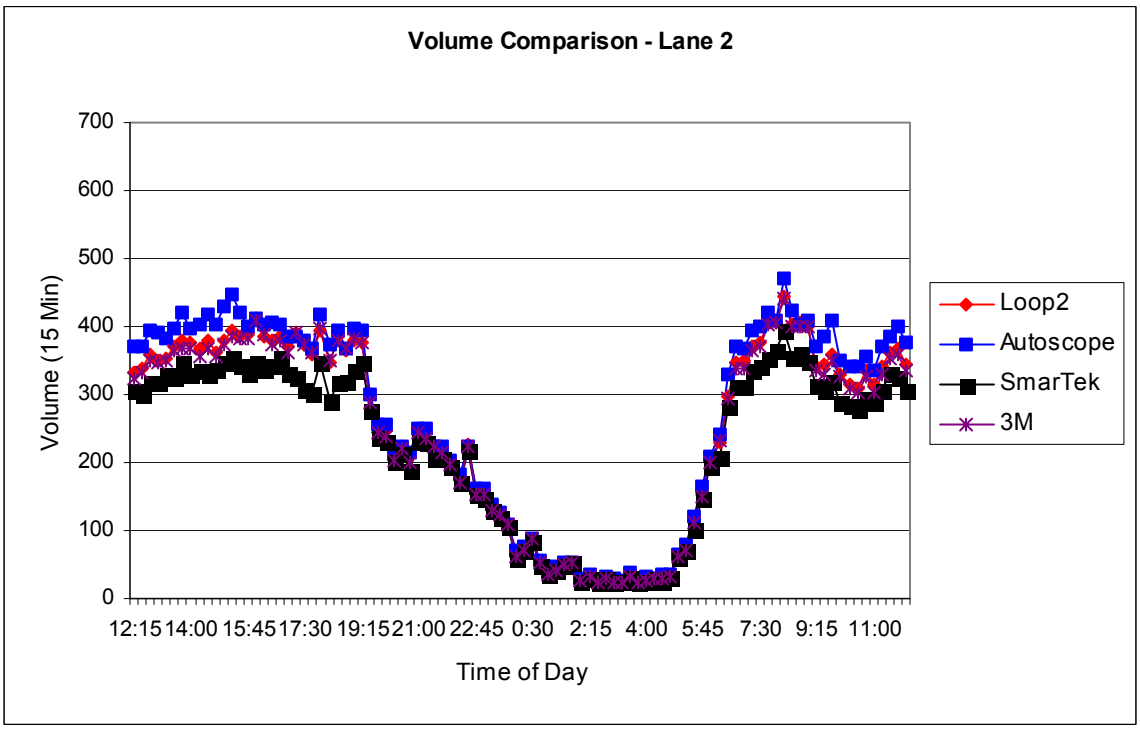
24-Hour Test 7
Freeway - Speed
12:00 PM, November 8, 2001 to 12:00 PM, November 9, 2001

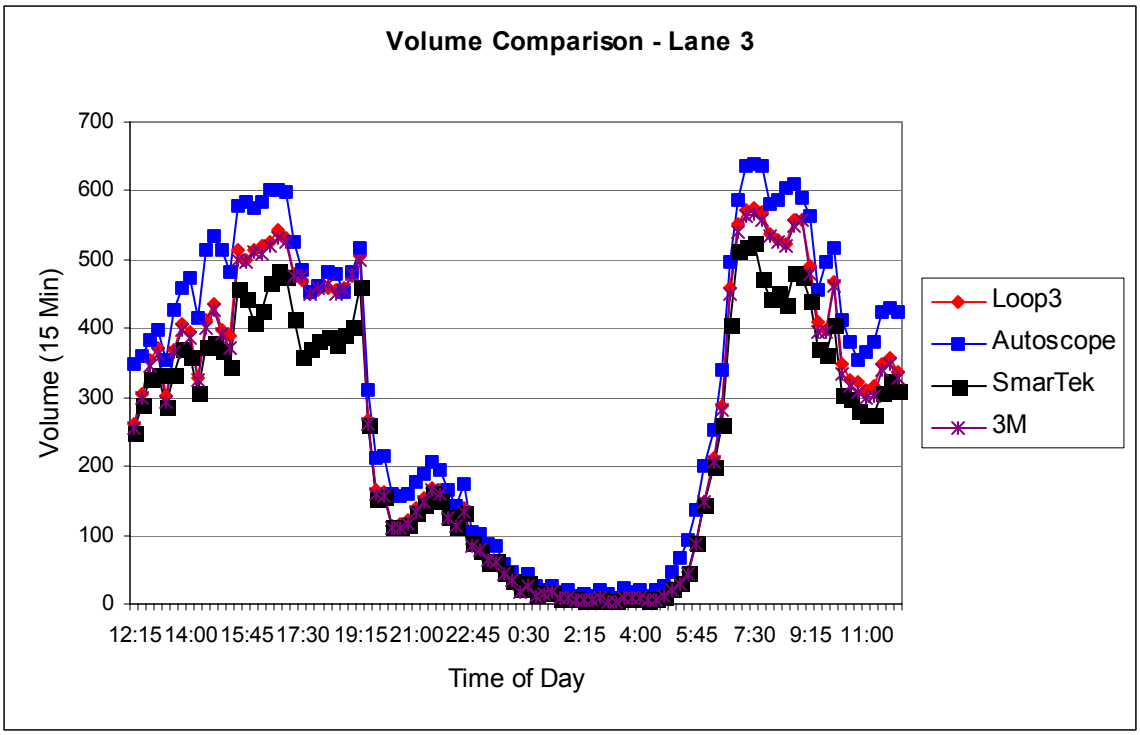
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	25	1	48	50	2.7%	4.0%	15	0.9965
				2	53	55	3.6%	3.8%	12	0.9951
				3	56	56	-0.8%	3.4%	12	0.9788
SmarTek	Sidefire	25	20	1	48	49	2.2%	6.5%	15	0.9761
				2	53	57	6.2%	9.5%	11	0.9275
				3	56	59	4.8%	7.7%	11	0.9521
3M	Under Ground			1	48	51	4.9%	5.3%	16	0.9977
				2	53	52	-2.4%	2.4%	11	0.9986
				3	56	56	-0.4%	1.5%	12	0.9936

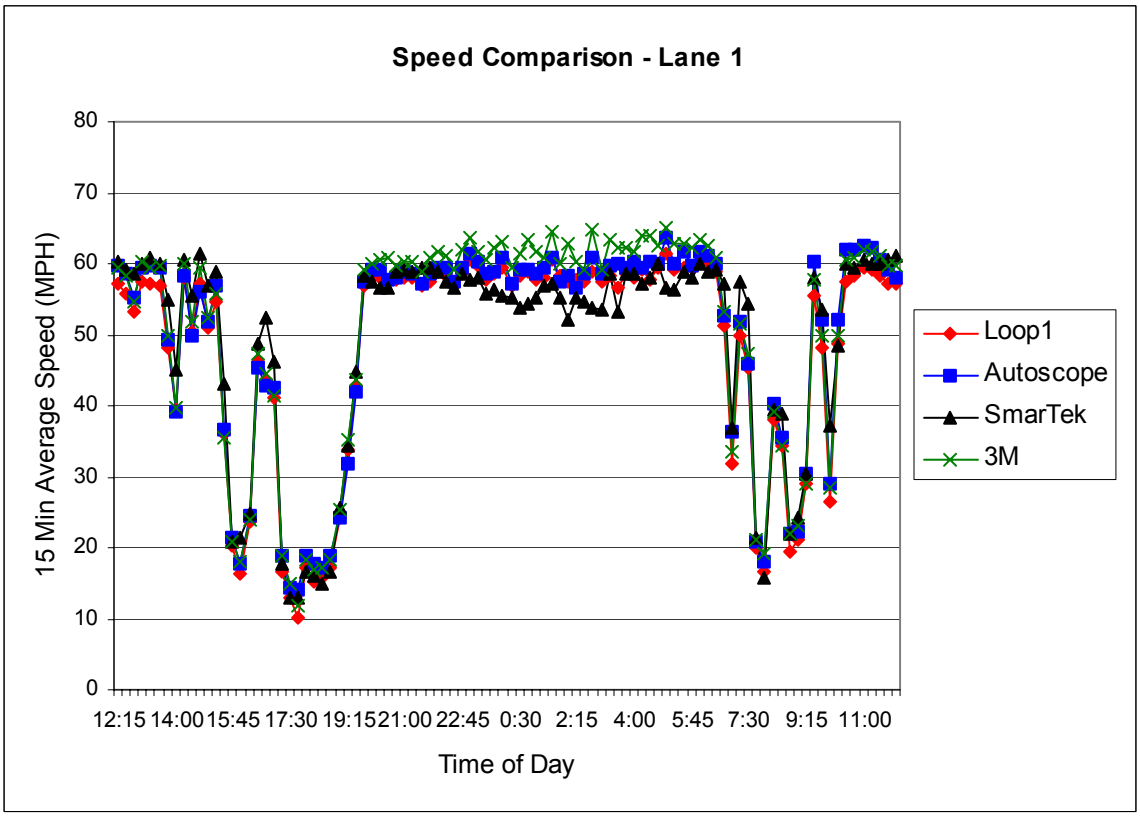
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

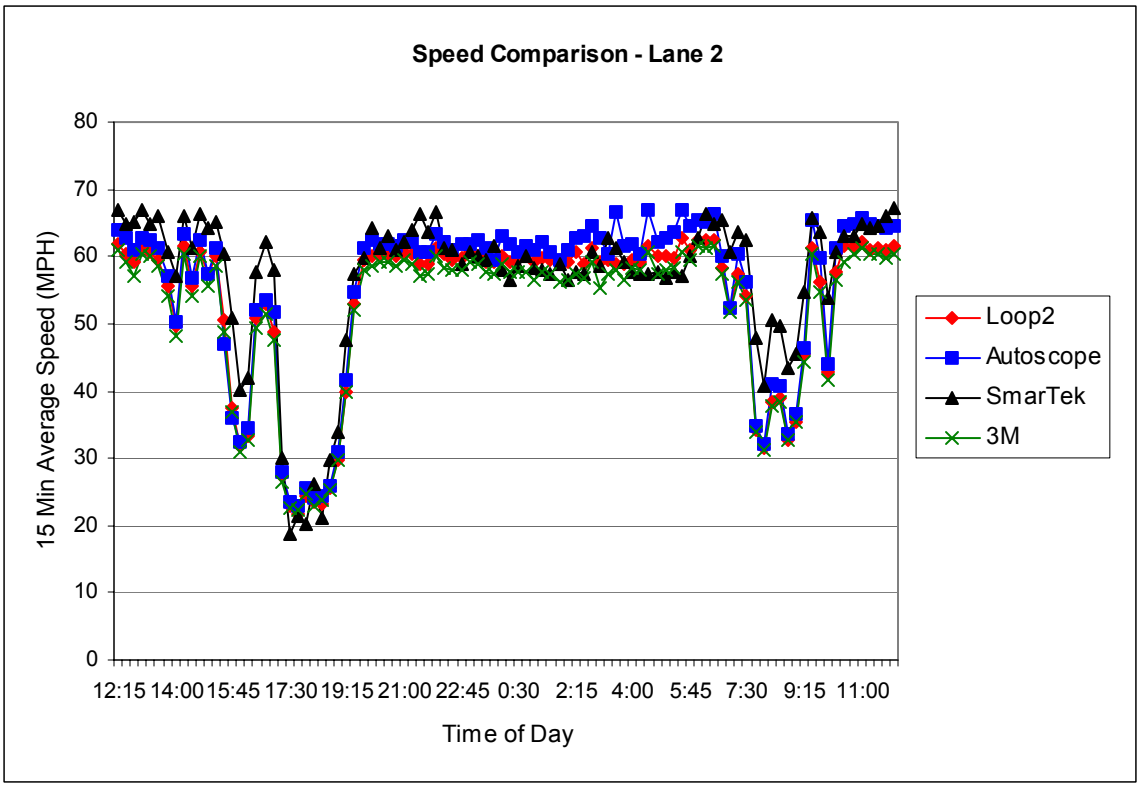
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

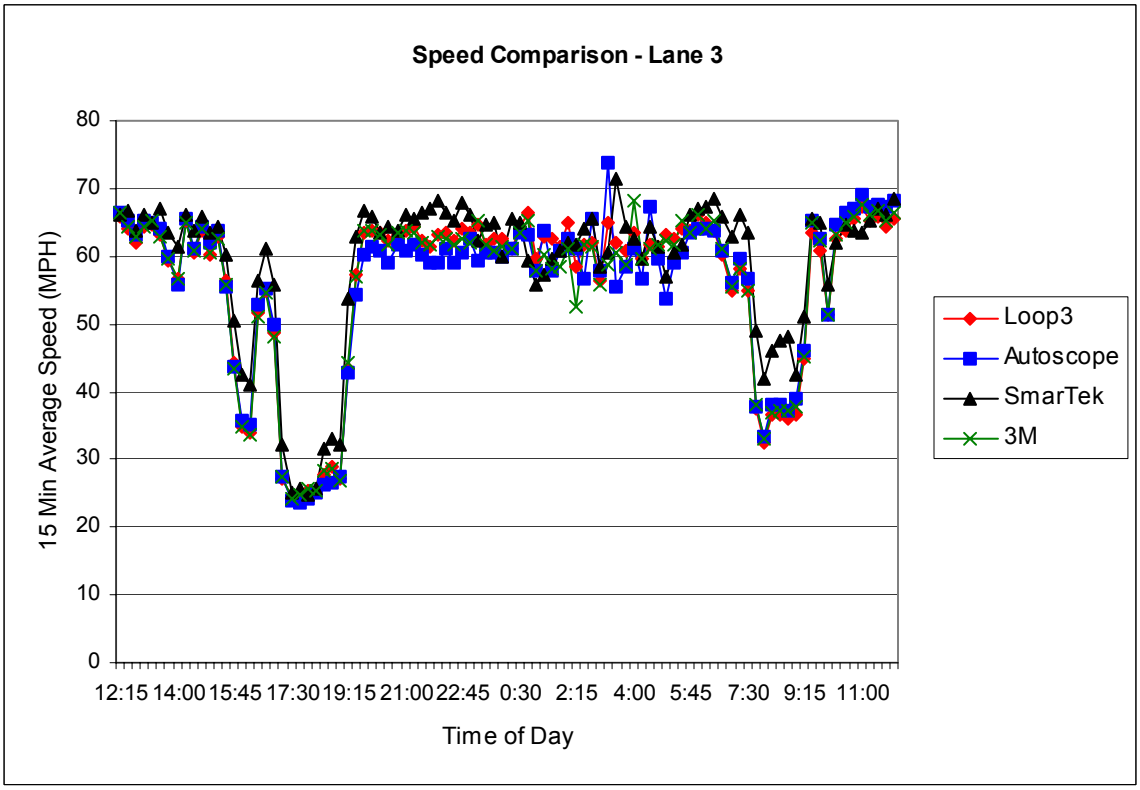

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 8
Freeway - Volume
00:00 AM, November 13, 2001 to 24:00 PM, November 13, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	30	1	25,190	24,495	-2.8%	3.2%	146	0.9962
				2	23,948	24,629	2.8%	3.8%	144	0.9979
				3	25,536	25,324	-0.8%	2.3%	200	0.9994
SmarTek	Sidefire	25	25	1	25,190	23,108	-8.3%	8.3%	134	0.9904
				2	23,948	22,720	-5.1%	5.3%	130	0.9984
				3	25,536	21,824	-14.5%	14.6%	170	0.9979
3M	Under Ground			1	25,190	25,786	2.4%	2.4%	149	0.9996
				2	23,948	23,554	-1.6%	1.8%	139	0.9995
				3	25,536	25,024	-2.0%	2.1%	201	0.9997
ASIM DT 272	Sidefire	25	5	1	25,190	25,498	1.2%	7.2%	151	0.9771

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

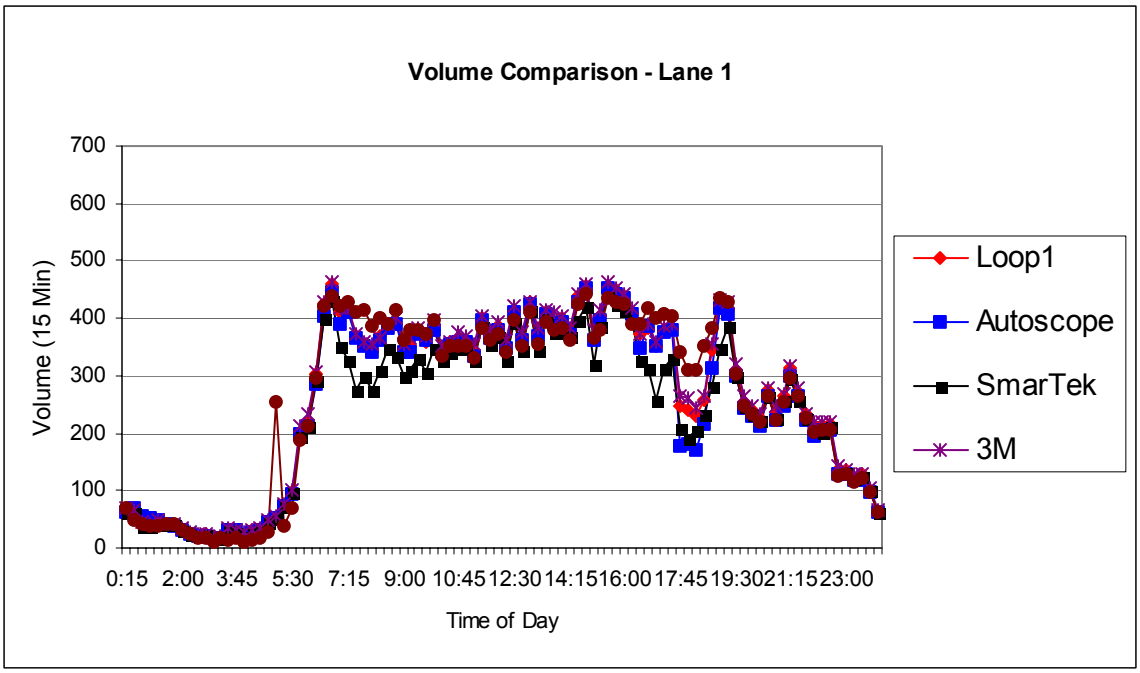
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

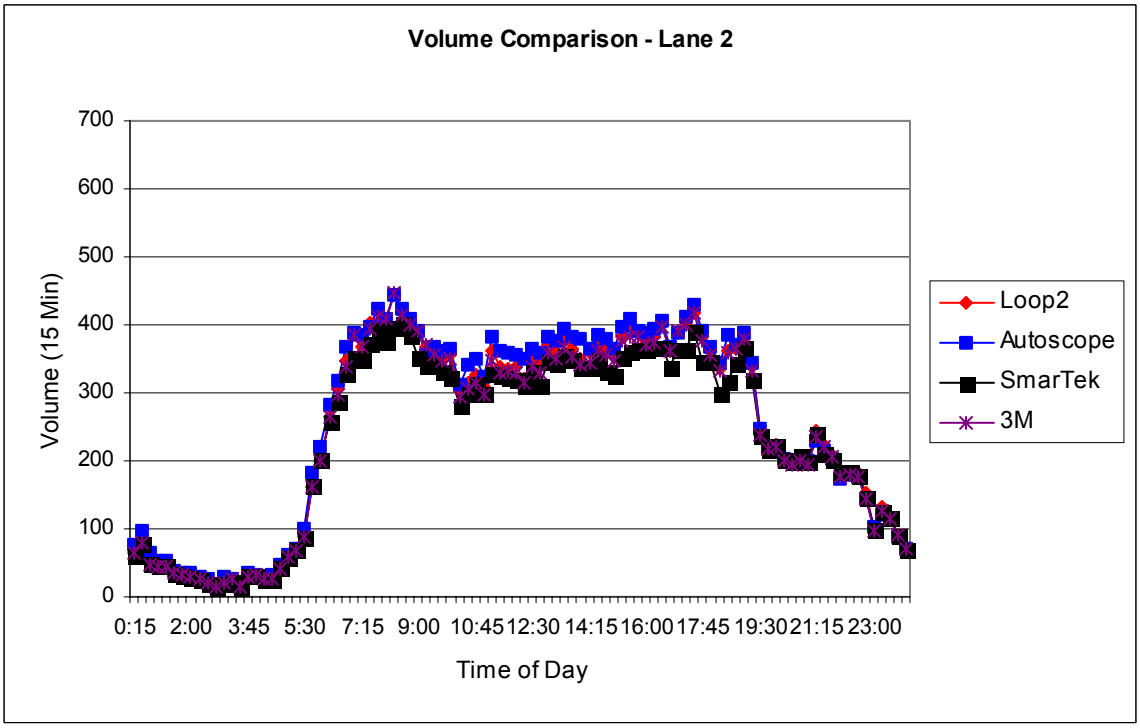
24-Hour Test 8
Freeway - Speed
00:00 AM, November 13, 2001 to 24:00 PM, November 13, 2001

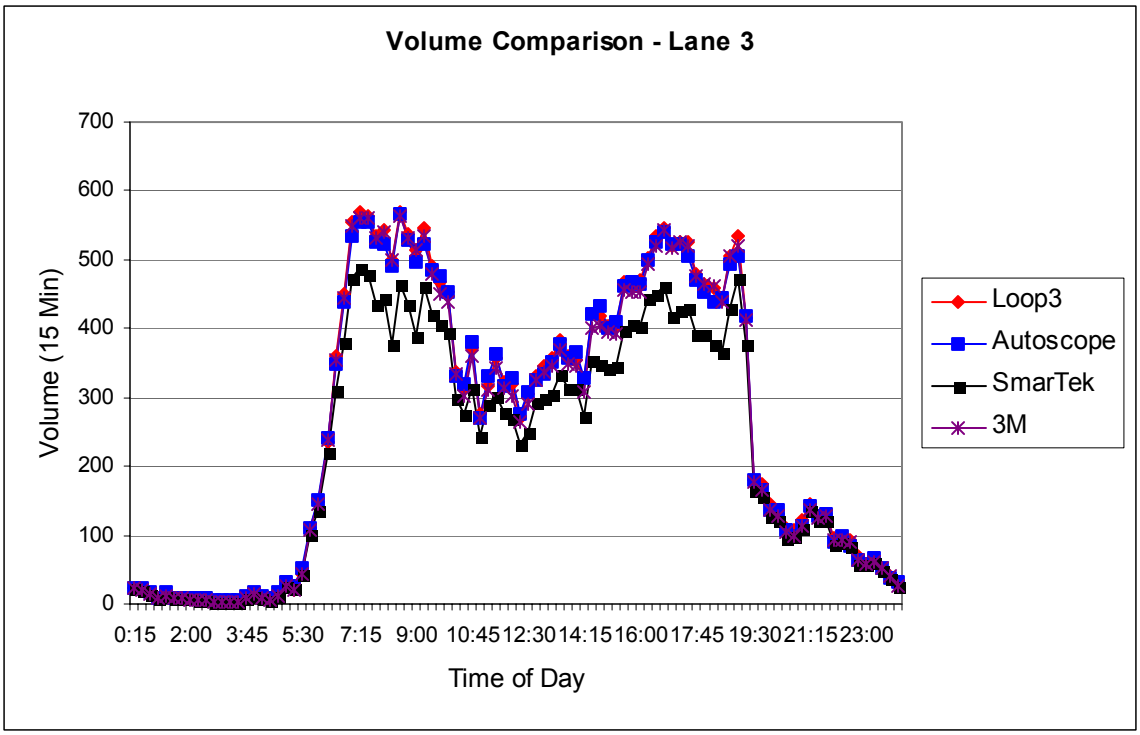
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	30	1	48	47	-2.8%	5.0%	15	0.9974
				2	54	54	-0.9%	1.9%	11	0.9941
				3	57	56	-2.3%	3.3%	12	0.9896
SmarTek	Sidefire	25	25	1	48	49	2.4%	6.8%	16	0.9839
				2	54	55	1.7%	4.4%	12	0.9827
				3	57	58	1.9%	7.2%	10	0.9026
3M	Under Ground			1	48	51	5.4%	6.3%	17	0.9980
				2	54	53	-2.1%	2.1%	11	0.9984
				3	57	57	-0.9%	1.4%	11	0.9958

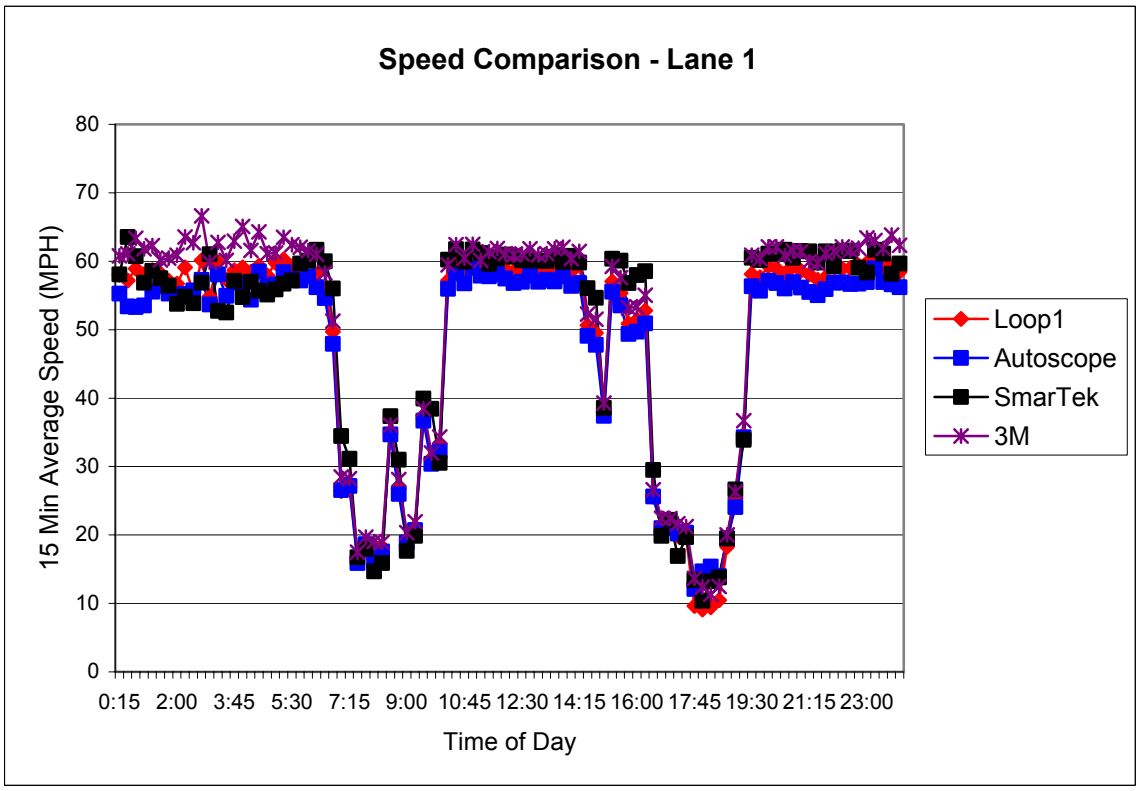
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

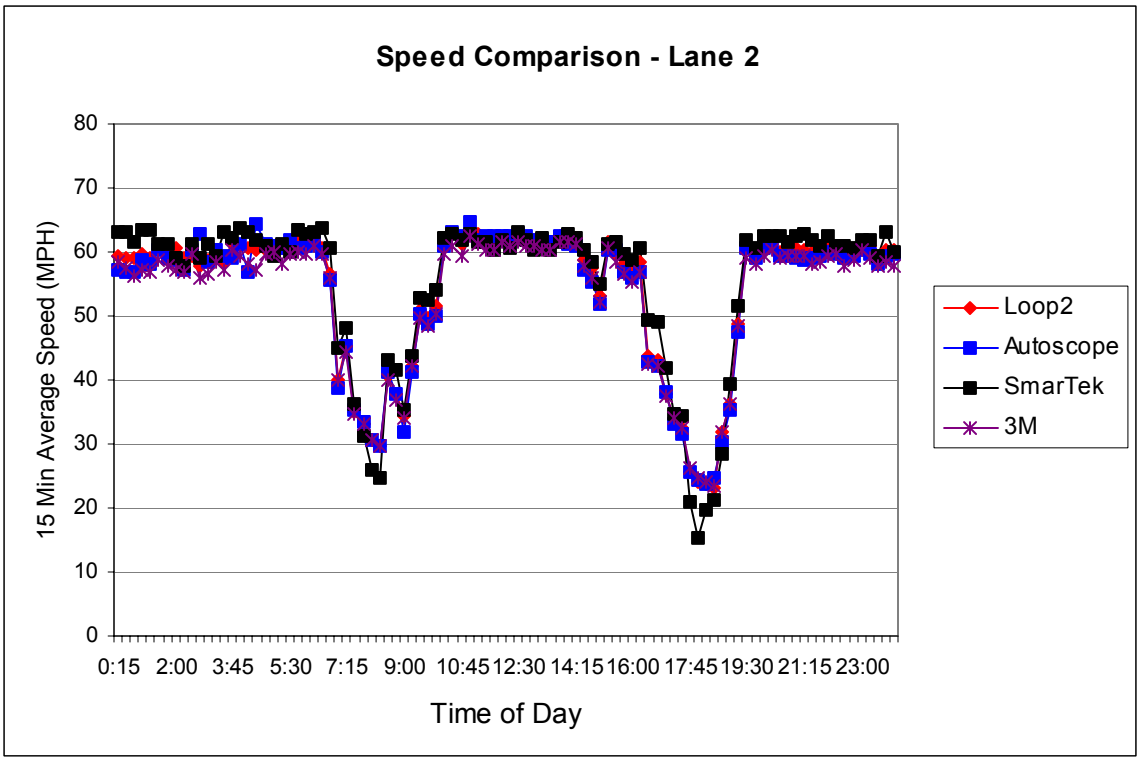
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

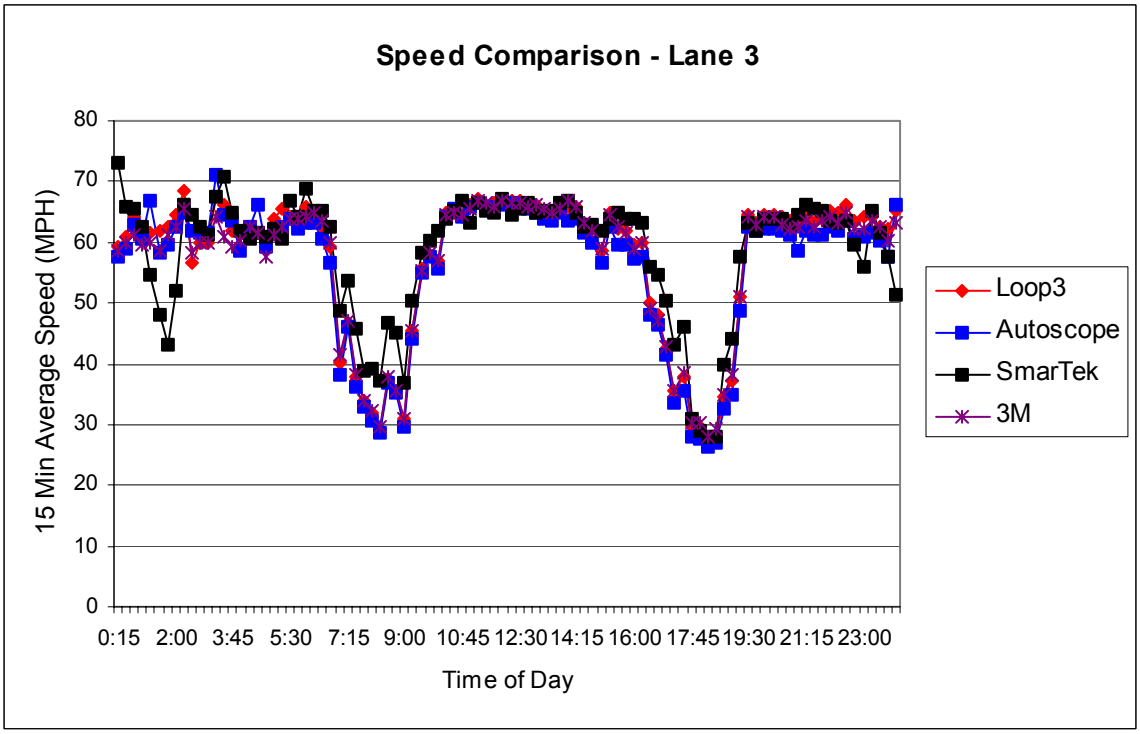

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
SmarTek
3M

24-Hour Test 9
Freeway - Volume
12:00 PM, November 27, 2001 to 12:00 PM, November 28, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	40	1	19,875	20,198	1.6%	4.0%	116	0.9925
				2	19,959	21,228	6.4%	7.5%	116	0.9847
				3	21,193	20,801	-1.8%	7.1%	166	0.9989
Traficon	Sidefire	25	40	1	19,875	18,236	-8.2%	8.7%	104	0.9815
				2	19,959	19,765	-1.0%	6.3%	108	0.9800
				3	21,193	20,068	-5.3%	9.9%	159	0.9869
SmarTek	Sidefire	25	35	1	19,577	16,888	-13.7%	13.8%	108	0.9449
				2	19,712	18,466	-6.3%	6.3%	104	0.9948
				3	20,982	18,897	-9.9%	9.9%	147	0.9913
3M	Under Ground			1	19,875	20,654	3.9%	4.0%	119	0.9992
				2	19,959	19,811	-0.7%	1.4%	113	0.9994
				3	21,193	20,995	-0.9%	1.2%	168	0.9998
ASIM DT 272	Sidefire	25	5	1	19,875	20,701	4.2%	9.6%	113	0.9604

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

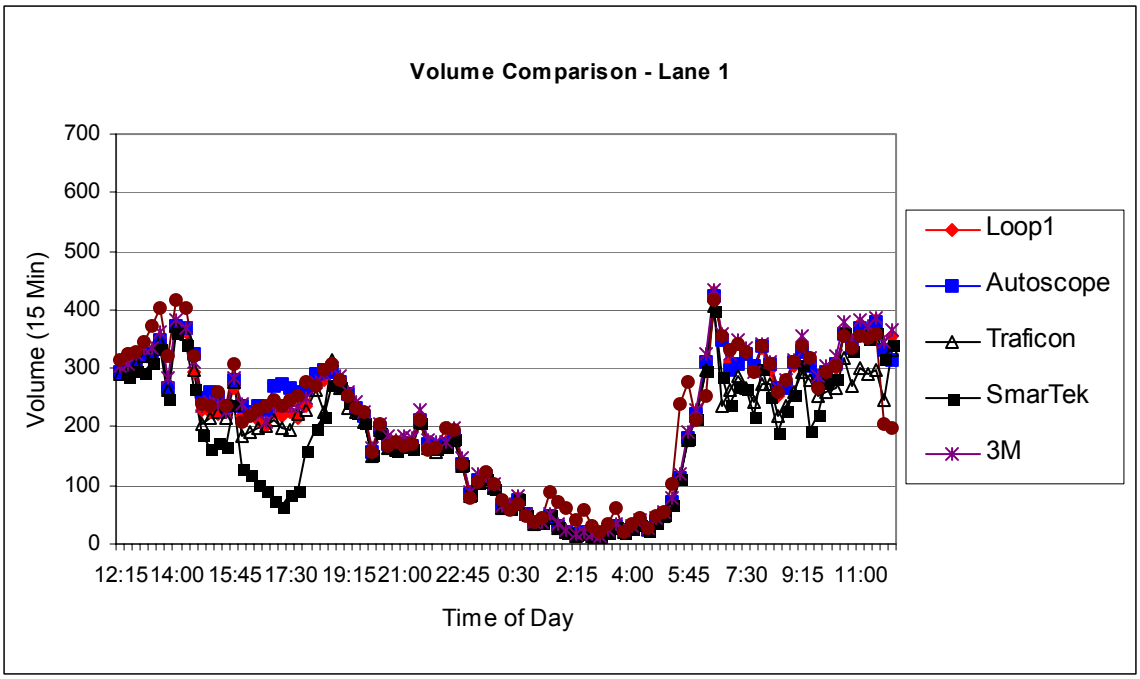
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

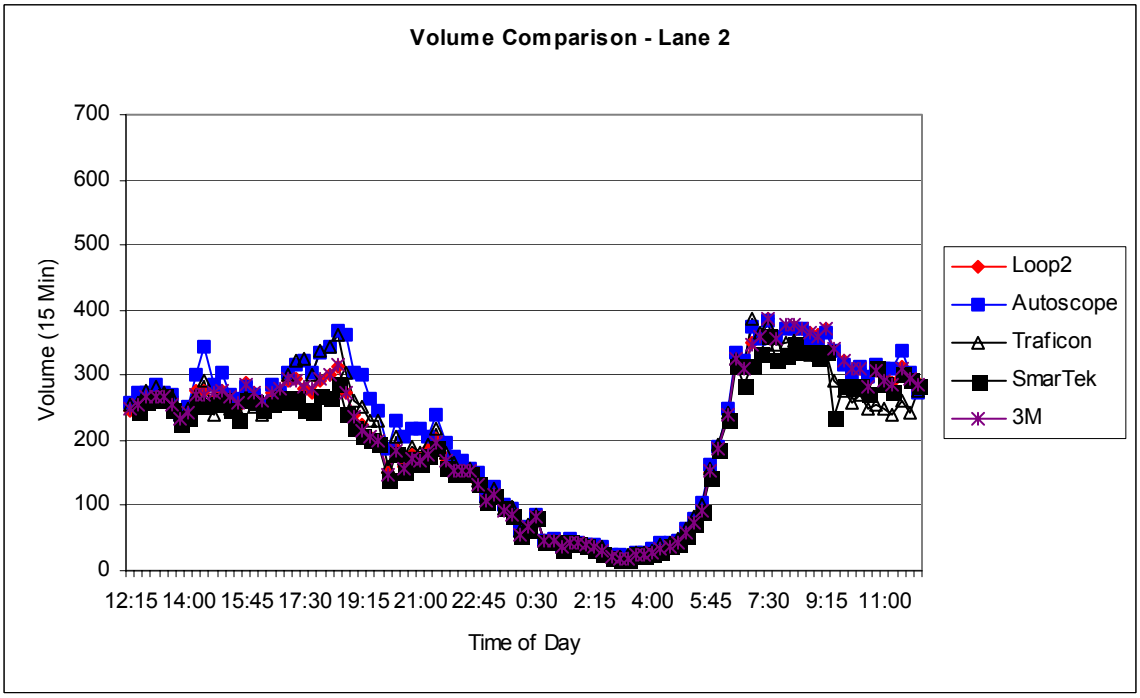
24-Hour Test 9
Freeway - Speed
12:00 PM, November 27, 2001 to 12:00 PM, November 28, 2001

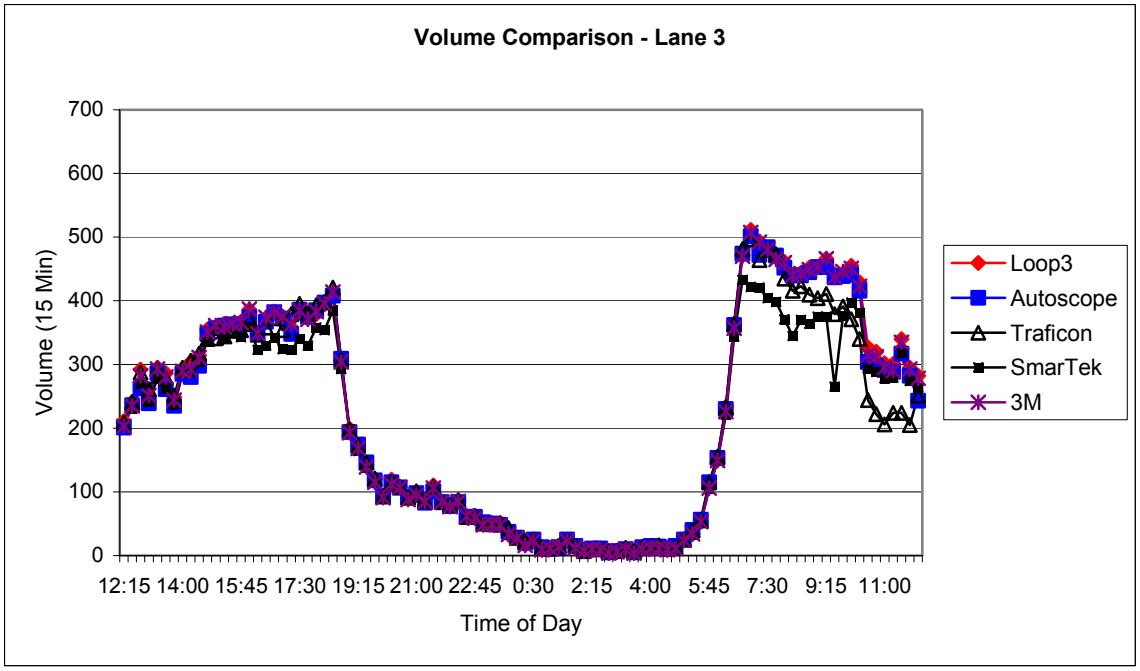
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	25	40	1	38	40	5.2%	6.8%	21	0.9970
				2	45	48	5.2%	5.4%	16	0.9983
				3	49	47	-3.5%	3.8%	14	0.9926
SmarTek	Sidefire	25	35	1	38	43	11.6%	19.8%	23	0.9770
				2	45	45	-0.2%	14.1%	20	0.9835
				3	49	46	-4.9%	13.4%	19	0.9763
3M	Under Ground			1	38	41	6.9%	13.1%	21	0.9981
				2	45	44	-2.6%	2.6%	15	0.9991
				3	49	48	-1.5%	2.3%	14	0.9910

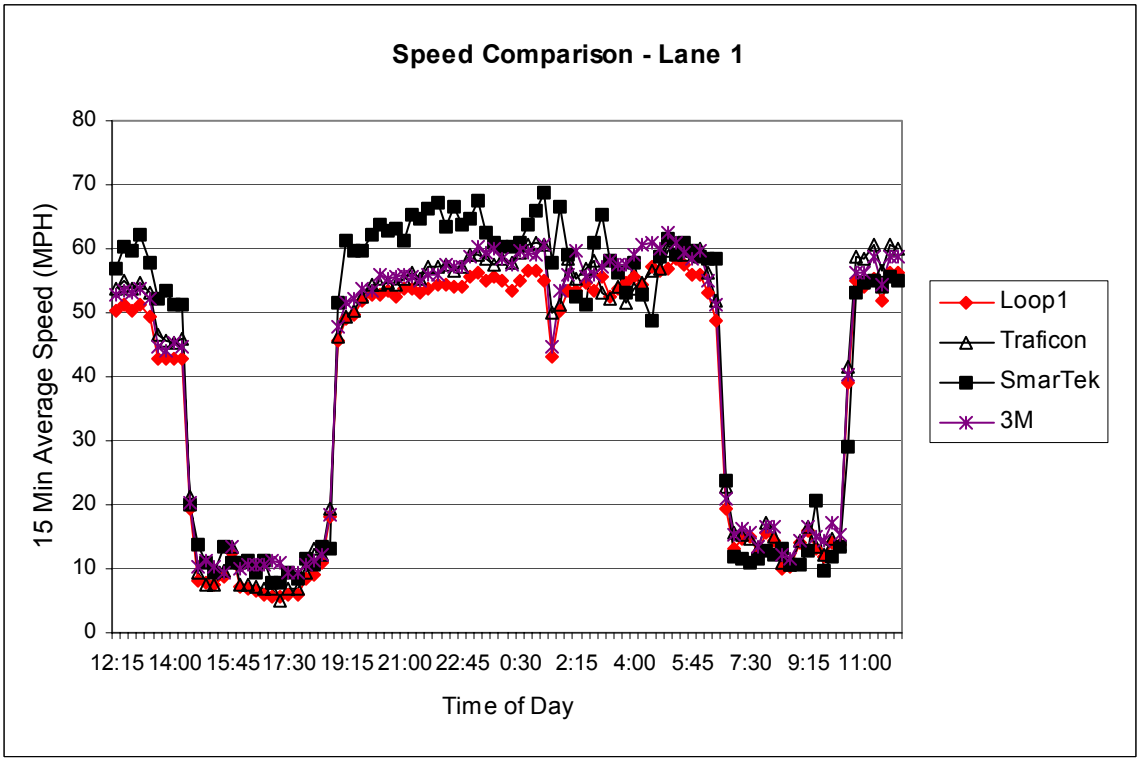
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

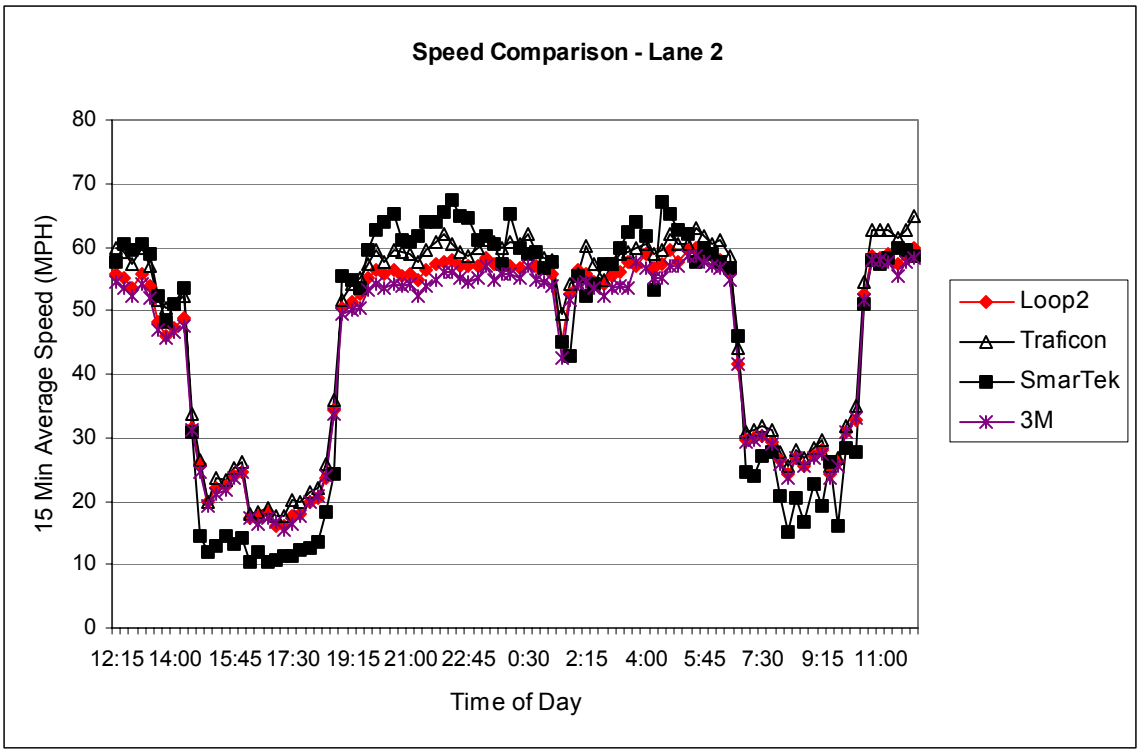
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

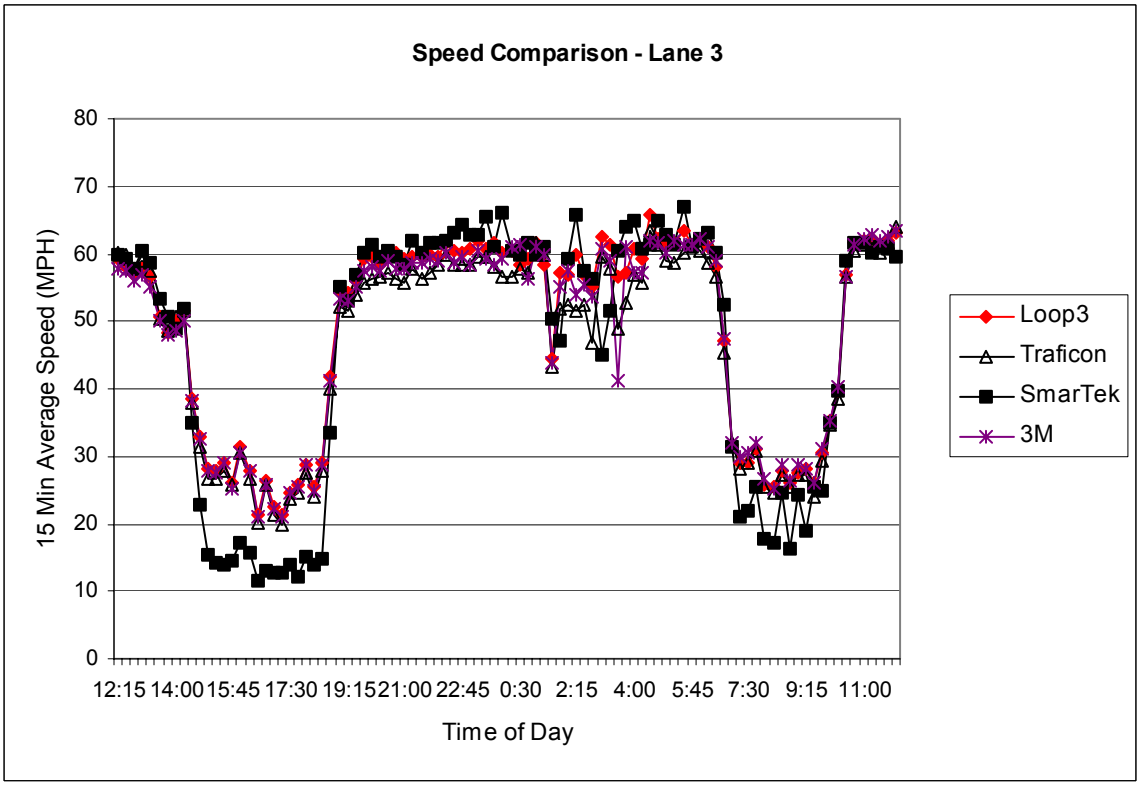

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon
SmarTek
3M

24-Hour Test 10
Freeway - Volume
00:00 AM, November 29, 2001 to 24:00 PM, November 29, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	35	1	24,884	24,248	-2.6%	2.7%	138	0.9987
				2	23,483	23,620	0.6%	20.2%	132	0.9976
				3	25,404	24,521	-3.5%	3.8%	188	0.9976
Traficon	Sidefire	25	35	1	24,884	23,563	-5.3%	12.9%	129	0.9560
				2	23,483	22,142	-5.7%	7.2%	134	0.8306
				3	25,404	24,664	-2.9%	3.8%	186	0.9965
SmarTek (3)	Sidefire	25	30	1	20,314	19,311	-4.9%	4.9%	136	0.9974
				2	19,071	17,703	-7.2%	7.2%	122	0.9970
				3	20,050	17,770	-11.4%	11.4%	169	0.9975
3M	Under Ground			1	24,884	25,492	2.4%	2.5%	142	0.9996
				2	23,483	23,200	-1.2%	1.6%	131	0.9995
				3	25,404	25,029	-1.5%	1.5%	192	0.9998

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

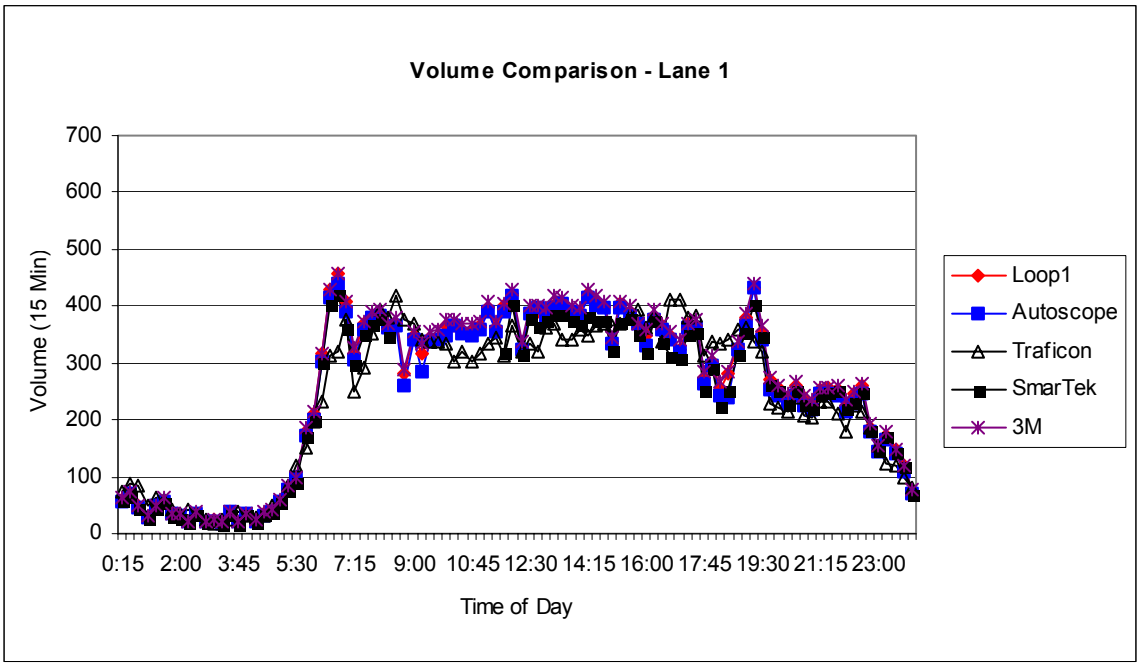
(3). Data missing between 8:30 AM to 11:30 AM. Comparison based on the same time period as baseline.

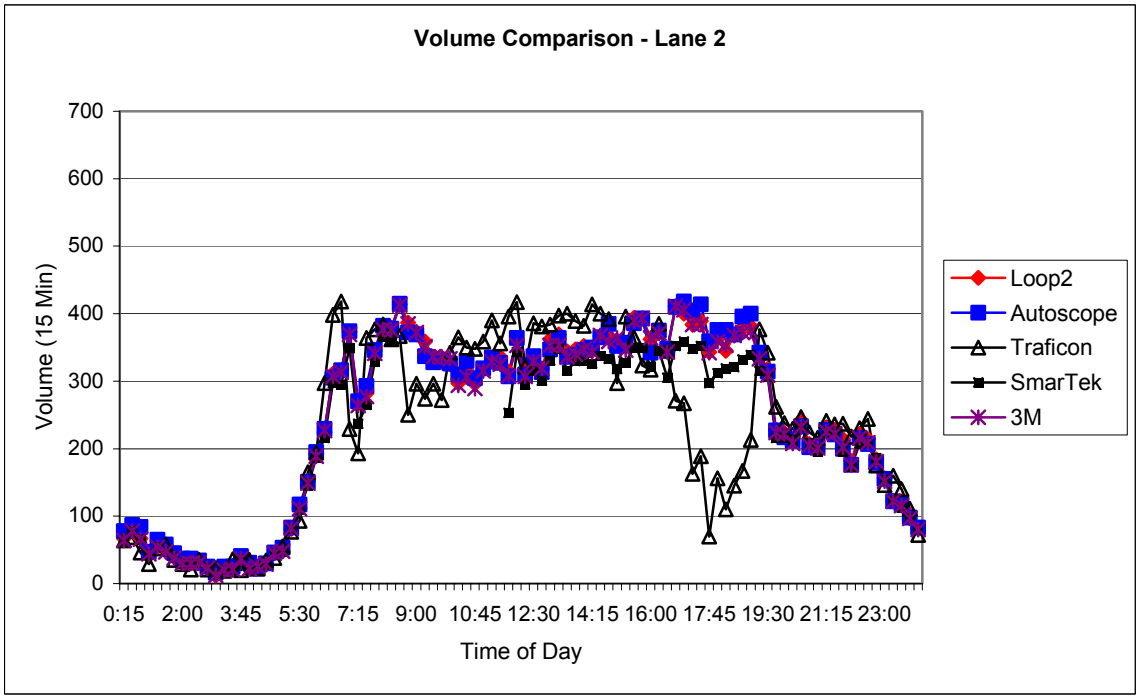
24-Hour Test 10
Freeway - Speed
00:00 AM, November 29, 2001 to 24:00 PM, November 29, 2001

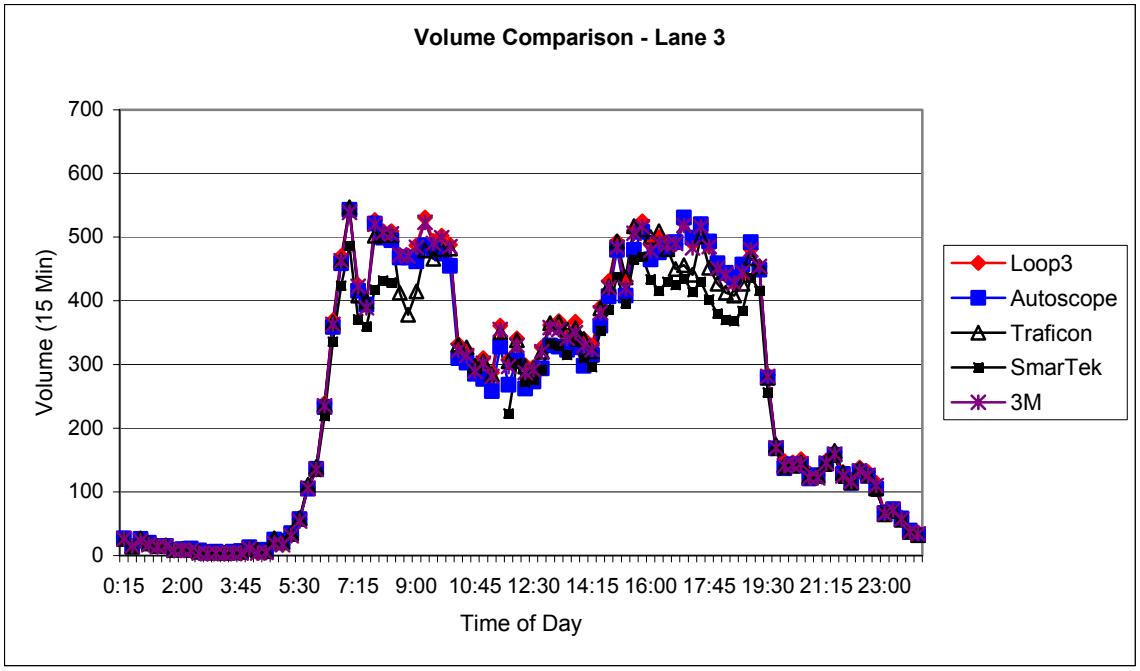
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	35	1	46	45	-0.9%	4.0%	16	0.9973
				2	51	51	-0.9%	2.2%	12	0.9954
				3	54	54	-0.9%	2.6%	14	0.9932
Traficon	Sidefire	25	35	1	46	47	1.8%	19.5%	11	0.9732
				2	51	43	-16.7%	20.0%	16	0.9710
				3	54	46	-15.6%	15.3%	11	0.9735
SmarTek	Sidefire	25	30	1	46	45	-1.8%	7.7%	15	0.9719
				2	51	55	6.4%	6.8%	13	0.9755
				3	54	56	3.8%	6.0%	11	0.9569
3M	Under Ground			1	46	48	5.3%	5.7%	18	0.9987
				2	51	50	-2.0%	2.0%	12	0.9987
				3	54	54	-0.6%	1.4%	13	0.9966

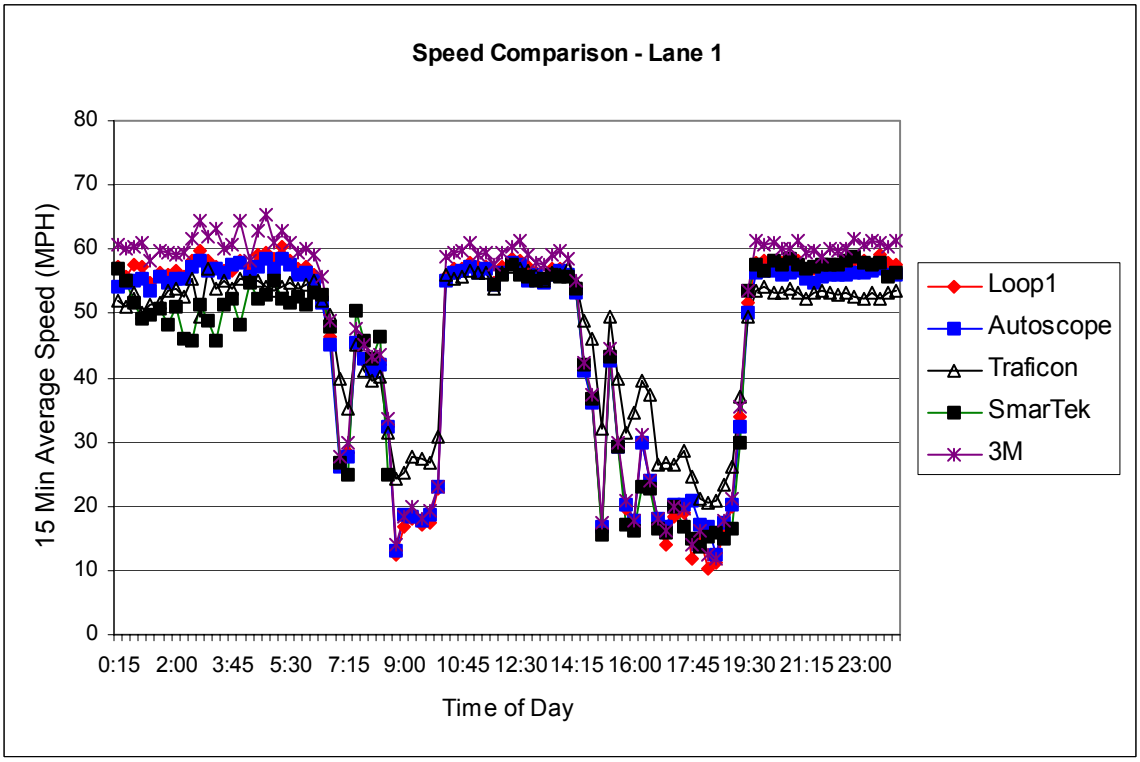
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

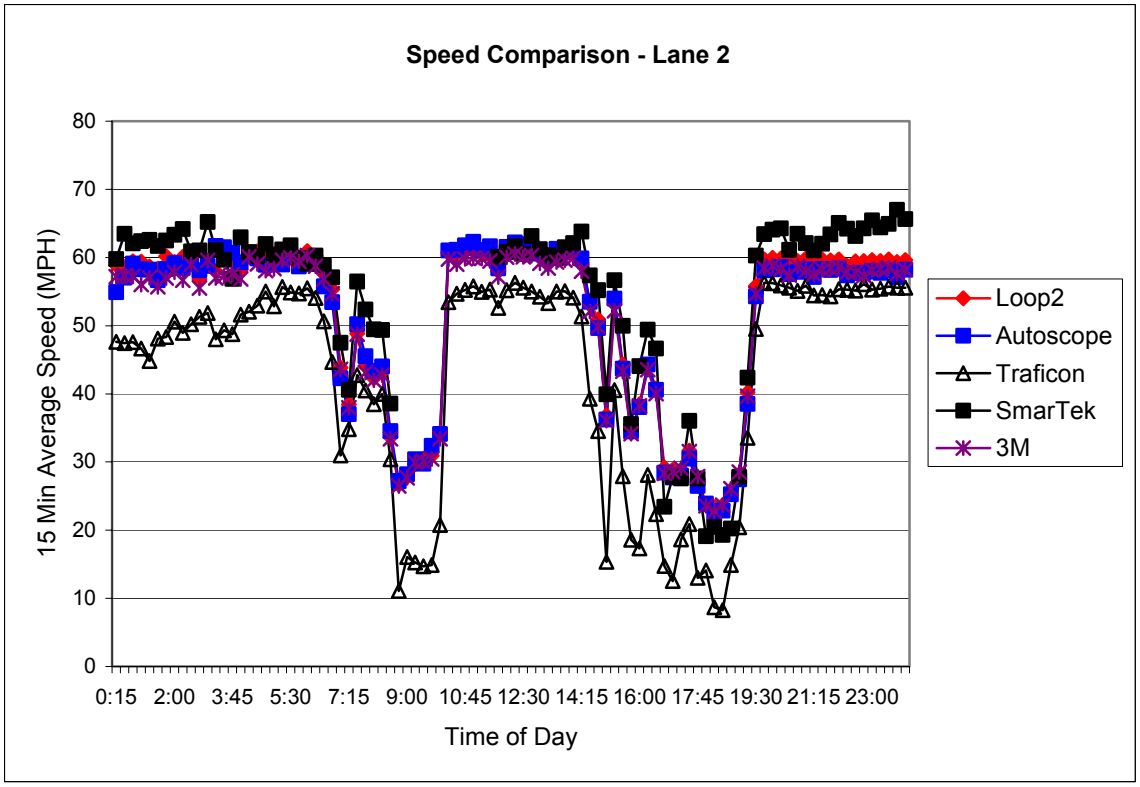
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

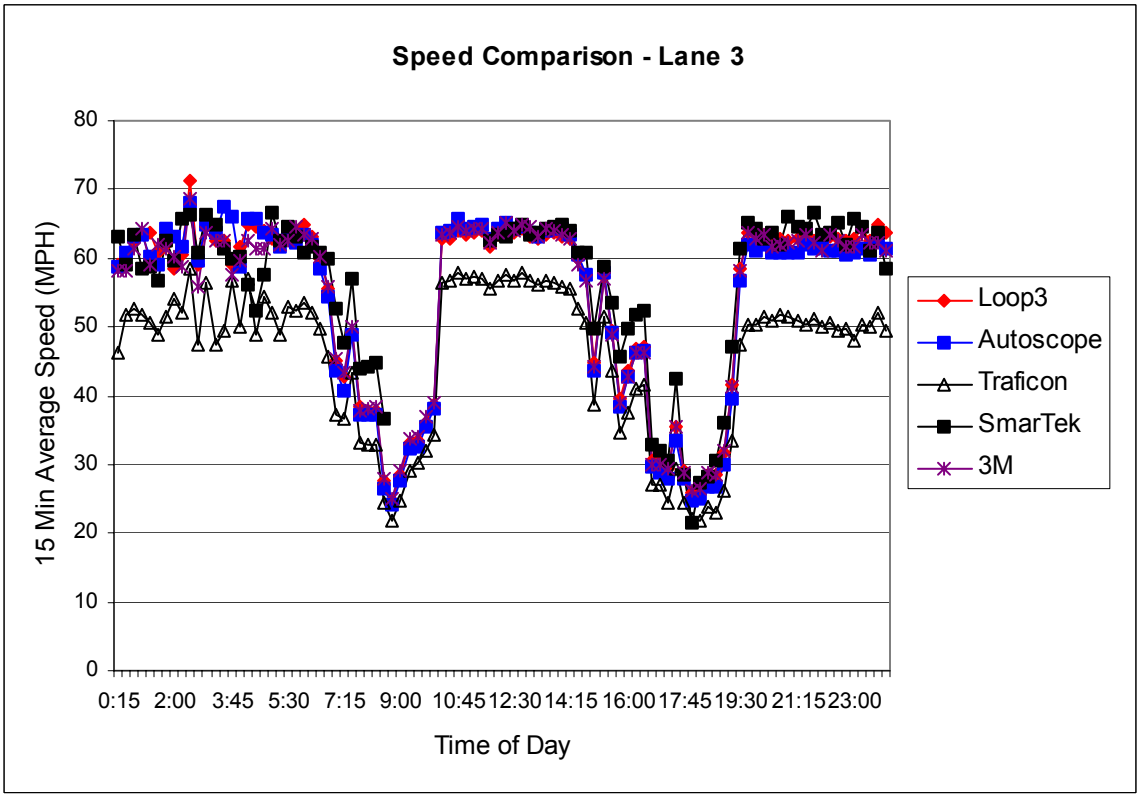

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M

24-Hour Test 11
Freeway - Volume
12:00 PM, December 11, 2001 to 12:00 PM, December 12, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	45	1	27,051	26,447	-2.2%	2.3%	154	0.9994
				2	24,074	22,798	-5.3%	5.4%	133	0.9973
				3	25,699	24,384	-5.1%	5.4%	197	0.9976
Traficon	Sidefire	25	45	1	27,051	26,670	-1.4%	1.5%	155	0.9994
				2	24,074	24,120	0.2%	3.7%	138	0.9931
				3	25,699	25,693	0.0%	4.5%	201	0.9951
SmarTek (3)	Sidefire	25	40	1	27,051	24,049	-11.1%	11.1%	135	0.9947
				2	24,074	22,076	-8.3%	8.4%	121	0.9965
				3	25,699	21,893	-14.8%	14.8%	170	0.9971
3M	Under Ground			1	27,051	27,764	2.6%	2.7%	159	0.9995
				2	24,074	23,523	-2.3%	2.3%	135	0.9997
				3	25,699	25,072	-2.4%	2.5%	199	0.9999

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

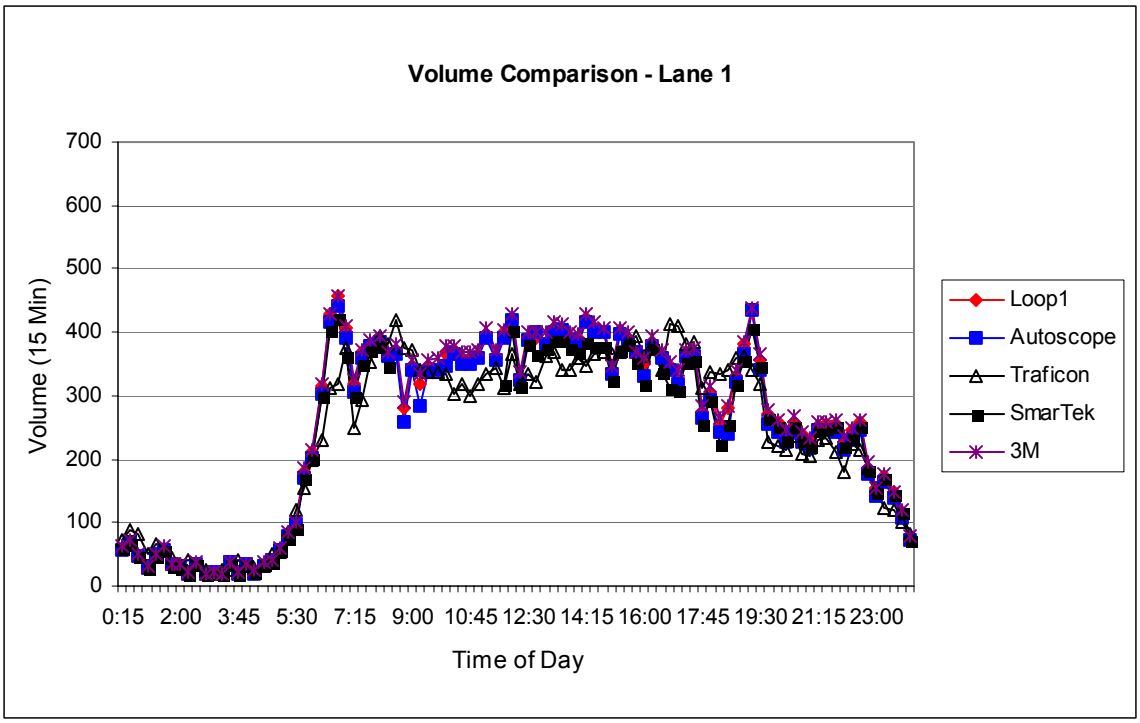
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

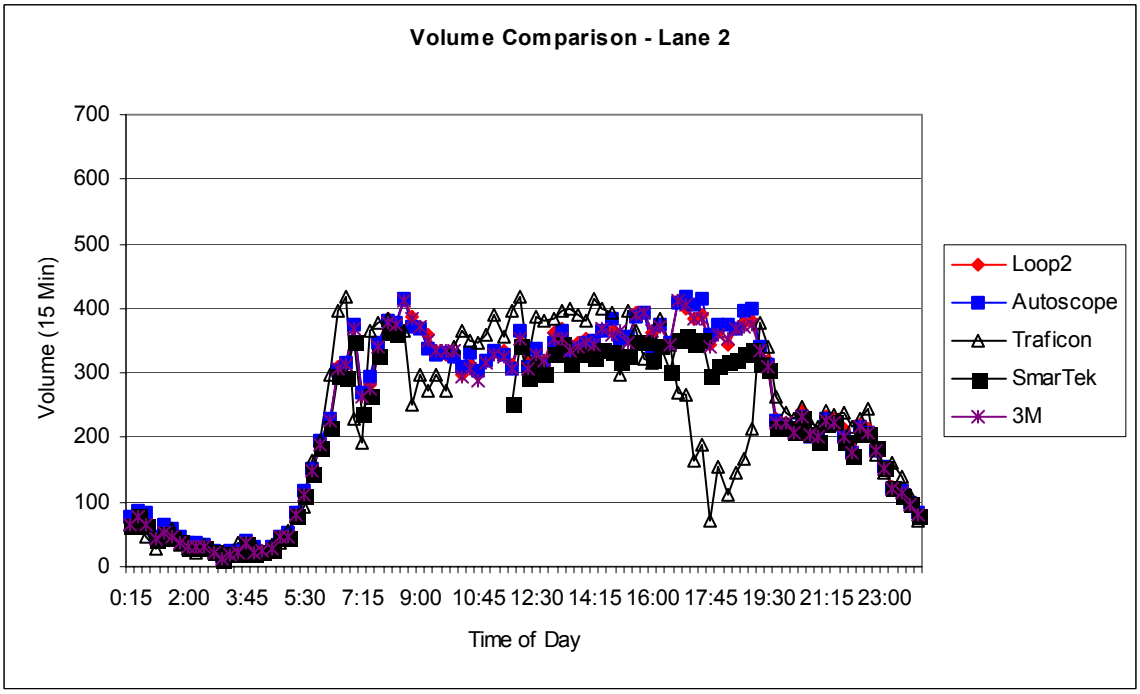
24-Hour Test 11
Freeway - Speed
12:00 PM, December 11, 2001 to 12:00 PM, December 12, 2001

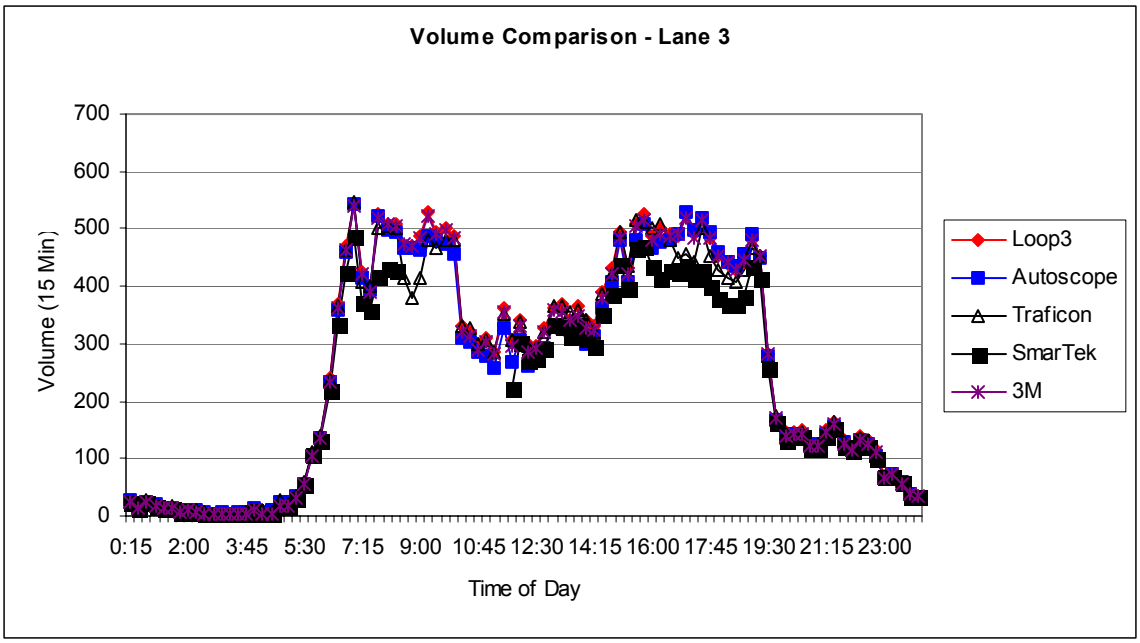
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	25	45	1	54	52	-4.1%	4.1%	7	0.9933
				2	58	55	-5.4%	5.4%	4	0.9850
				3	60	56	-7.8%	7.8%	5	0.9797
Traficon	Sidefire	25	45	1	54	65	20.2%	20.2%	9	0.9883
				2	58	65	13.4%	13.4%	5	0.9761
				3	60	67	10.6%	10.7%	6	0.9459
SmarTek	Sidefire	25	40	1	54	51	-5.4%	6.5%	7	0.8760
				2	58	57	-1.3%	3.8%	3	0.8134
				3	60	62	3.3%	5.2%	4	0.7912
3M	Under Ground			1	54	56	4.5%	4.5%	8	0.9924
				2	58	56	-2.4%	2.4%	4	0.9925
				3	60	60	-0.8%	1.7%	5	0.9411

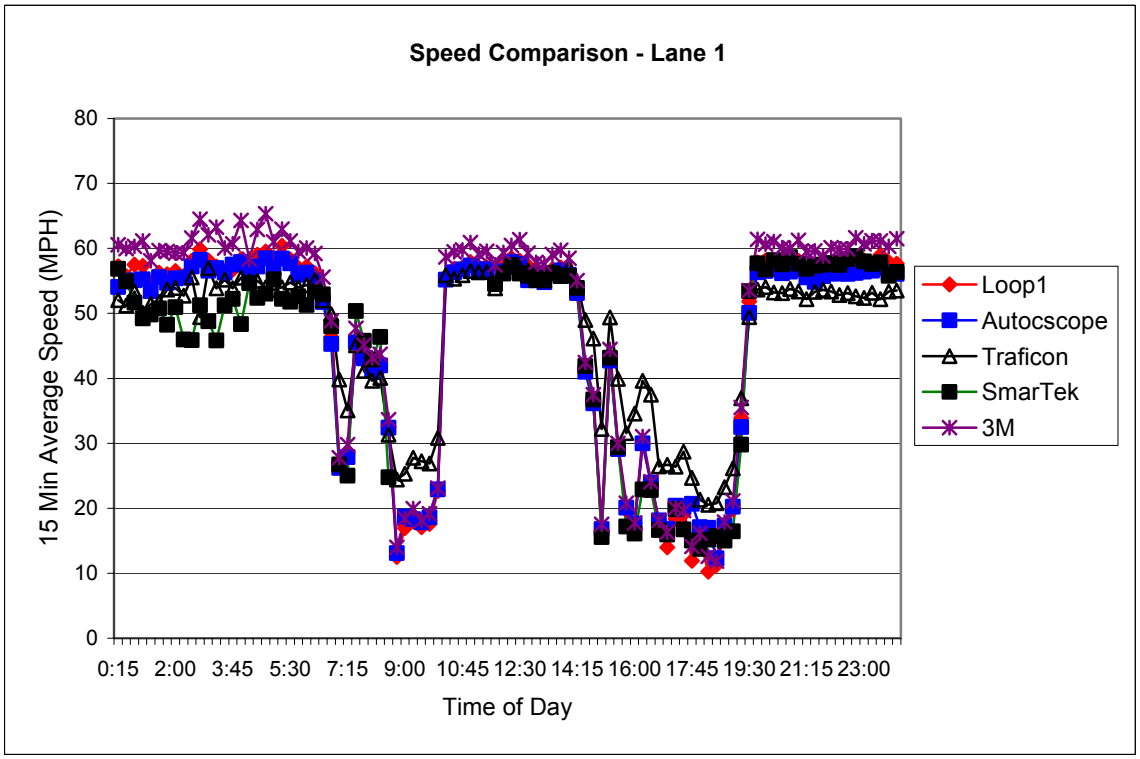
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

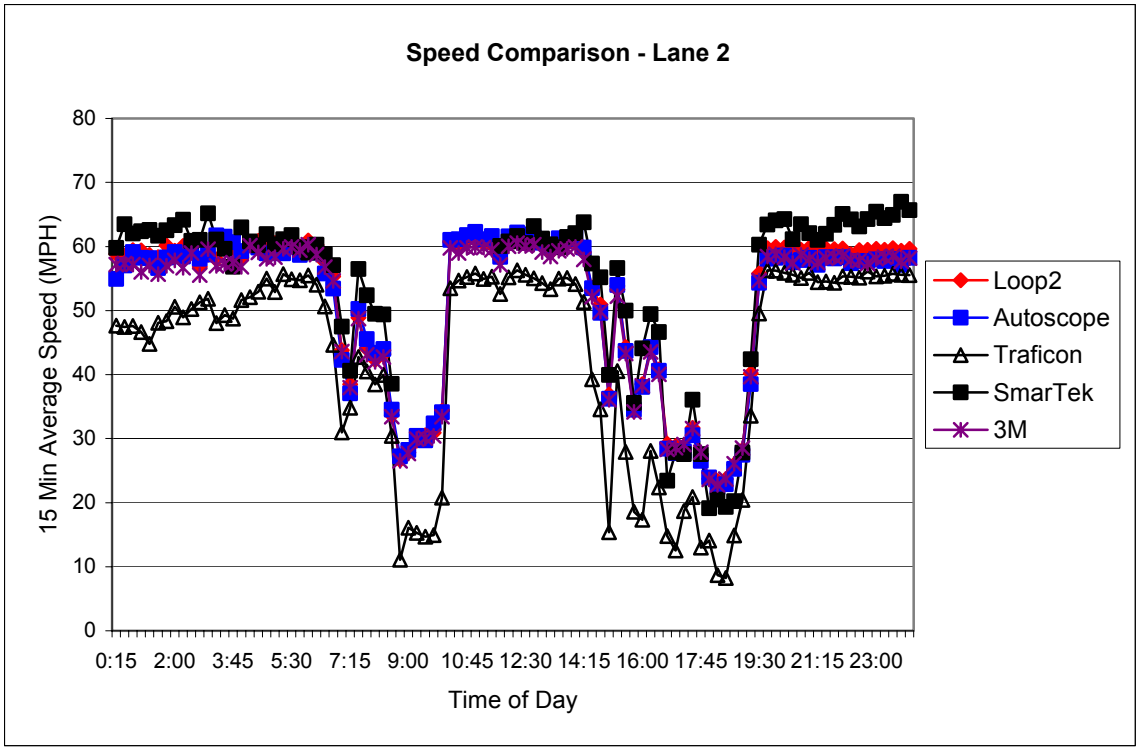
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

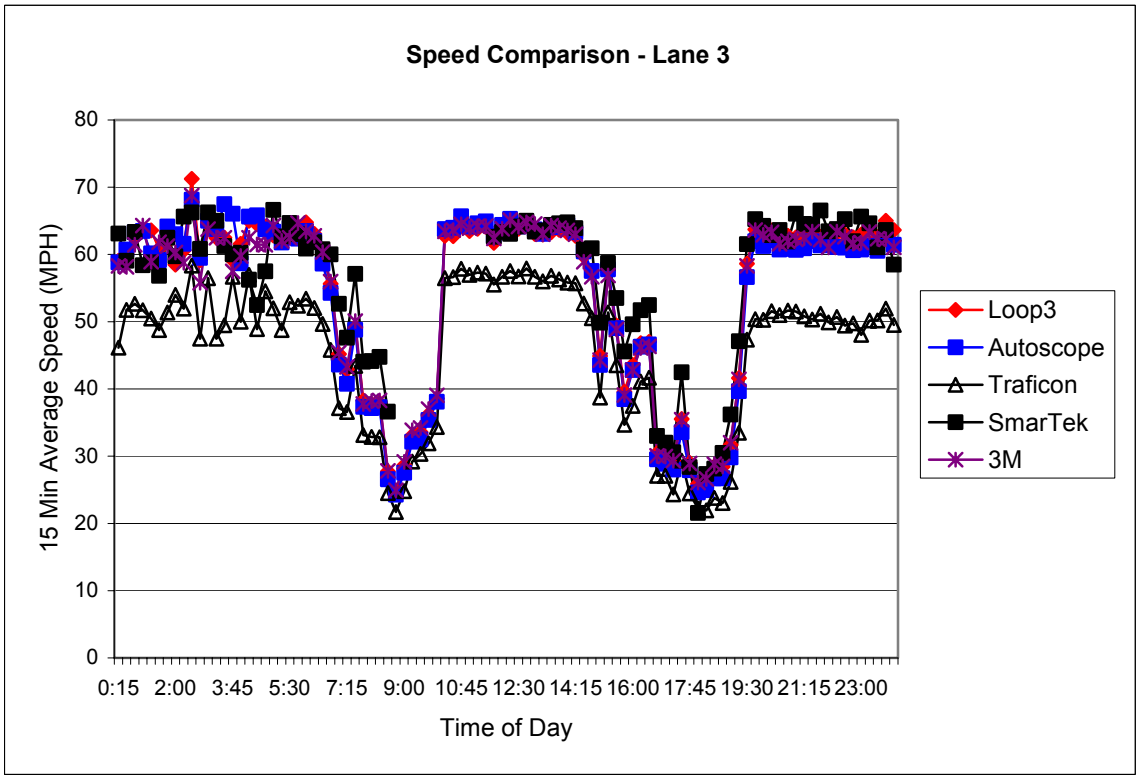

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15 2:00 3:45 5:30 7:15 9:00 10:45 12:30 14:15 16:00 17:45 19:30 21:15 23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15 2:00 3:45 5:30 7:15 9:00 10:45 12:30 14:15 16:00 17:45 19:30 21:15 23:00
Time of Day
Loop1
Autocscope
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M

24-Hour Test 12
Freeway - Volume
00:00 PM, December 18, 2001 to 24:00 PM, December 18, 2001

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	45	1	27,132	26,370	-2.8%	2.8%	151	0.9985
				2	24,318	22,931	-5.7%	6.1%	133	0.9940
				3	26,455	25,783	-2.5%	3.9%	201	0.9993
Traficon	Sidefire	35	45	1	27,132	25,892	-4.6%	4.8%	150	0.9841
				2	24,318	24,003	-1.3%	3.3%	134	0.9944
				3	26,455	27,029	2.2%	3.9%	211	0.9919
SmarTek (3)	Sidefire	35	40	1	27,132	25,043	-7.7%	7.8%	139	0.9958
				2	24,318	22,032	-9.4%	9.4%	121	0.9977
				3	26,455	23,342	-11.8%	11.8%	180	0.9988
3M	Under Ground			1	27,132	27,771	2.4%	2.4%	157	0.9997
				2	24,318	23,726	-2.4%	2.5%	135	0.9996
				3	26,455	25,860	-2.2%	2.3%	204	0.9998
ASIM DT 272	Sidefire	35	5	1	27,132	27,198	0.2%	0.8%	154	0.9997

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

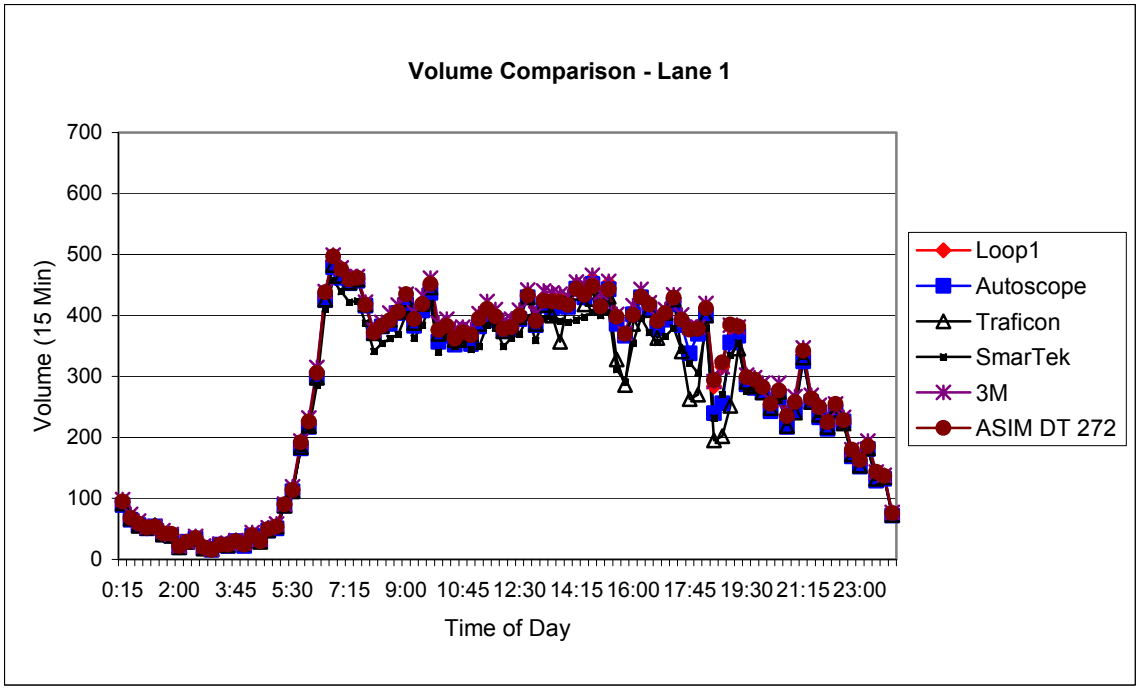
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

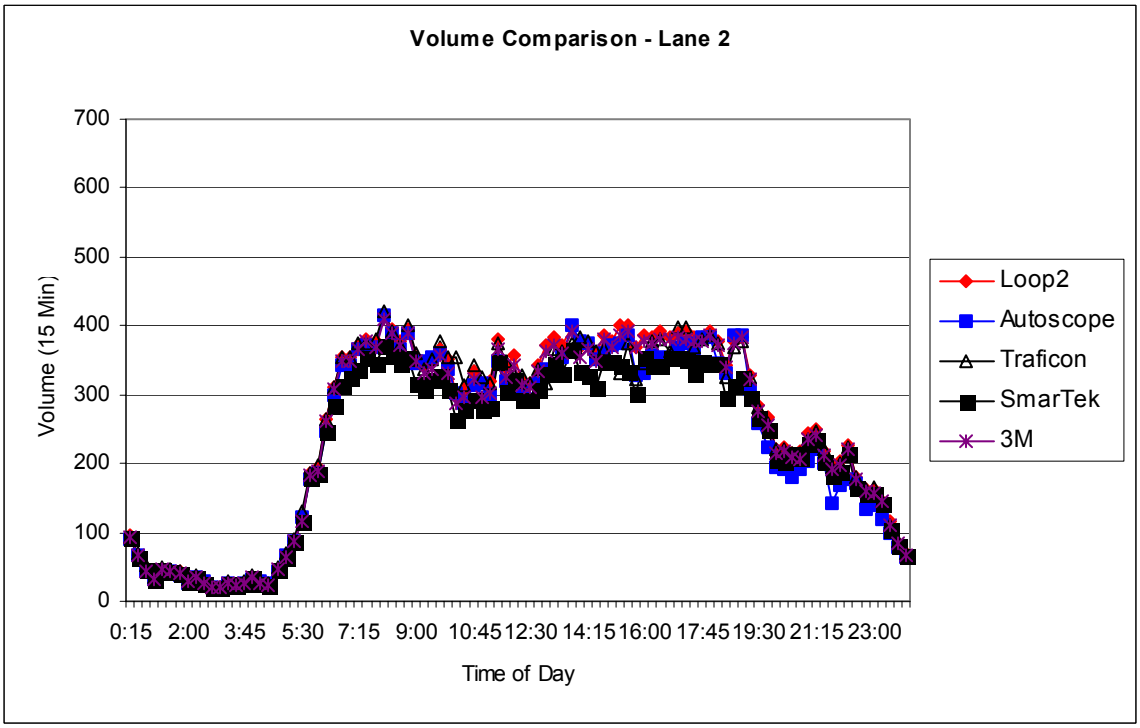
24-Hour Test 12
Freeway - Speed
00:00 PM, December 18, 2001 to 24:00 PM, December 18, 2001

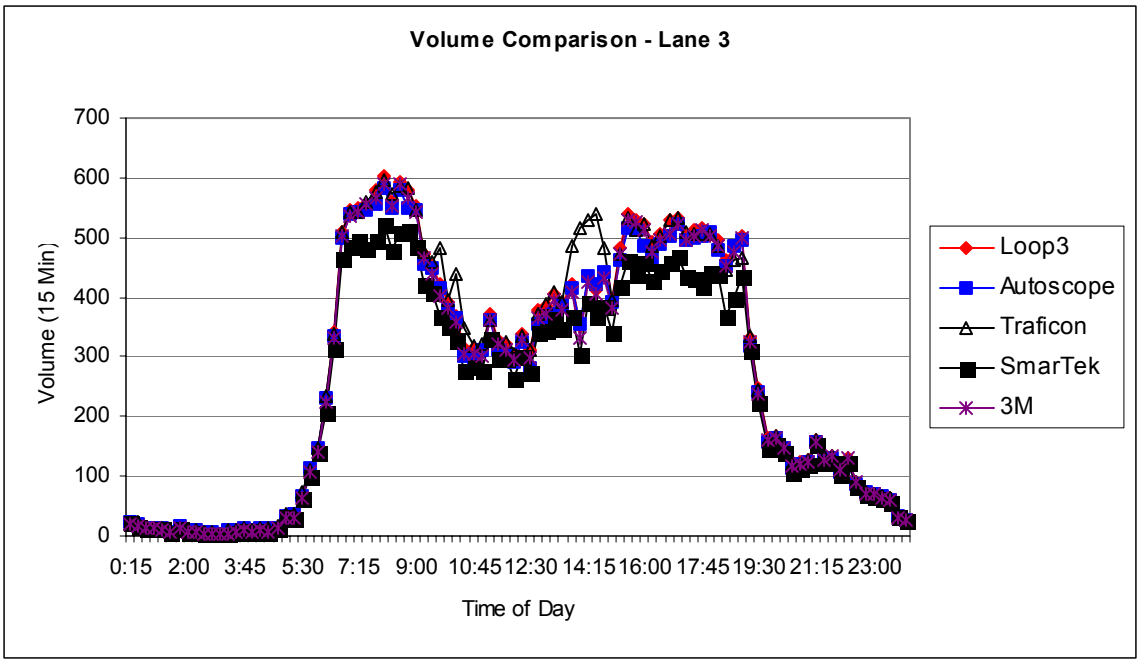
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	45	1	53	52	-3.2%	3.6%	10	0.9956
				2	58	55	-4.3%	4.3%	7	0.9915
				3	60	56	-6.6%	6.7%	7	0.9813
Traficon	Sidefire	35	45	1	53	54	1.6%	2.6%	11	0.9915
				2	58	55	-3.7%	3.9%	8	0.9747
				3	60	55	-7.5%	7.6%	7	0.9569
SmarTek	Sidefire	35	40	1	53	53	-1.6%	5.9%	11	0.9512
				2	58	56	-2.8%	4.1%	8	0.9533
				3	60	55	-8.7%	8.6%	7	0.9156
3M	Under Ground			1	53	56	4.8%	4.9%	11	0.9965
				2	58	56	-2.2%	2.2%	7	0.9963
				3	60	60	-0.1%	1.4%	8	0.9878

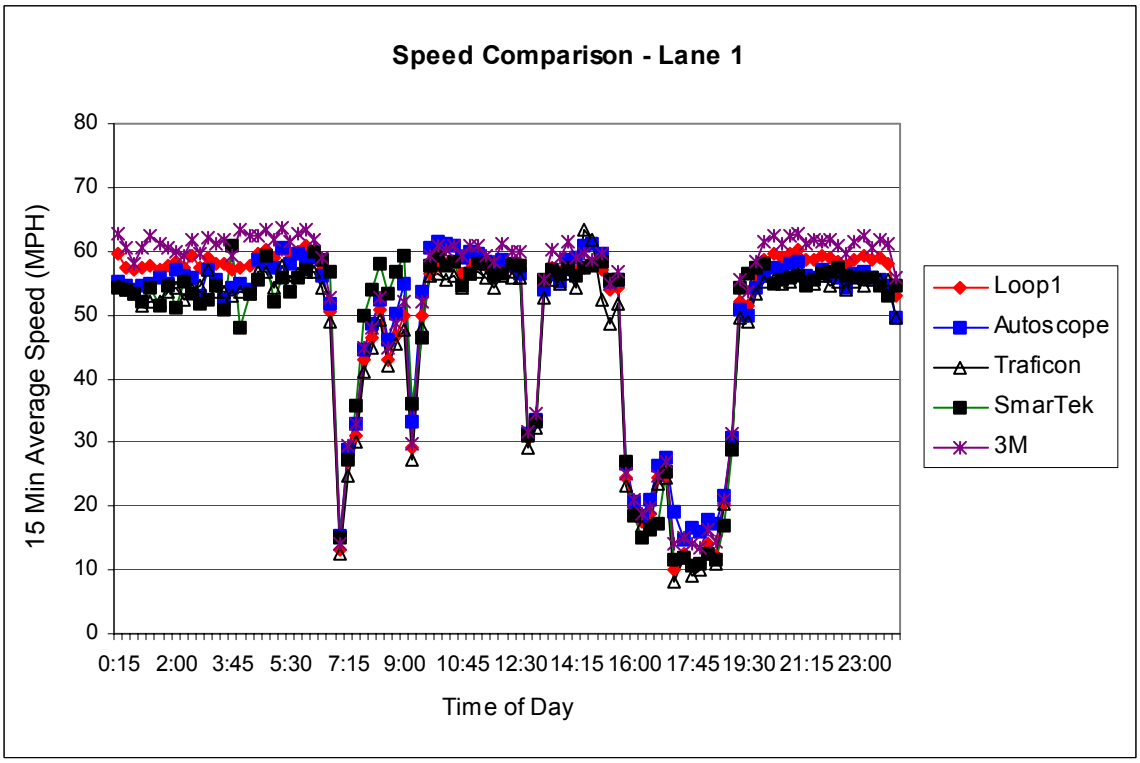
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

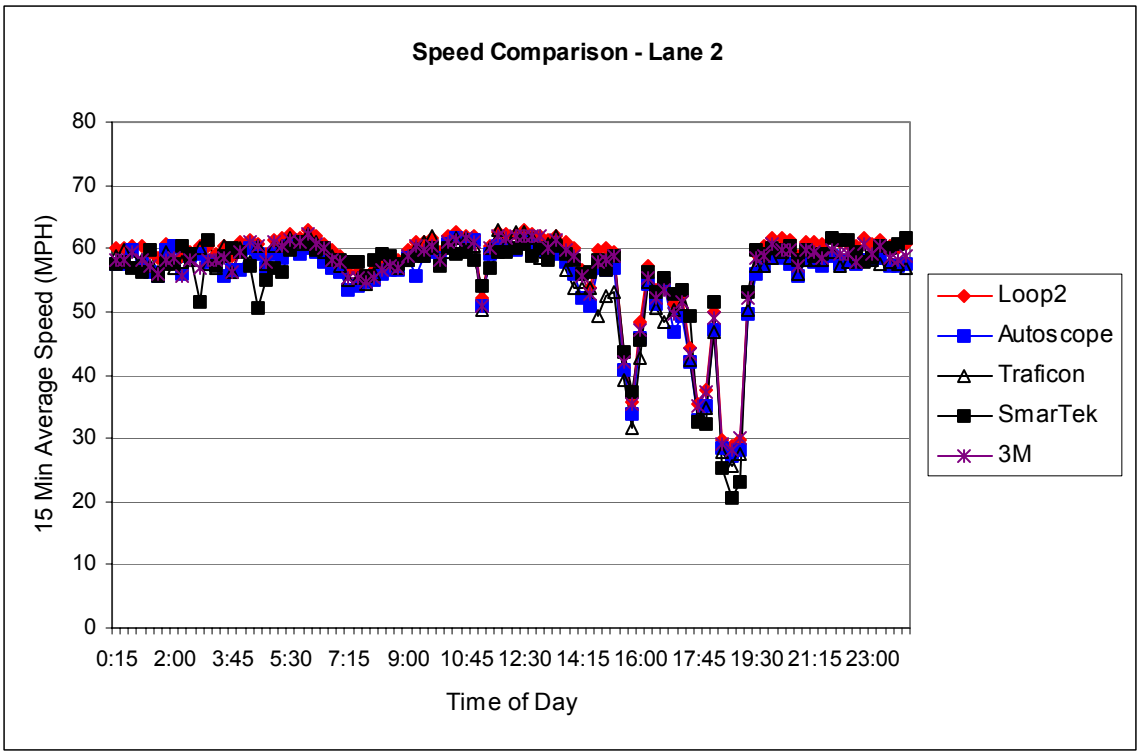
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

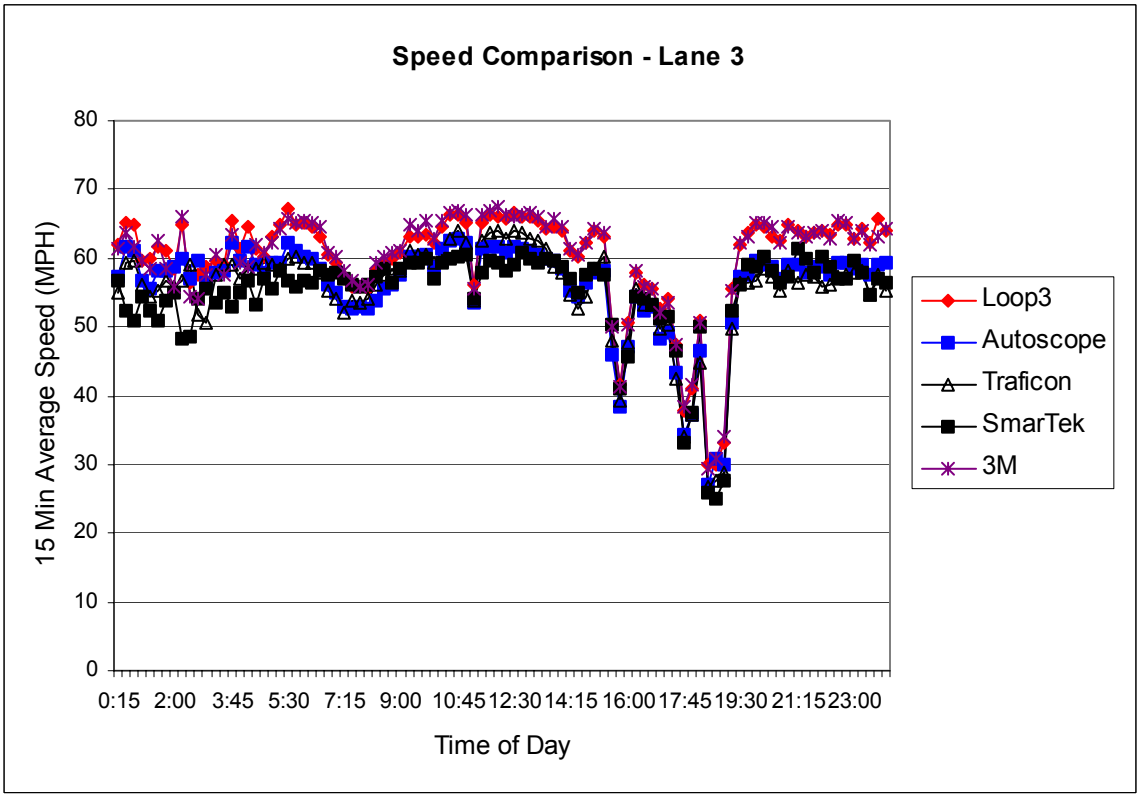

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M
ASIM DT 272


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M

24-Hour Test 13
Freeway - Volume
00:00 AM, January 3, 2002 to 24:00 PM, January 3, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	40	1	25,332	24,402	-3.7%	3.7%	143	0.9987
				2	22,627	21,071	-6.9%	7.0%	121	0.9943
				3	22,139	20,771	-6.2%	7.5%	169	0.9974
Traficon	Sidefire	35	40	1	25,332	24,740	-2.3%	2.3%	143	0.9995
				2	22,627	24,181	6.9%	7.9%	144	0.9605
				3	22,139	23,379	5.6%	7.5%	187	0.9821
SmarTek (3)	Sidefire	35	35	1	25,332	23,691	-6.5%	6.5%	133	0.9988
				2	22,627	18,605	-17.8%	17.8%	98	0.9927
				3	22,139	22,134	0.0%	7.8%	164	0.9933
3M	Under Ground			1	25,332	25,974	2.5%	2.5%	148	0.9996
				2	22,627	22,164	-2.0%	2.1%	125	0.9997
				3	22,139	21,588	-2.5%	2.5%	176	0.9998

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

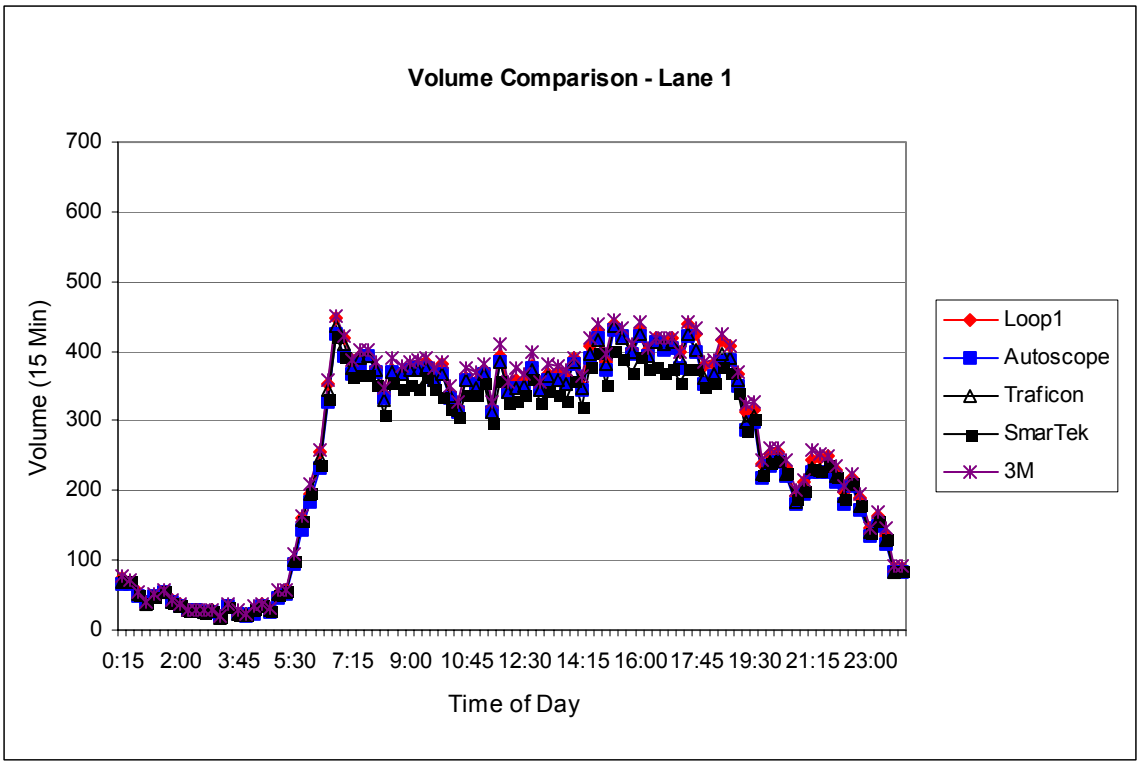
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

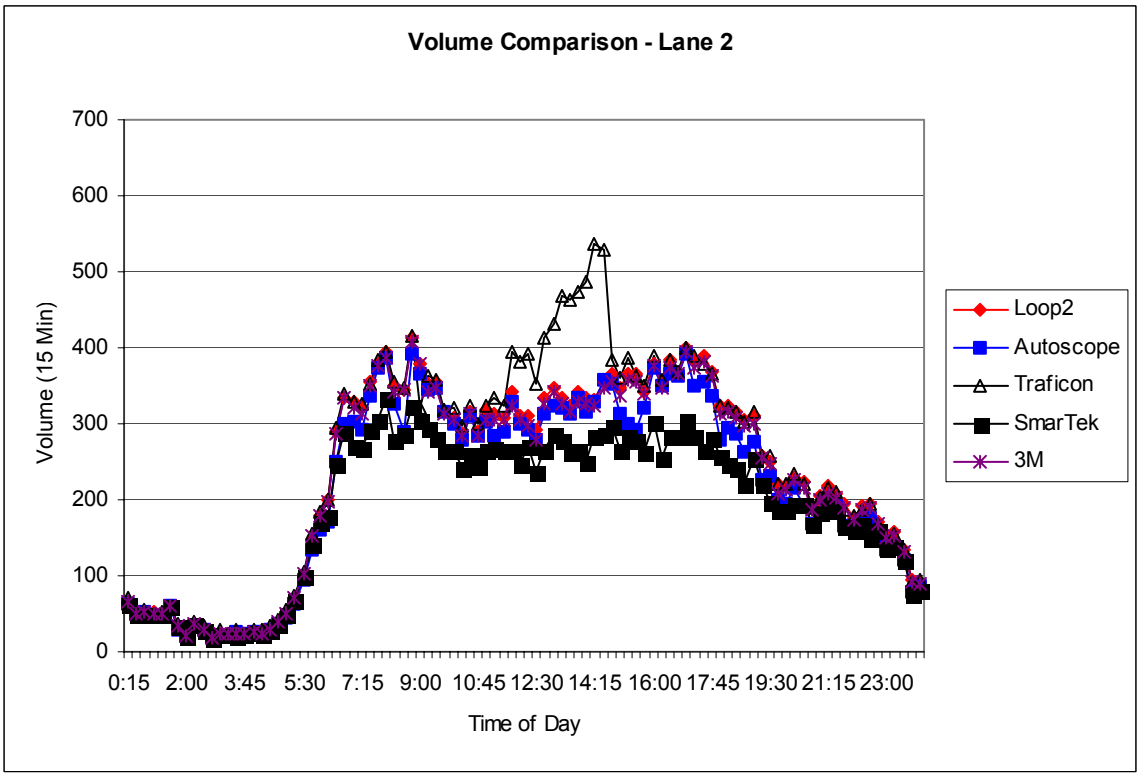
24-Hour Test 13
Freeway - Speed
00:00 AM, January 3, 2002 to 24:00 PM, January 3, 2002

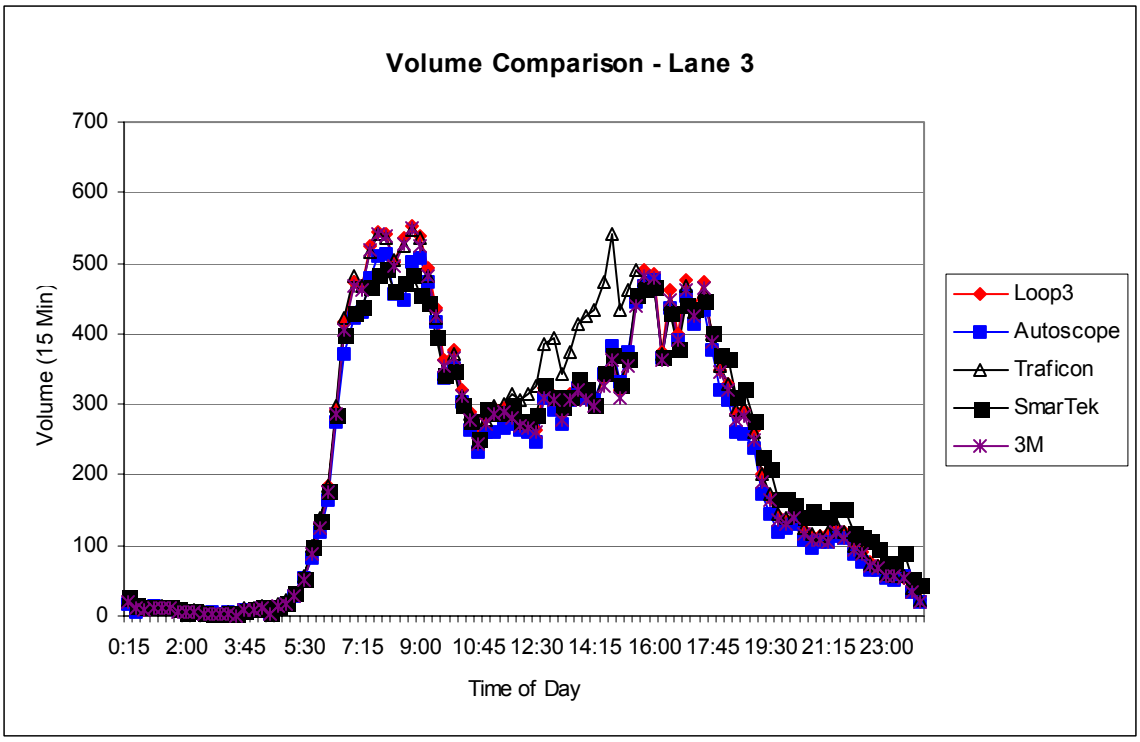
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	40	1	56	57	2.1%	2.2%	4	0.9893
				2	59	61	3.2%	3.2%	4	0.9797
				3	62	64	2.8%	2.9%	4	0.9683
Traficon	Sidefire	35	40	1	56	64	13.3%	13.3%	5	0.9729
				2	59	64	9.1%	9.2%	4	0.9074
				3	62	68	9.6%	9.9%	5	0.8233
SmarTek	Sidefire	35	35	1	56	56	0.4%	3.9%	4	0.8034
				2	59	60	1.2%	3.0%	3	0.7859
				3	62	63	1.1%	4.2%	3	0.6543
3M	Under Ground			1	56	59	4.4%	4.4%	5	0.9845
				2	59	58	-2.0%	2.0%	3	0.9871
				3	62	61	-1.1%	1.5%	4	0.9362

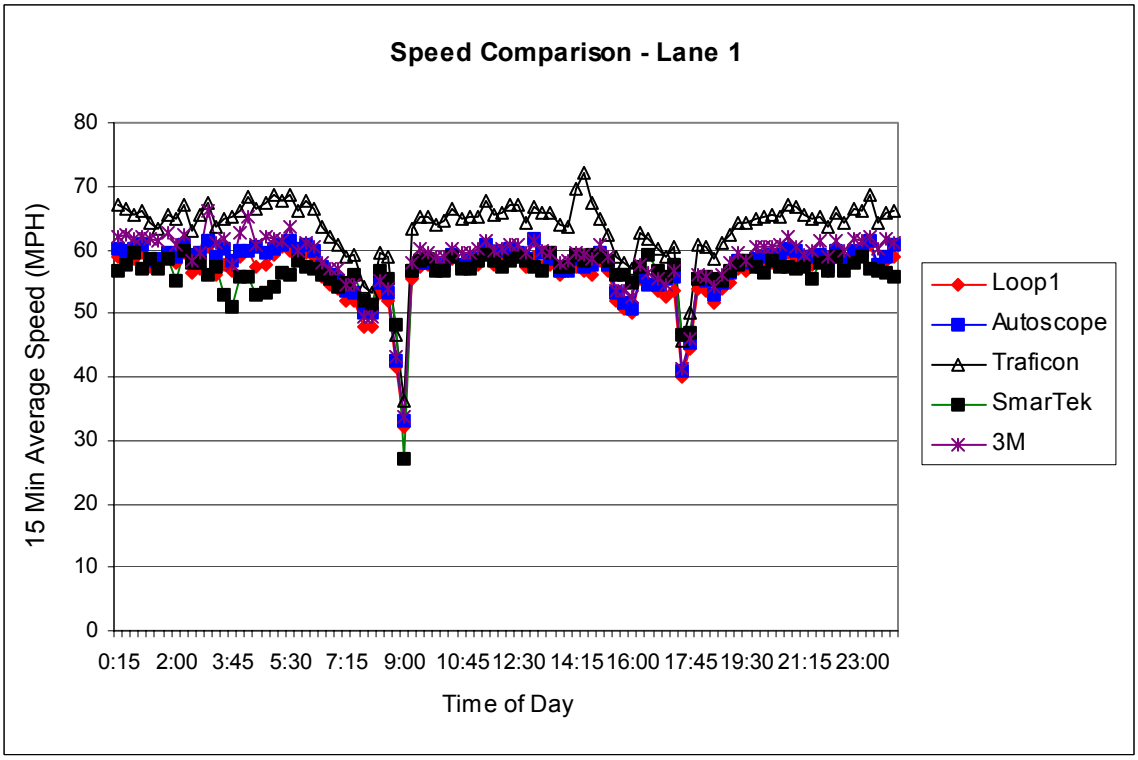
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

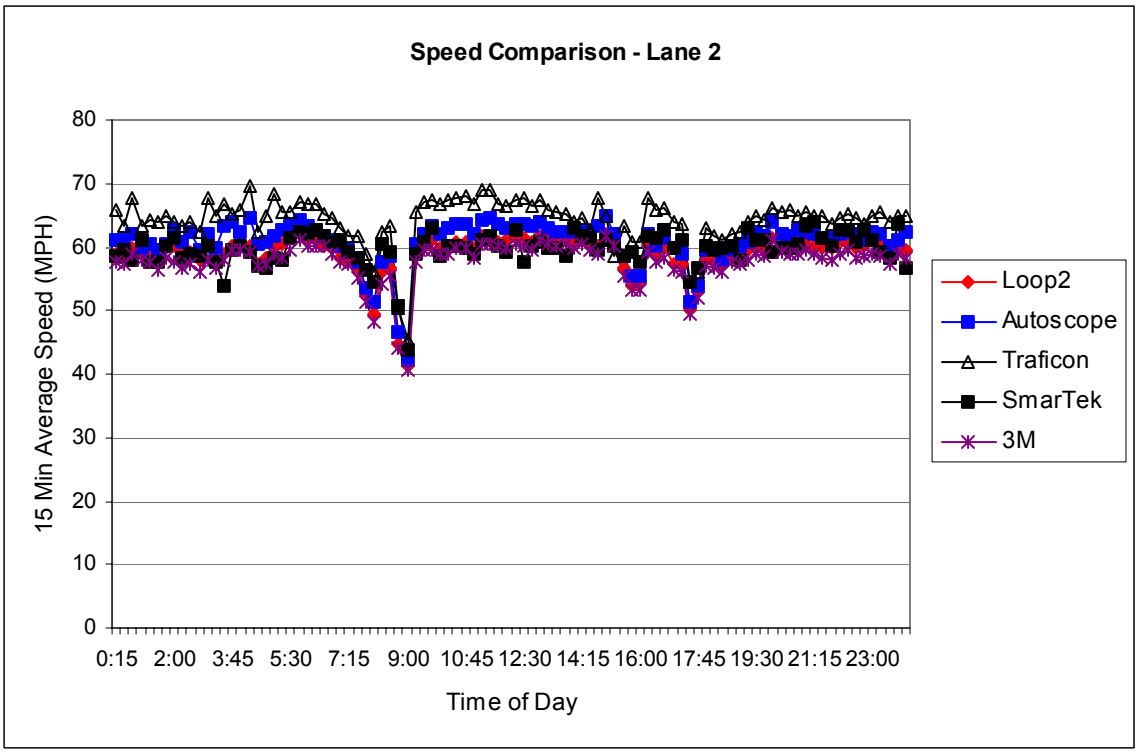
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

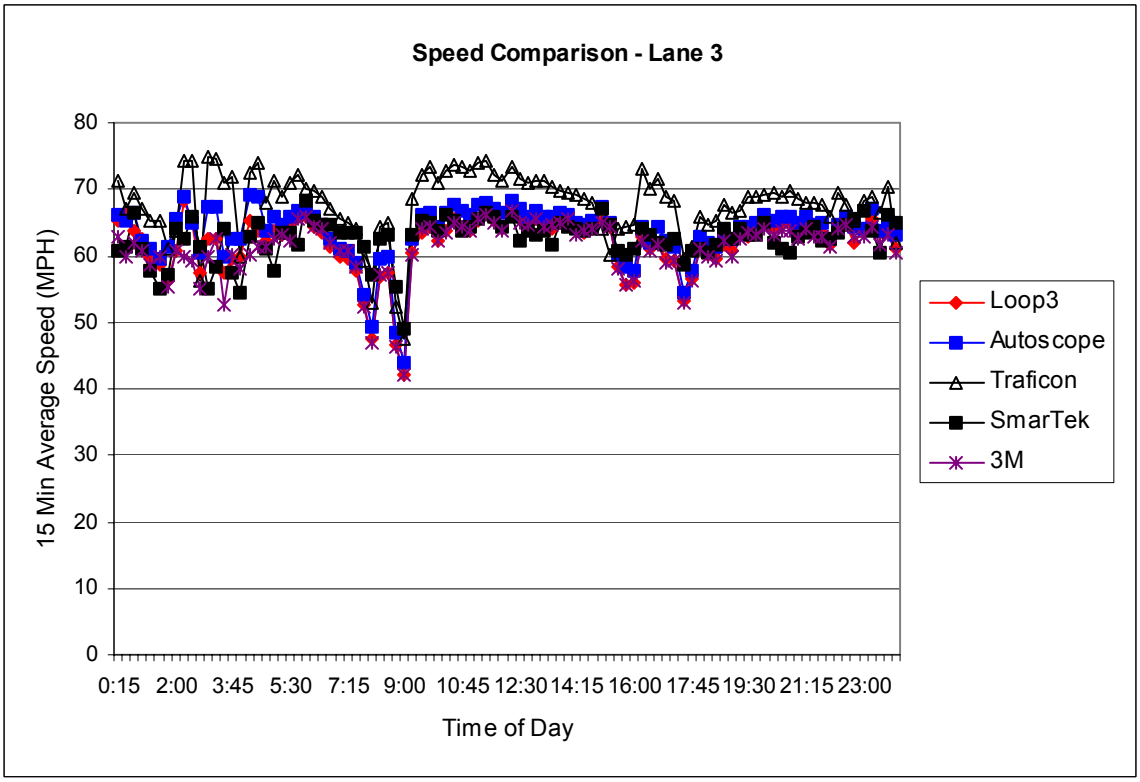

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M

24-Hour Test 14
Freeway - Volume
00:00 AM, January 14, 2002 to 24:00 PM, January 14, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	35	1	22,300	22,191	-0.5%	6.5%	137	0.9881
				2	20,002	21,831	9.1%	11.9%	136	0.9412
				3	20,384	20,159	-1.1%	4.5%	163	0.9973
Traficon	Sidefire	35	35	1	22,300	22,022	-1.2%	4.5%	130	0.9910
				2	20,002	21,916	9.6%	9.6%	121	0.9732
				3	20,384	21,800	6.9%	7.1%	172	0.9959
SmarTek (3)	Sidefire	35	30	1	22,300	21,829	-2.1%	4.7%	127	0.9936
				2	20,002	18,589	-7.1%	7.7%	101	0.9967
				3	20,384	18,599	-8.8%	10.8%	142	0.9980
3M	Under Ground			1	22,300	22,997	3.1%	3.2%	136	0.9996
				2	20,002	19,716	-1.4%	1.7%	114	0.9995
				3	20,384	20,016	-1.8%	1.8%	163	0.9999

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

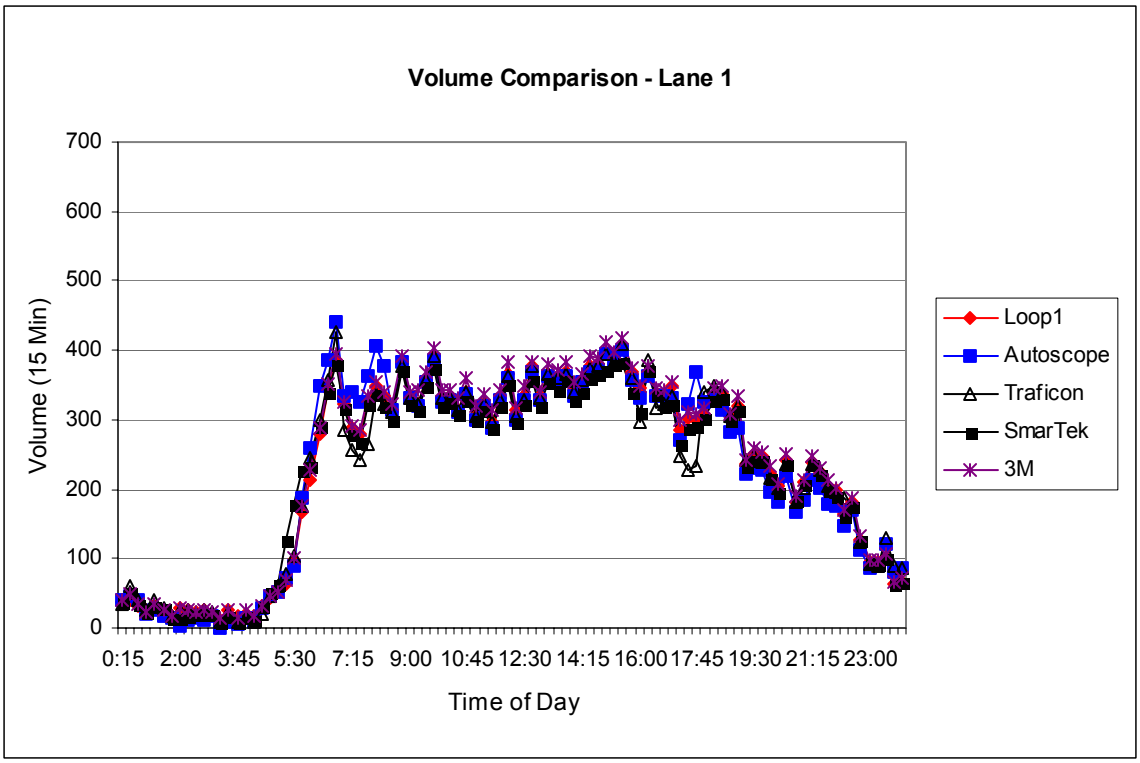
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

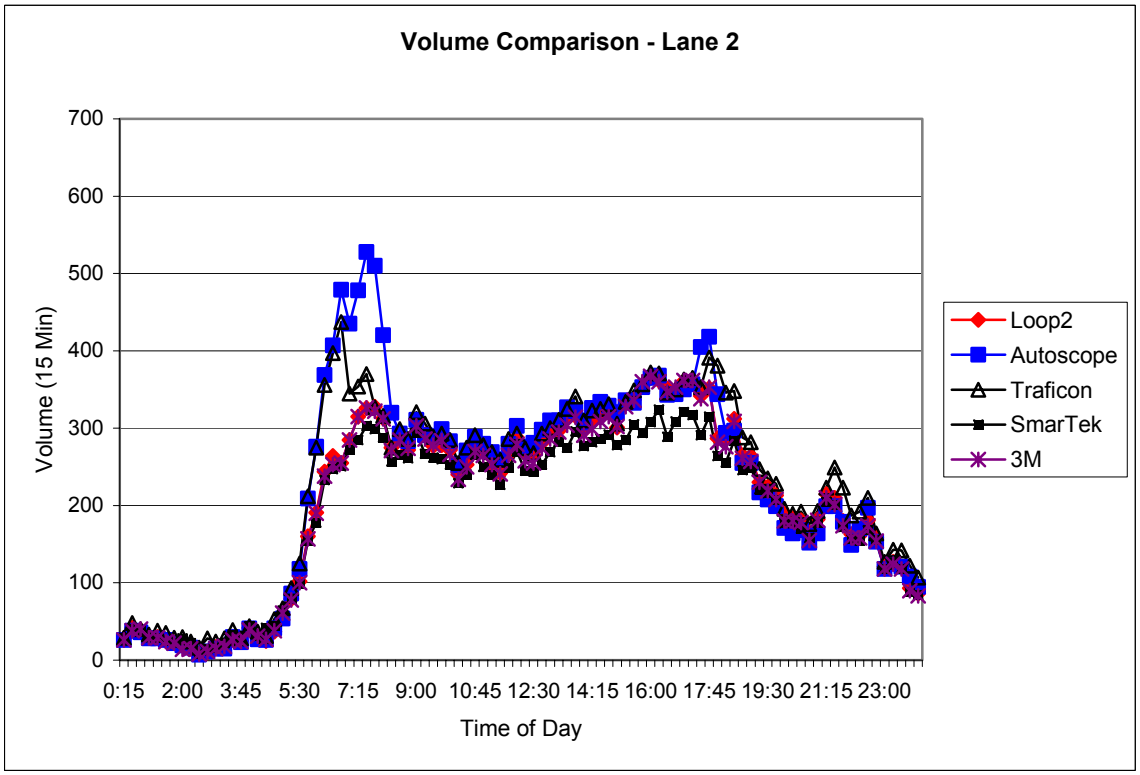
24-Hour Test 14
Freeway - Speed
00:00 AM, January 14, 2002 to 24:00 PM, January 14, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	35	1	45	47	5.7%	8.2%	12	0.9823
				2	50	52	3.7%	4.5%	10	0.9803
				3	53	55	4.8%	5.5%	10	0.9386
Traficon	Sidefire	35	35	1	45	49	10.0%	9.9%	14	0.9911
				2	50	51	2.3%	3.4%	9	0.9821
				3	53	52	-2.6%	5.5%	9	0.9083
SmarTek	Sidefire	35	30	1	45	41	-7.5%	12.3%	15	0.8577
				2	50	44	-12.8%	16.4%	15	0.7732
				3	53	50	-5.9%	10.7%	13	0.7745
3M	Under Ground			1	45	48	6.8%	7.3%	13	0.9859
				2	50	48	-3.1%	3.1%	9	0.9879
				3	53	51	-3.4%	4.0%	10	0.9418

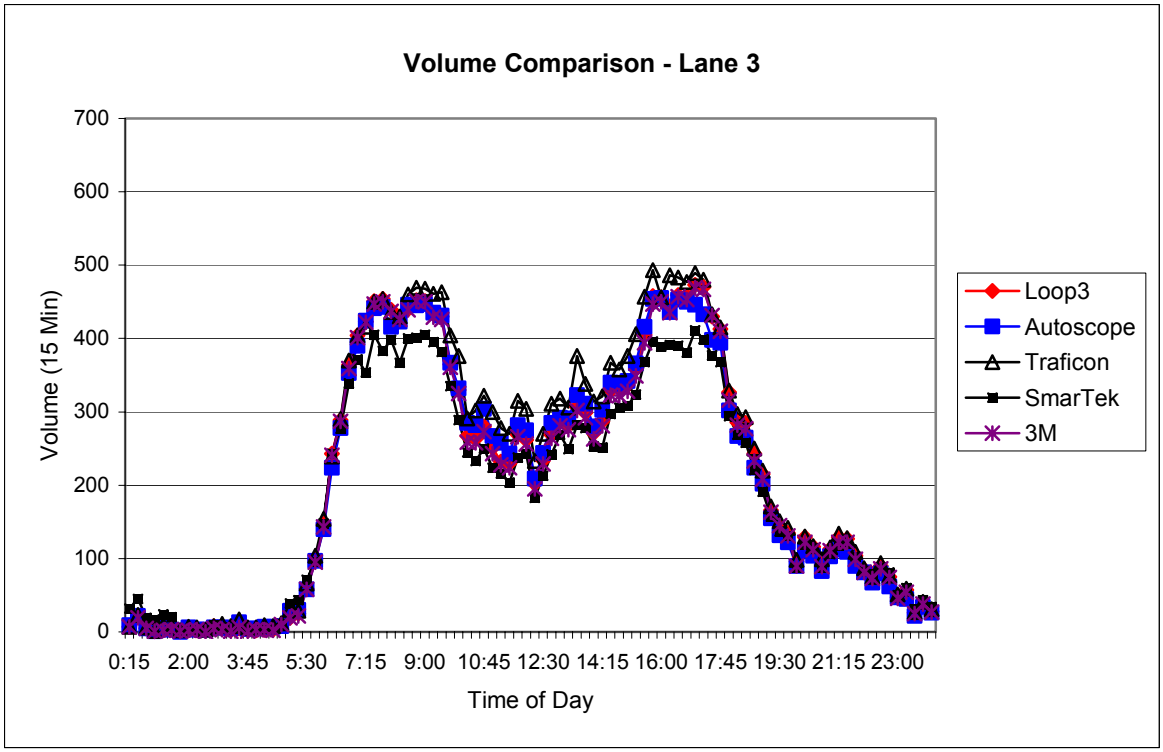
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

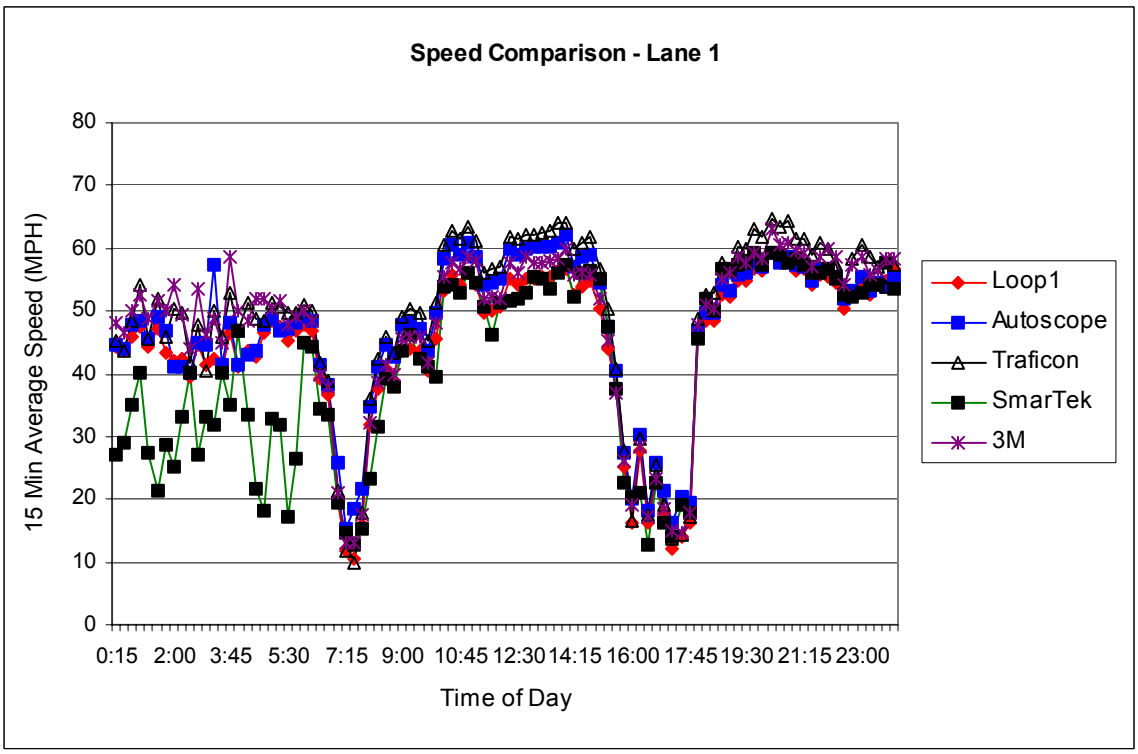
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))



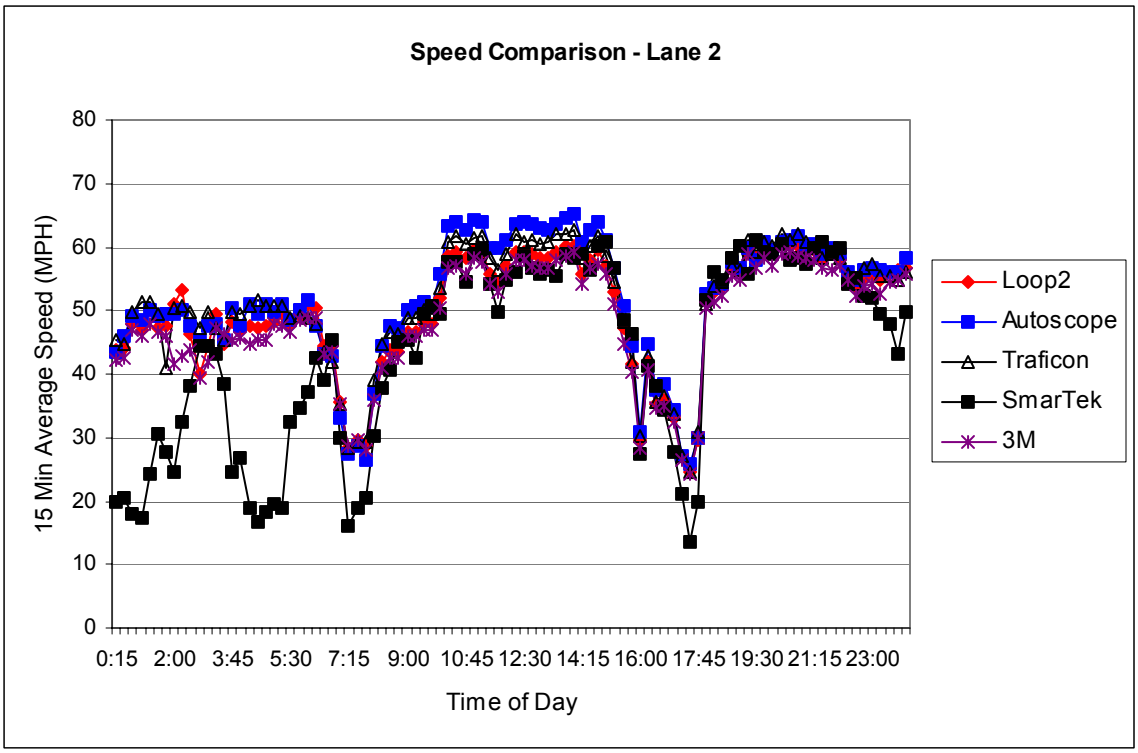


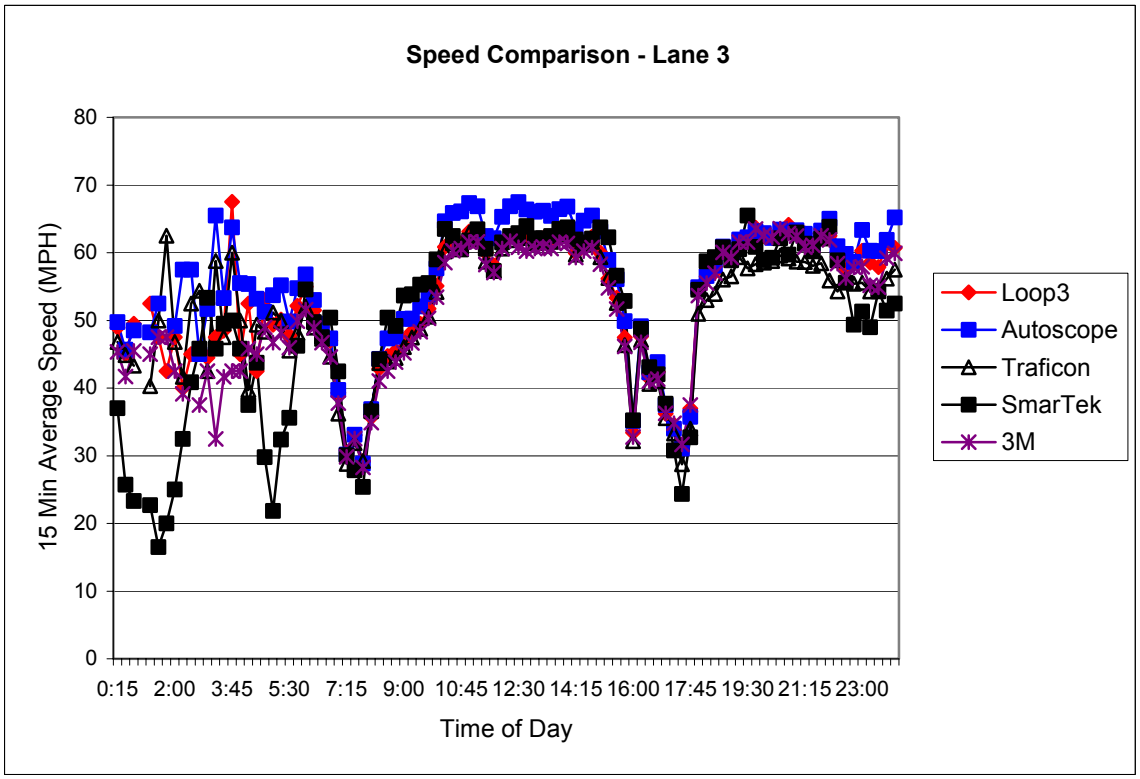
Note: Heavy snow between 00:00 AM to 5:00 AM





Note: Heavy snow between 00:00 AM to 5:00 AM





Note: Heavy snow between 00:00 AM to 5:00 AM

24-Hour Test 15
Freeway - Volume
12:00 AM, January 16, 2002 to 12:00 PM, January 17, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	30	1	26,184	24,656	-5.8%	5.8%	150	0.9965
				2	23,271	21,444	-7.9%	8.6%	128	0.9871
				3	23,366	23,632	1.1%	13.2%	194	0.9771
Traficon	Sidefire	35	30	1	26,184	25,763	-1.6%	1.9%	150	0.9996
				2	23,271	26,251	12.8%	12.8%	150	0.9837
				3	23,366	26,567	13.7%	14.6%	202	0.9869
SmarTek (3)	Sidefire	35	25	1	26,184	24,712	-5.6%	5.6%	141	0.9992
				2	23,271	21,383	-8.1%	8.2%	115	0.9980
				3	23,366	20,226	-13.4%	13.5%	153	0.9973
3M	Under Ground			1	26,184	26,848	2.5%	2.5%	154	0.9997
				2	23,271	22,751	-2.2%	2.3%	127	0.9996
				3	23,366	22,798	-2.4%	2.4%	179	0.9999

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

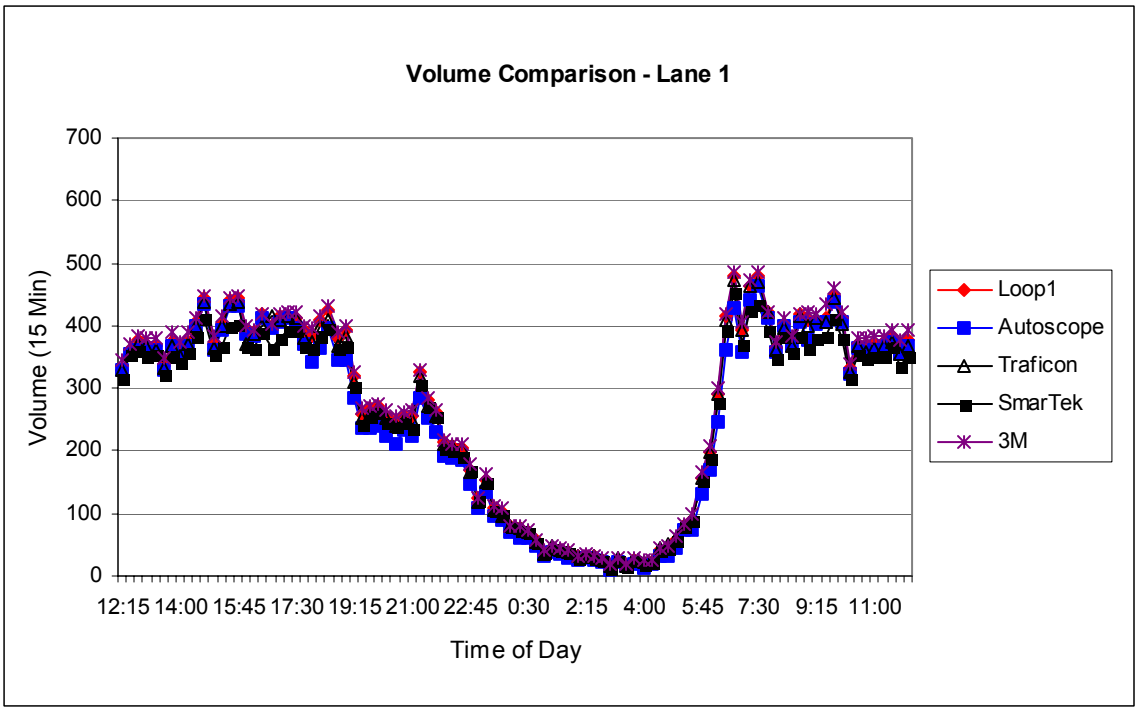
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

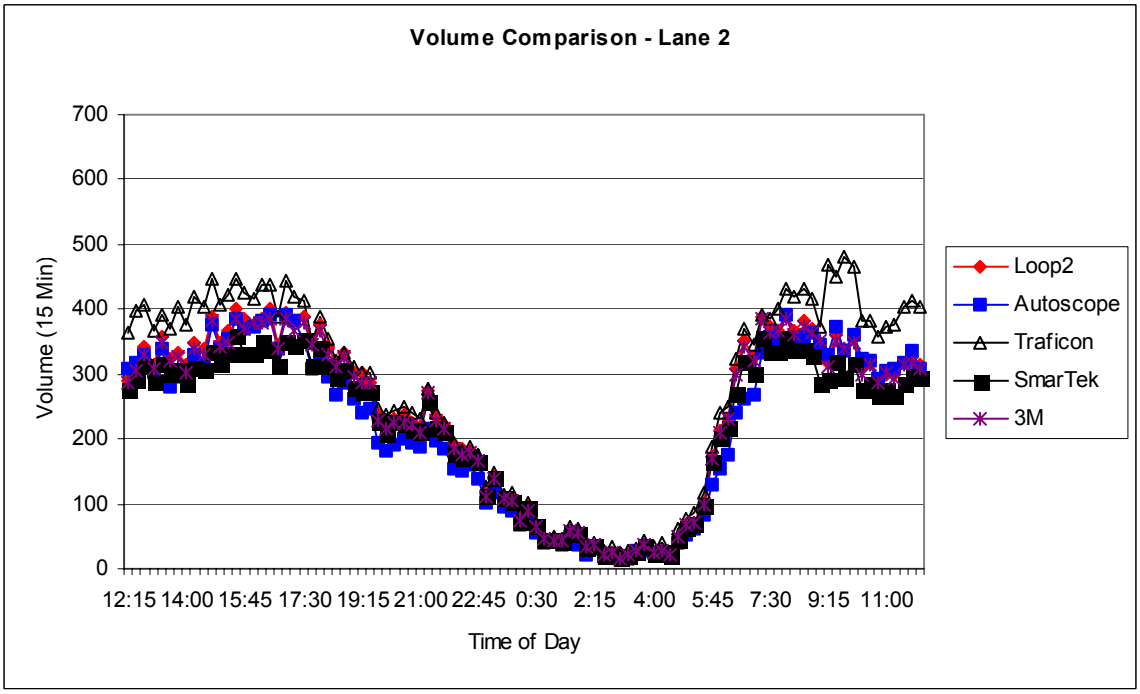
24-Hour Test 15
Freeway - Speed
12:00 AM, January 16, 2002 to 12:00 PM, January 17, 2002

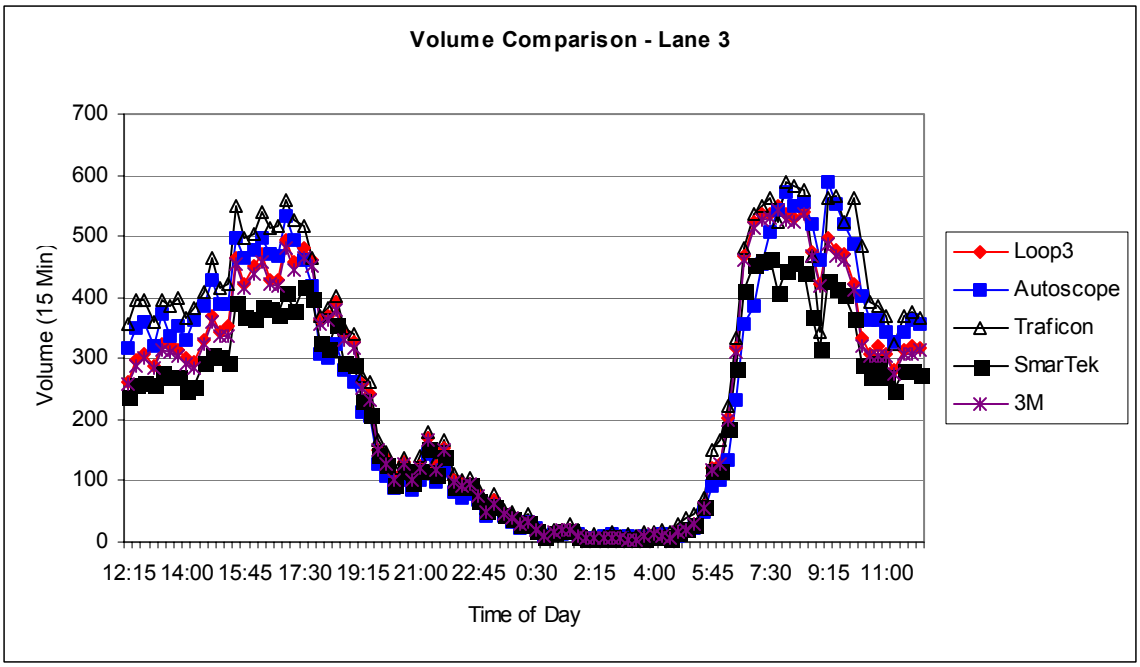
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	30	1	55	54	-2.2%	3.1%	6	0.9638
				2	59	62	5.0%	5.1%	5	0.9505
				3	62	66	7.8%	7.9%	6	0.8778
Traficon	Sidefire	35	30	1	55	57	3.5%	3.6%	7	0.9806
				2	59	56	-4.7%	4.8%	5	0.9693
				3	62	56	-8.9%	8.9%	6	0.9107
SmarTek	Sidefire	35	25	1	55	59	6.4%	8.9%	6	0.7796
				2	59	60	2.2%	5.0%	4	0.7513
				3	62	63	2.5%	7.2%	6	0.6301
3M	Under Ground			1	55	58	5.0%	4.9%	7	0.9890
				2	59	57	-2.1%	2.2%	5	0.9893
				3	62	61	-1.2%	1.4%	6	0.9842

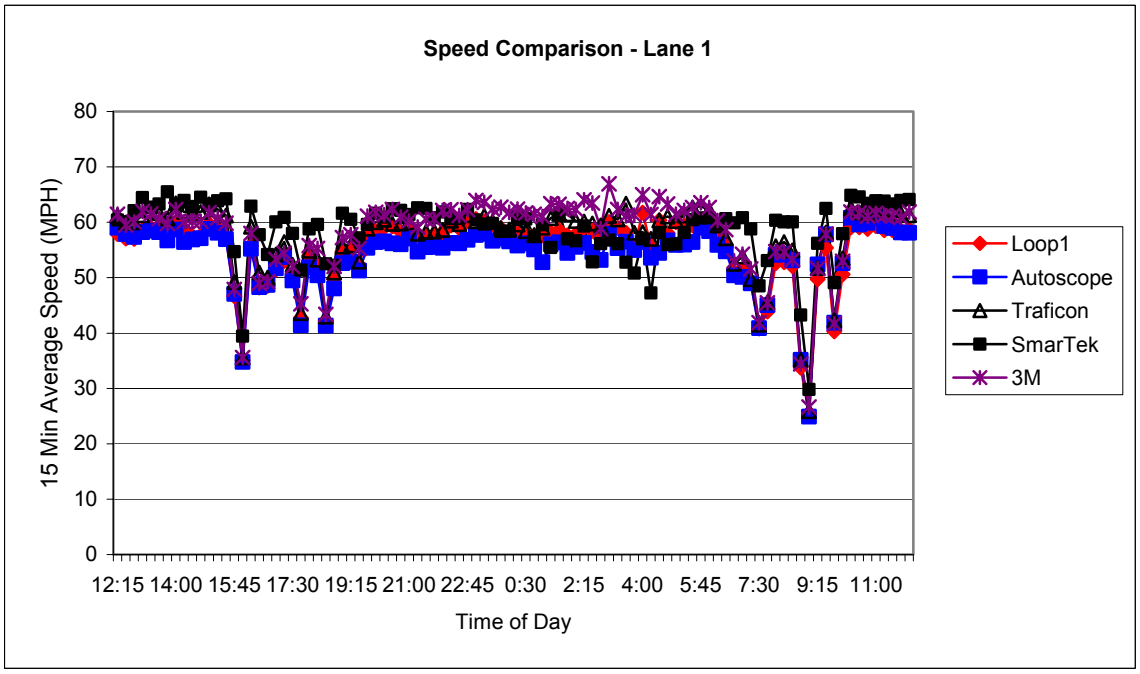
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

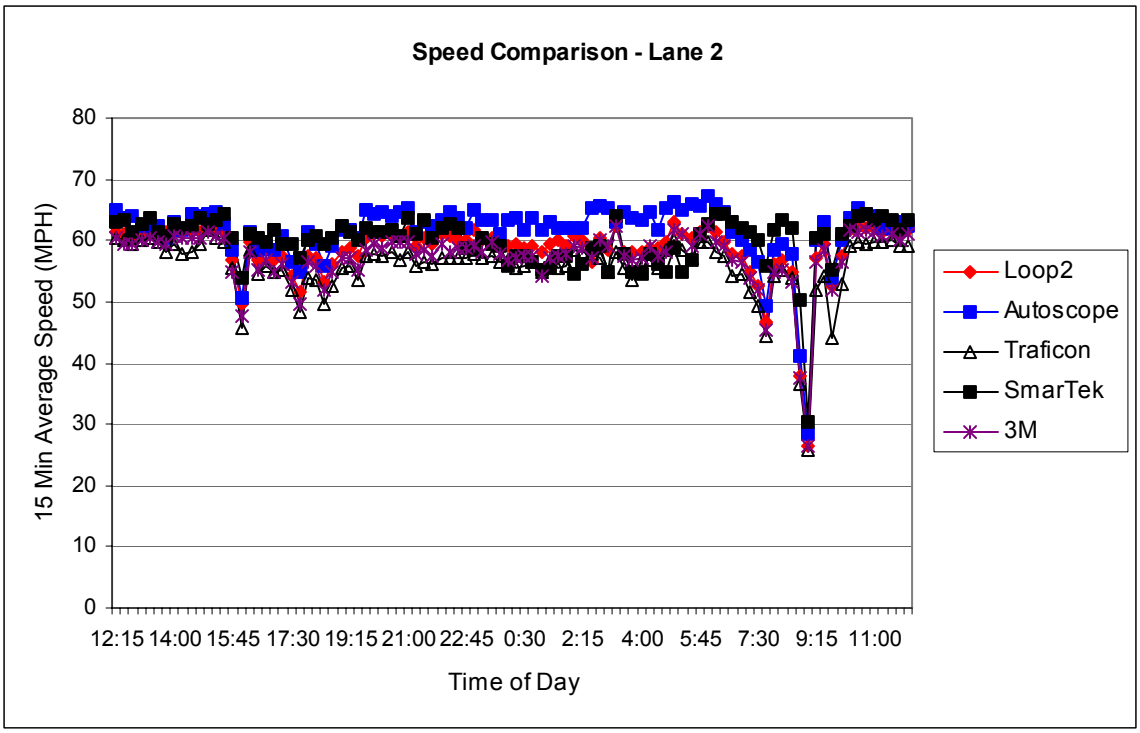
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

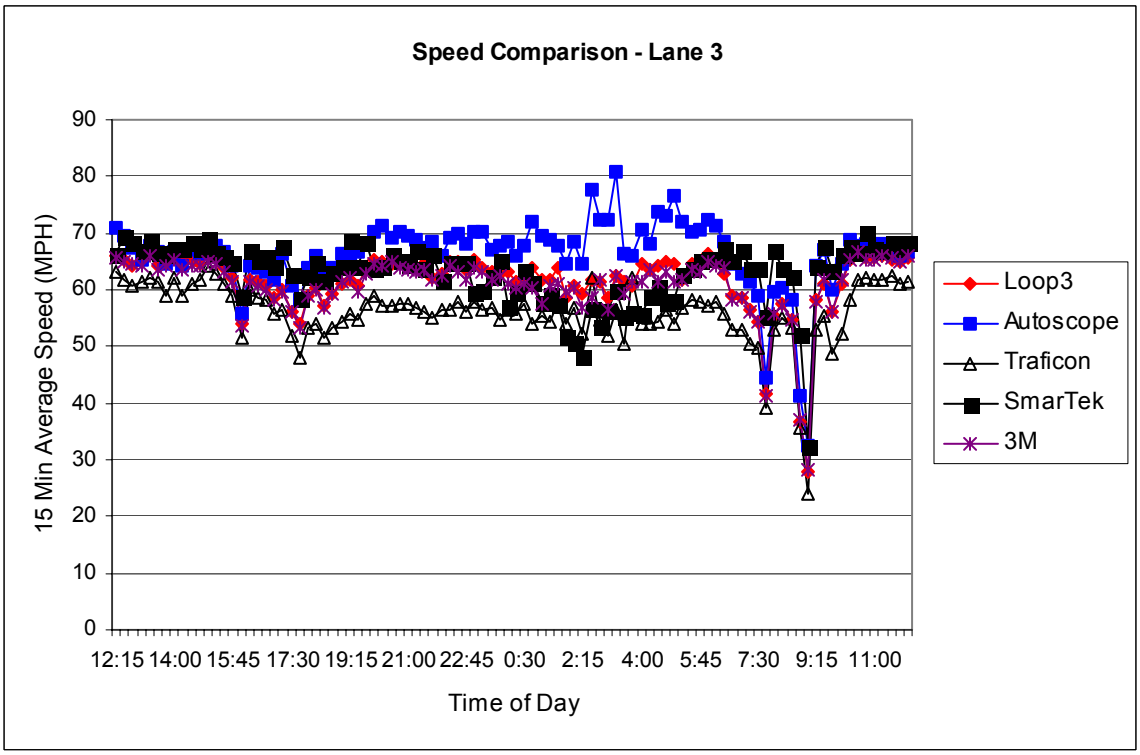

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
90
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M

24-Hour Test 16
Freeway - Volume
00:00 AM, January 18, 2002 to 24:00 PM, January 18, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	25	1	25,834	24,503	-5.2%	5.2%	145	0.9976
				2	24,230	23,695	-2.2%	4.6%	133	0.9938
				3	25,730	26,285	2.2%	6.3%	201	0.9949
Traficon	Sidefire	35	25	1	25,834	24,498	-5.2%	5.4%	144	0.9883
				2	24,230	26,661	10.0%	12.3%	153	0.9702
				3	25,730	27,254	5.9%	10.4%	197	0.9822
SmarTek (3)	Sidefire	35	20	1	25,834	23,266	-9.9%	10.0%	129	0.9973
				2	24,230	22,132	-8.7%	9.3%	115	0.9831
				3	25,730	21,612	-16.0%	16.2%	153	0.9935
3M	Under Ground			1	25,834	26,410	2.2%	2.2%	149	0.9997
				2	24,230	23,784	-1.8%	2.0%	130	0.9995
				3	25,730	25,173	-2.2%	2.3%	190	0.9997

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

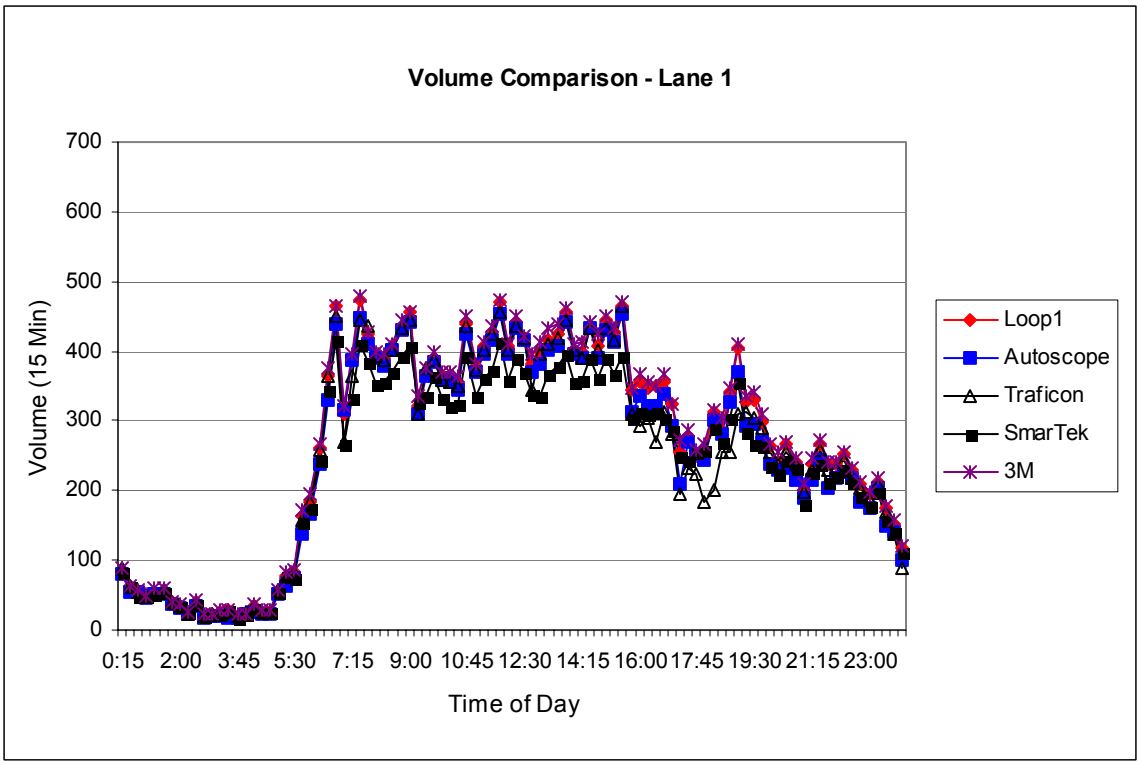
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

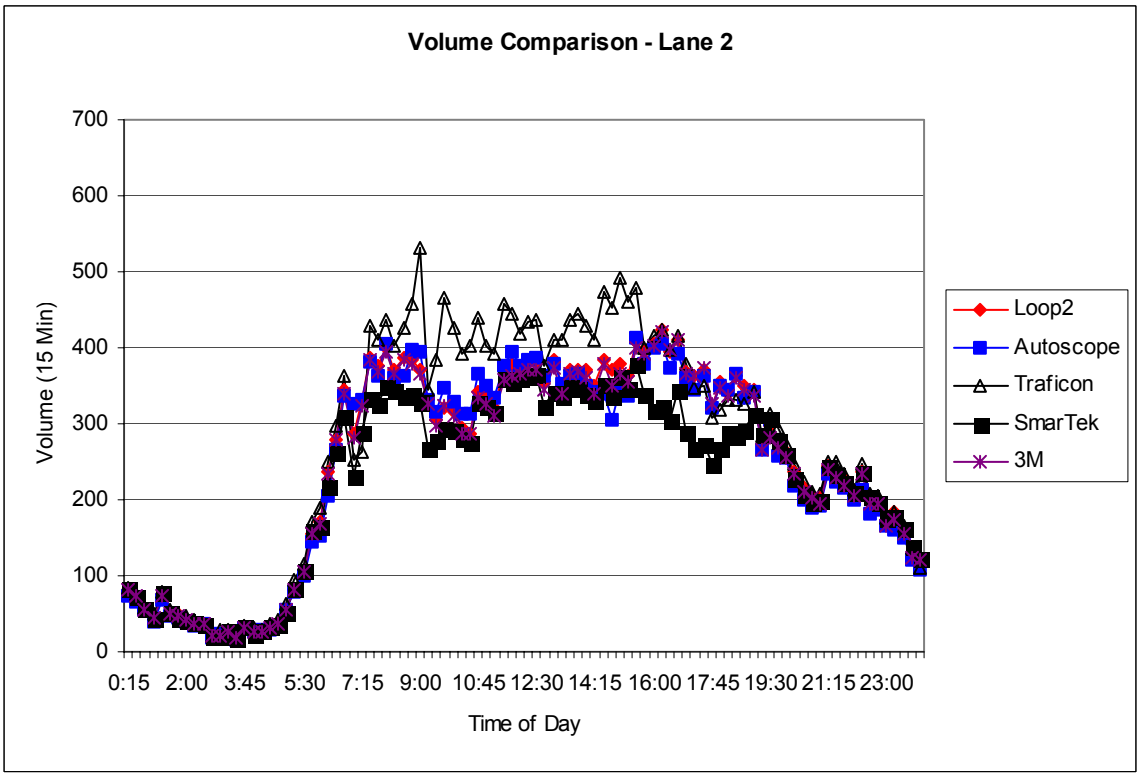
24-Hour Test 16
Freeway - Speed
00:00 AM, January 18, 2002 to 24:00 PM, January 18, 2002

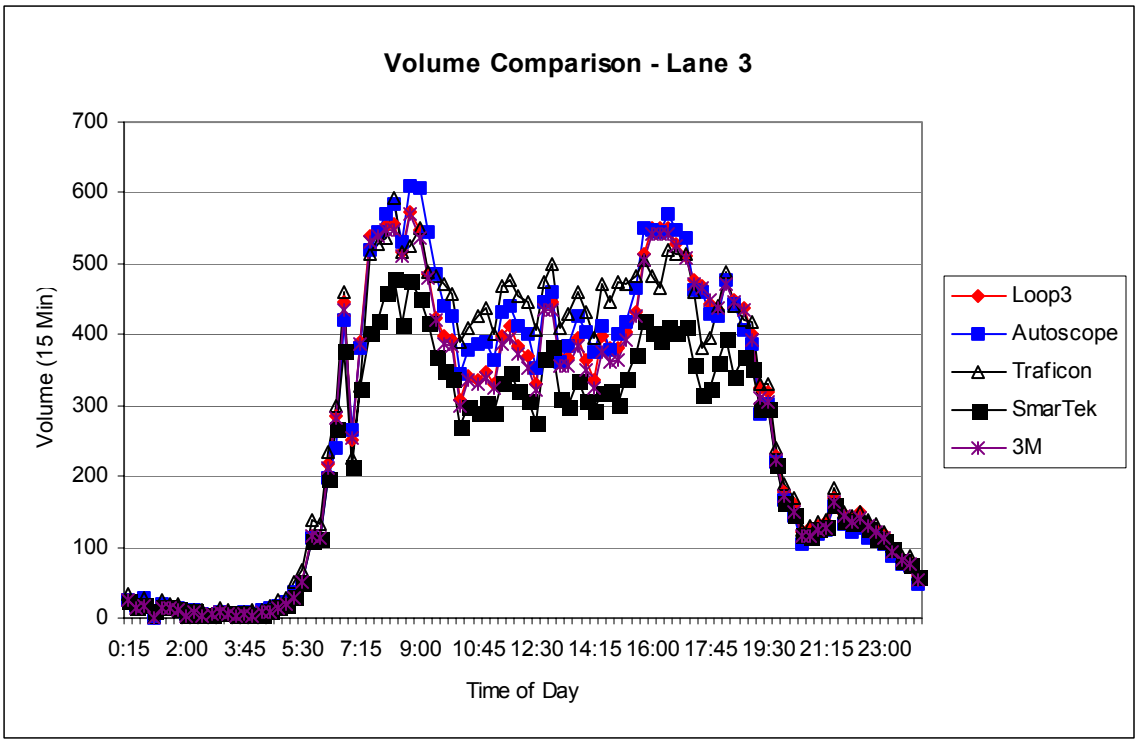
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Sidefire	35	25	1	49	49	0.0%	7.2%	14	0.9878
				2	54	56	3.9%	4.4%	12	0.9896
				3	57	61	7.1%	7.6%	12	0.9840
Traficon	Sidefire	35	25	1	49	47	-5.2%	5.8%	15	0.9940
				2	54	50	-7.3%	7.4%	11	0.9892
				3	57	50	-12.3%	12.2%	10	0.9820
SmarTek	Sidefire	35	20	1	49	48	-2.0%	6.9%	15	0.9674
				2	54	54	0.1%	7.7%	11	0.9201
				3	57	60	5.3%	9.8%	9	0.8959
3M	Under Ground			1	49	52	4.8%	5.8%	16	0.9985
				2	54	53	-1.9%	2.1%	11	0.9986
				3	57	57	-0.7%	1.6%	11	0.9926

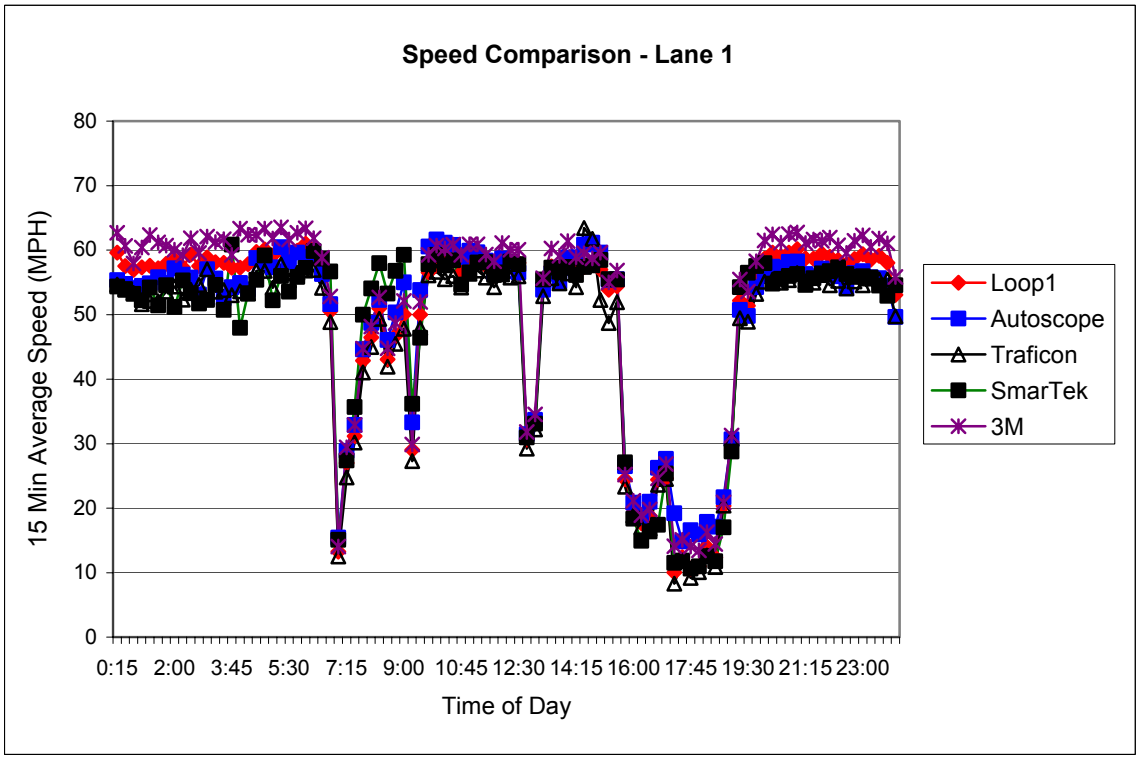
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

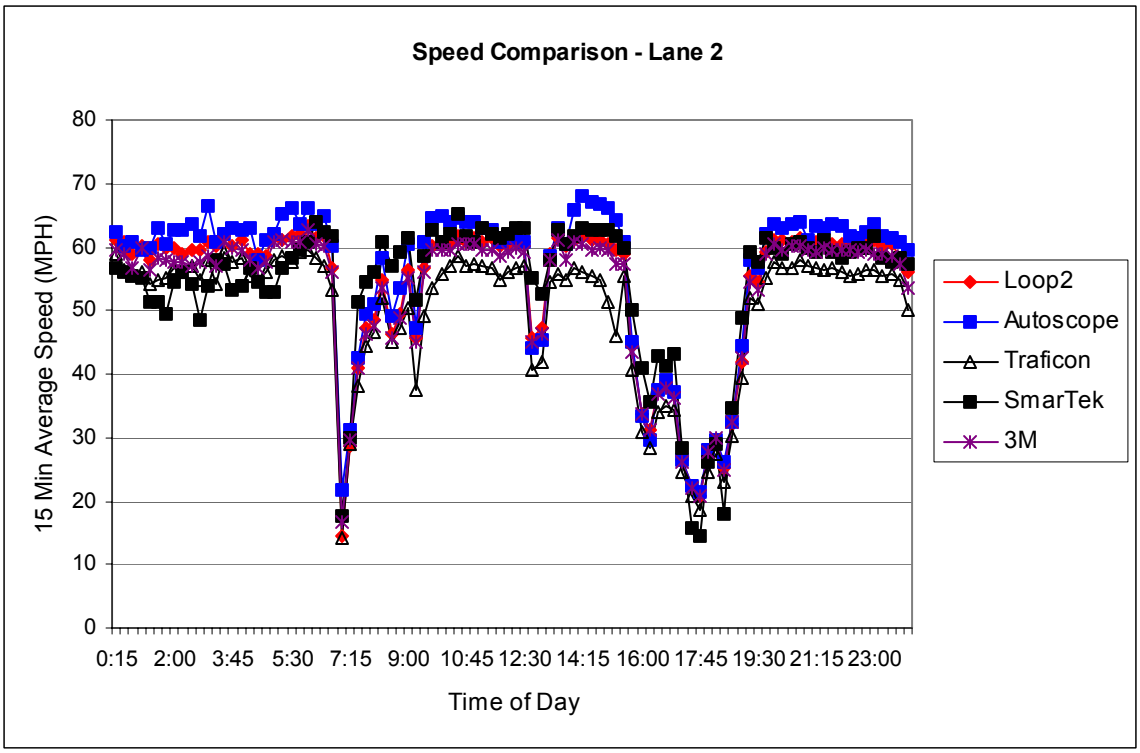
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

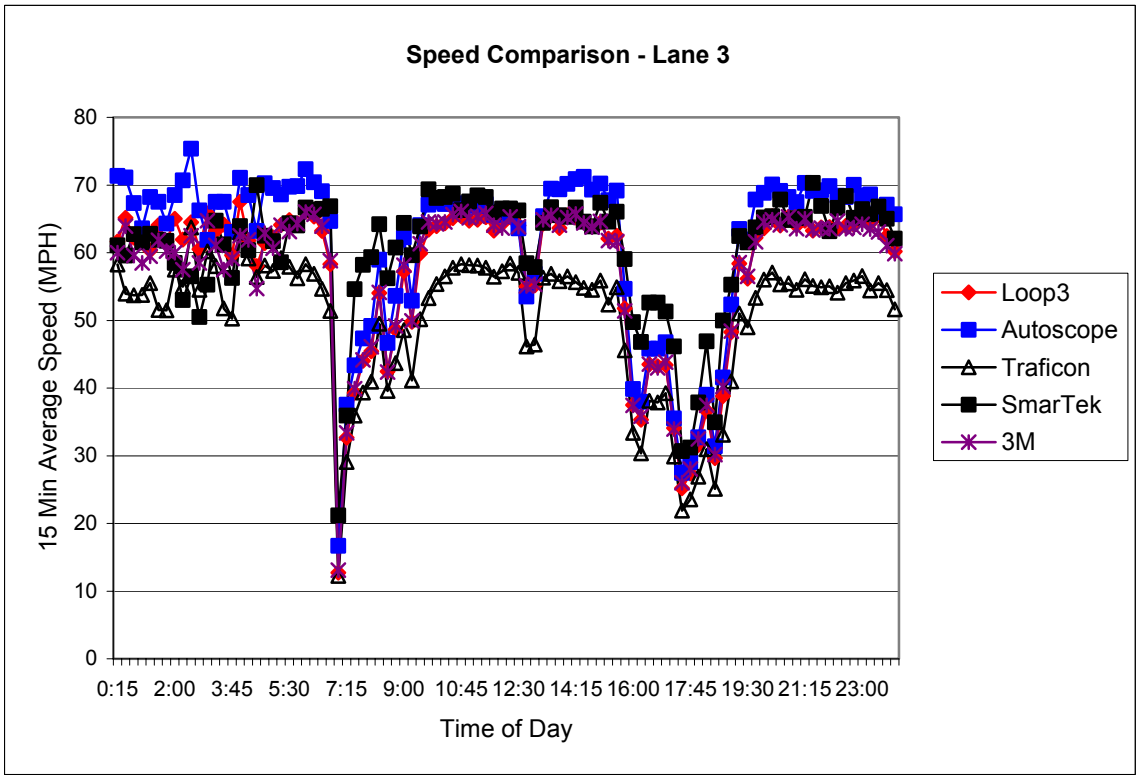

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Autoscope
Traficon
SmarTek
3M


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Autoscope
Traficon
SmarTek
3M

24-Hour Test 17
Freeway - Volume
00:00 AM, February 18, 2002 to 24:00 PM, February 18, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	25	1	24,389	24,274	-0.5%	1.8%	150	0.9989
				2	20,905	21,012	0.5%	2.3%	124	0.9984
				3	19,121	18,857	-1.4%	2.9%	151	0.9993

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

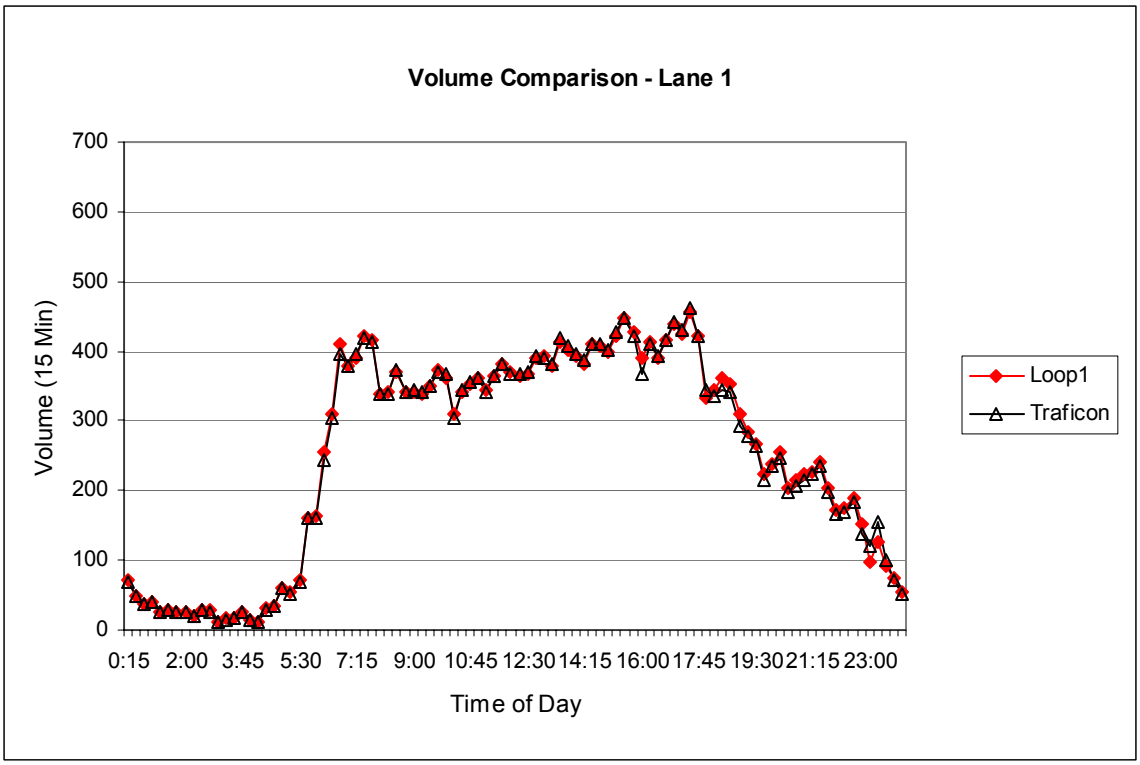
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

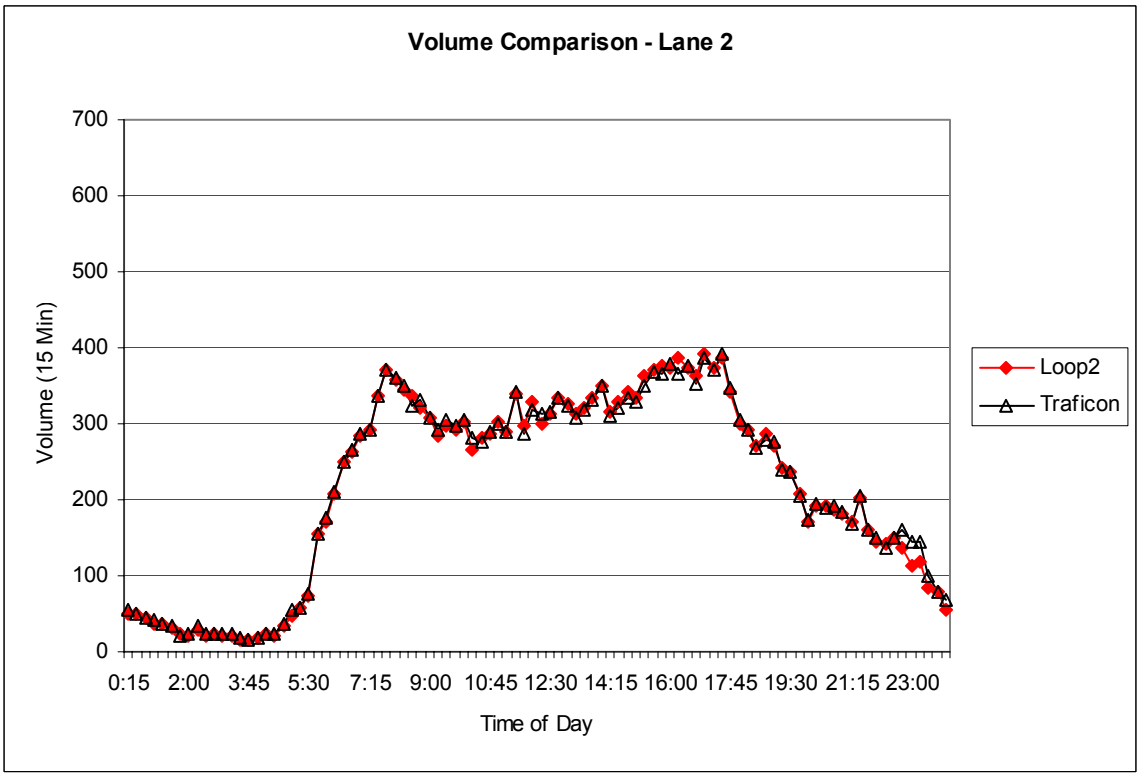
24-Hour Test 17
Freeway - Speed
00:00 AM, February 18, 2002 to 24:00 PM, February 18, 2002

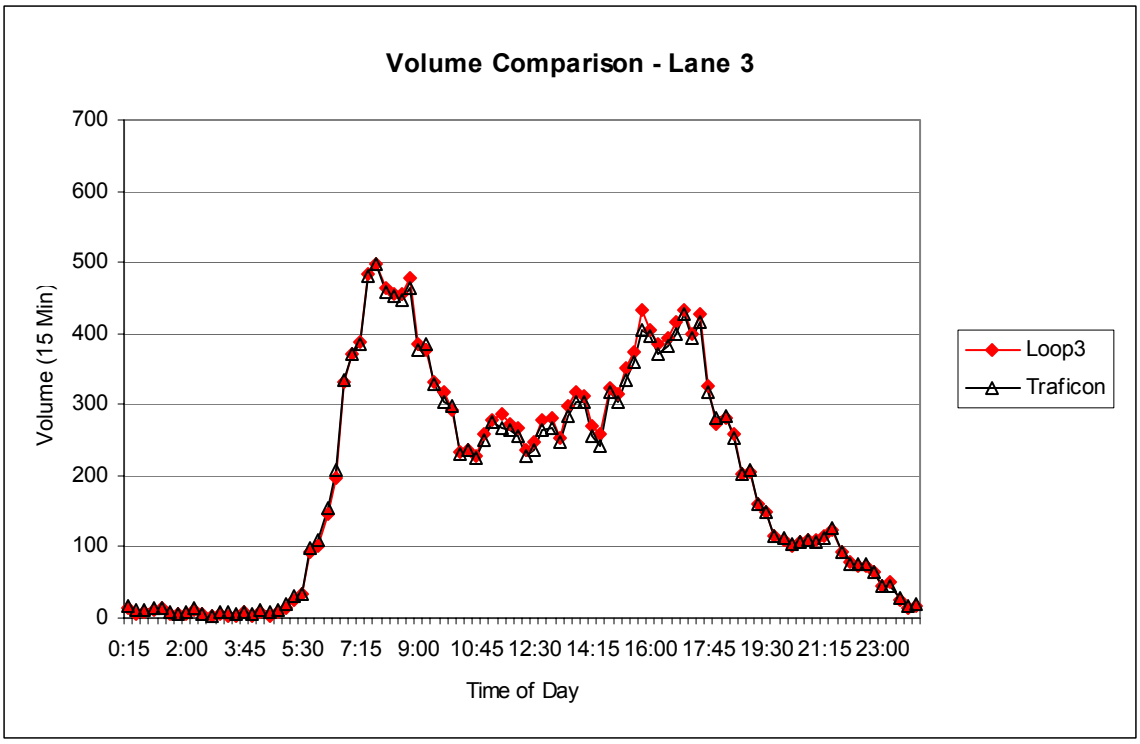
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	25	1	58	64	10.3%	11.1%	4	0.6689
				2	61	62	2.5%	3.5%	3	0.7756
				3	64	61	-4.2%	5.0%	4	0.6496

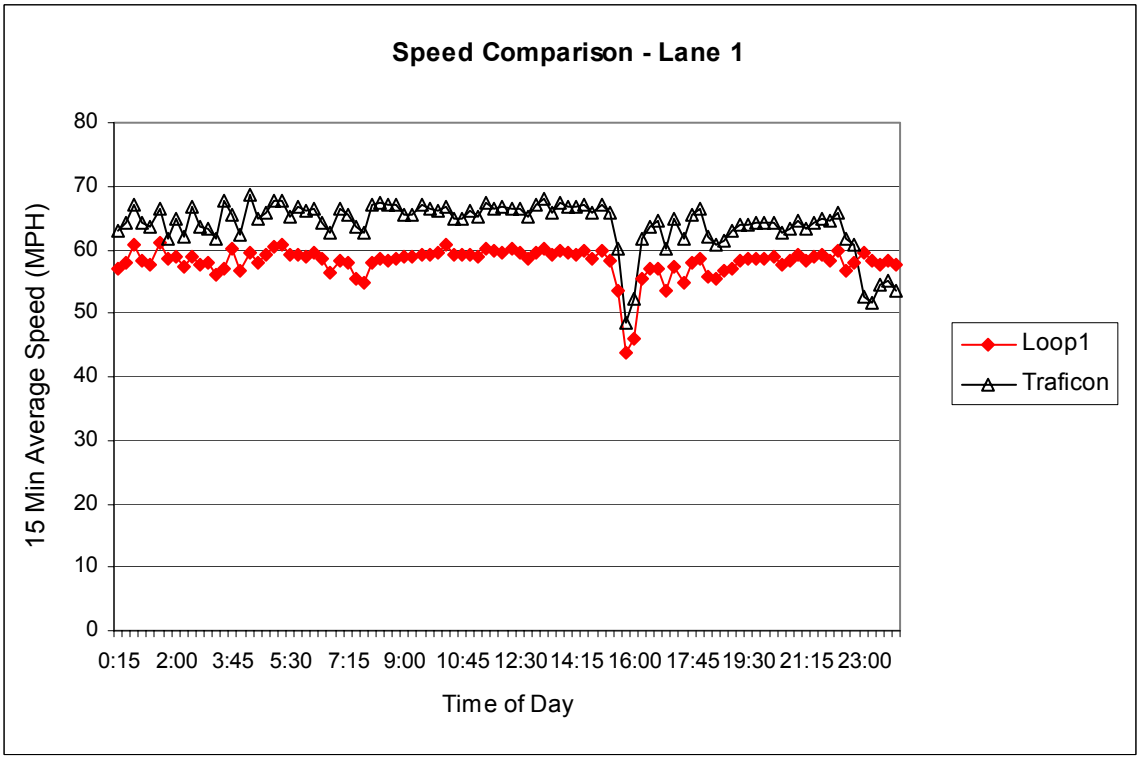
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

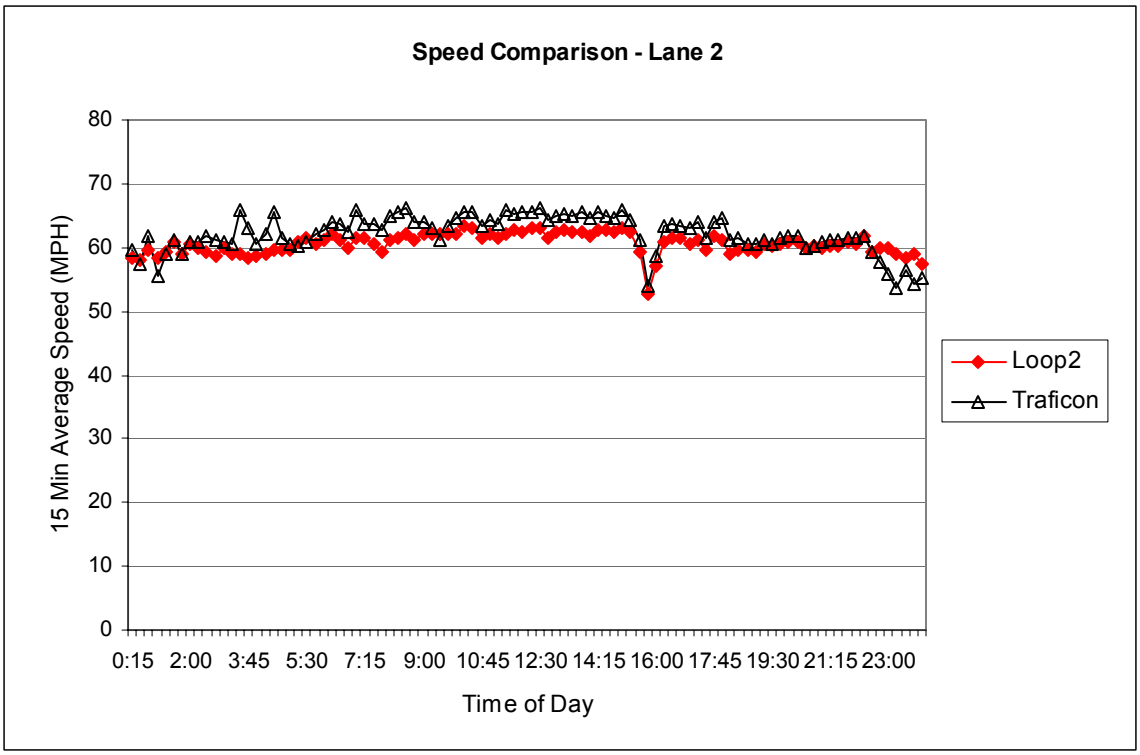
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

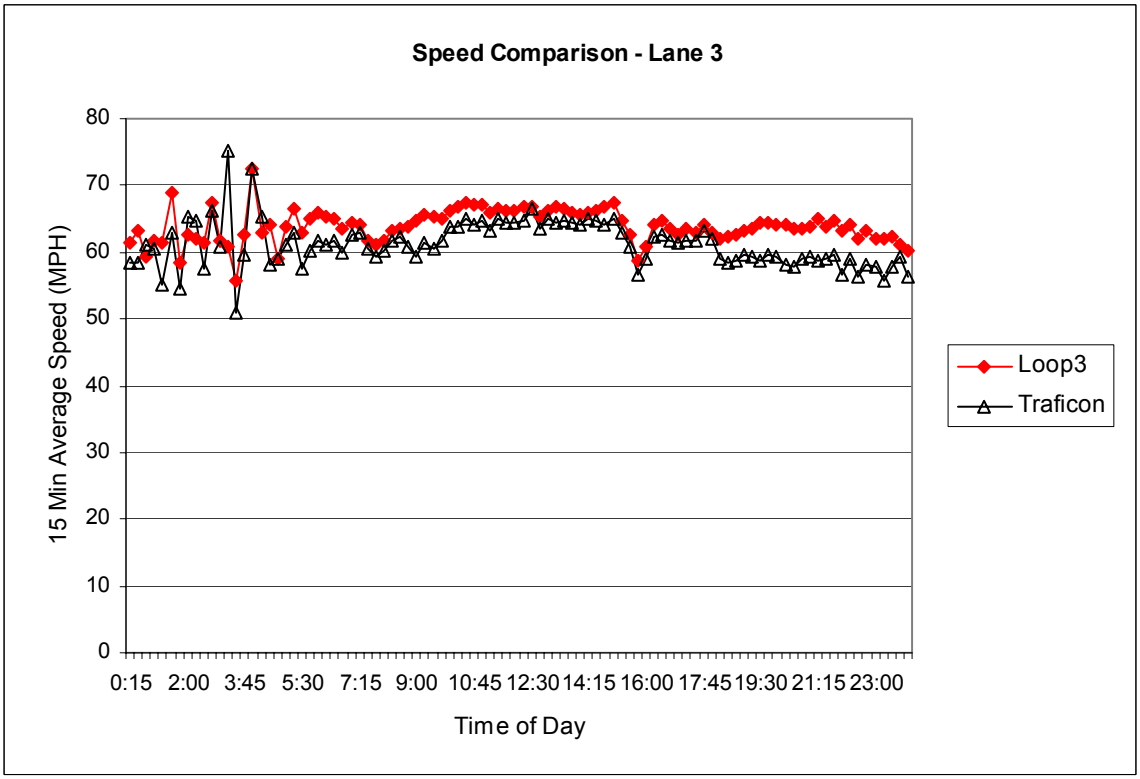

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Traficon


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Traficon


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Traficon


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Traficon

24-Hour Test 18
Freeway - Volume
00:00 AM, February 22, 2002 to 24:00 PM, February 22, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	35	1	26,254	25,209	-4.0%	4.1%	144	0.9909
				2	24,394	24,297	-0.4%	1.8%	133	0.9989
				3	25,873	25,680	-0.7%	1.5%	194	0.9997

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

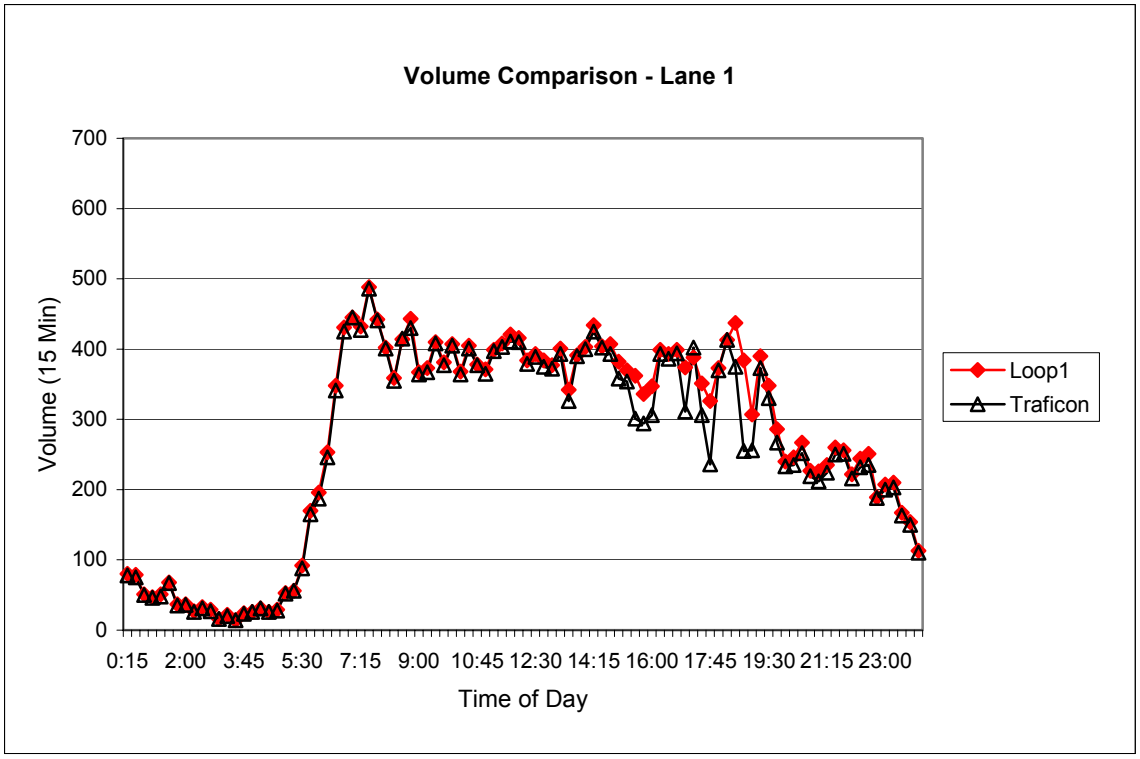
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

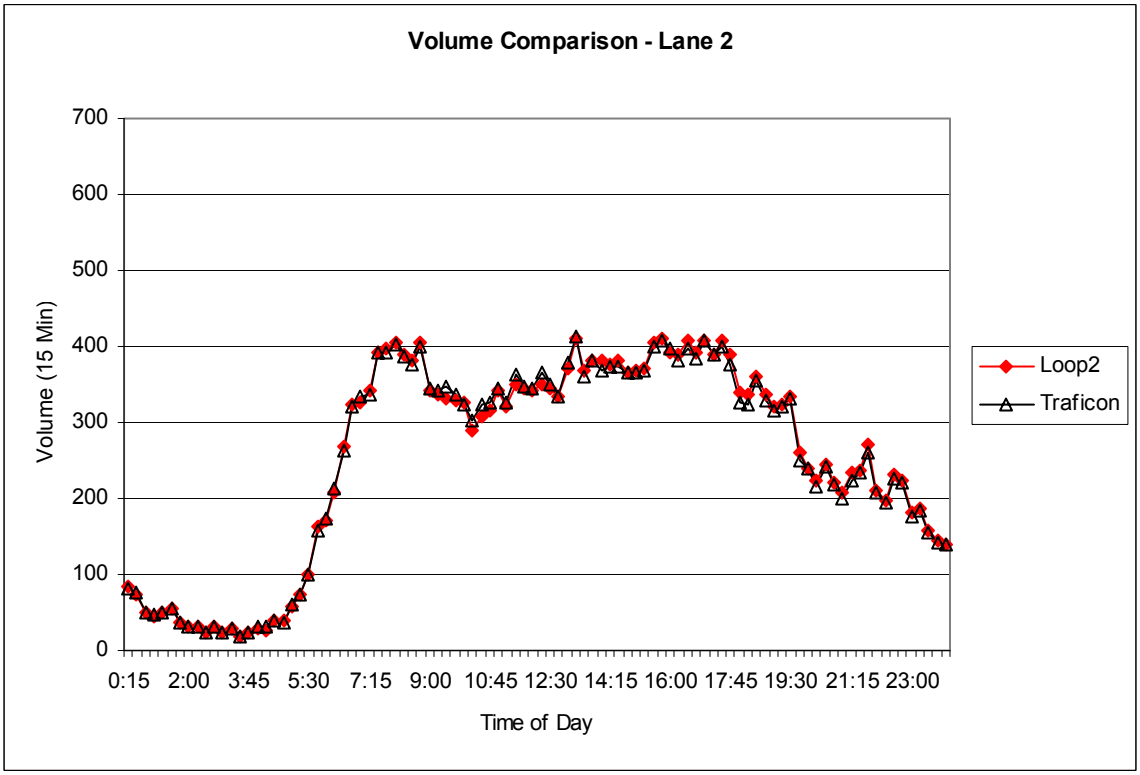
24-Hour Test 18
Freeway - Speed
00:00 AM, February 22, 2002 to 24:00 PM, February 22, 2002

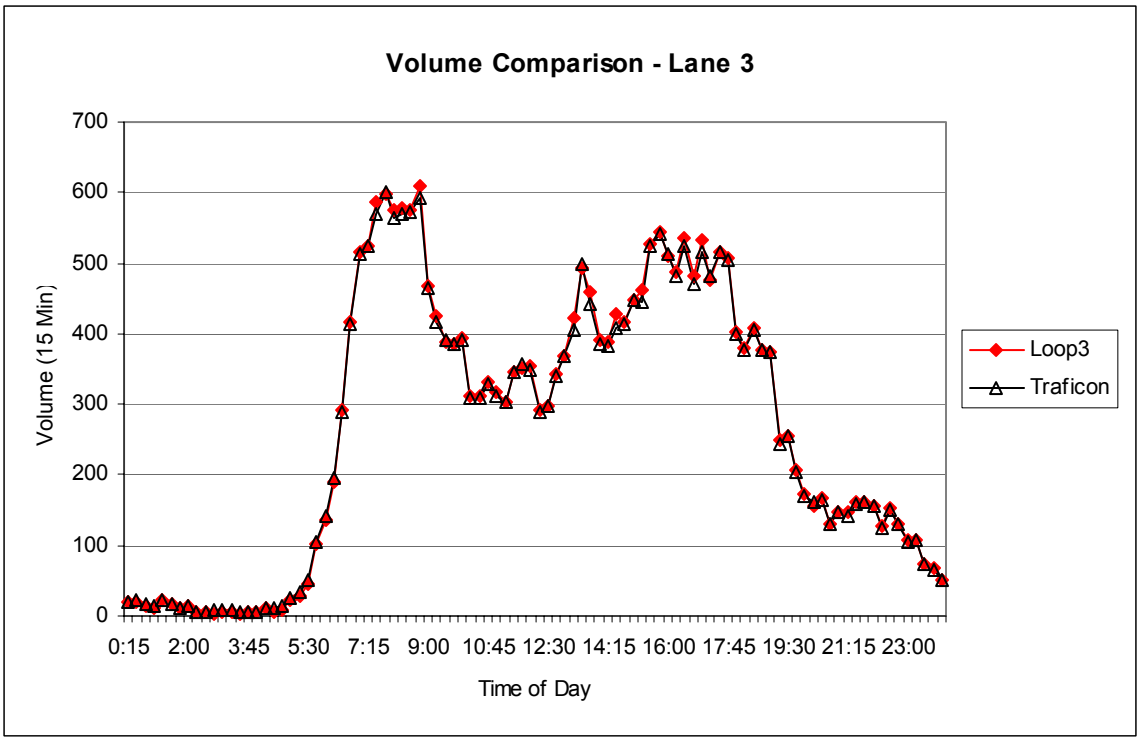
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	35	1	52	58	11.6%	11.7%	14	0.9970
				2	57	60	6.9%	6.9%	8	0.9934
				3	61	60	-0.6%	2.1%	6	0.9162

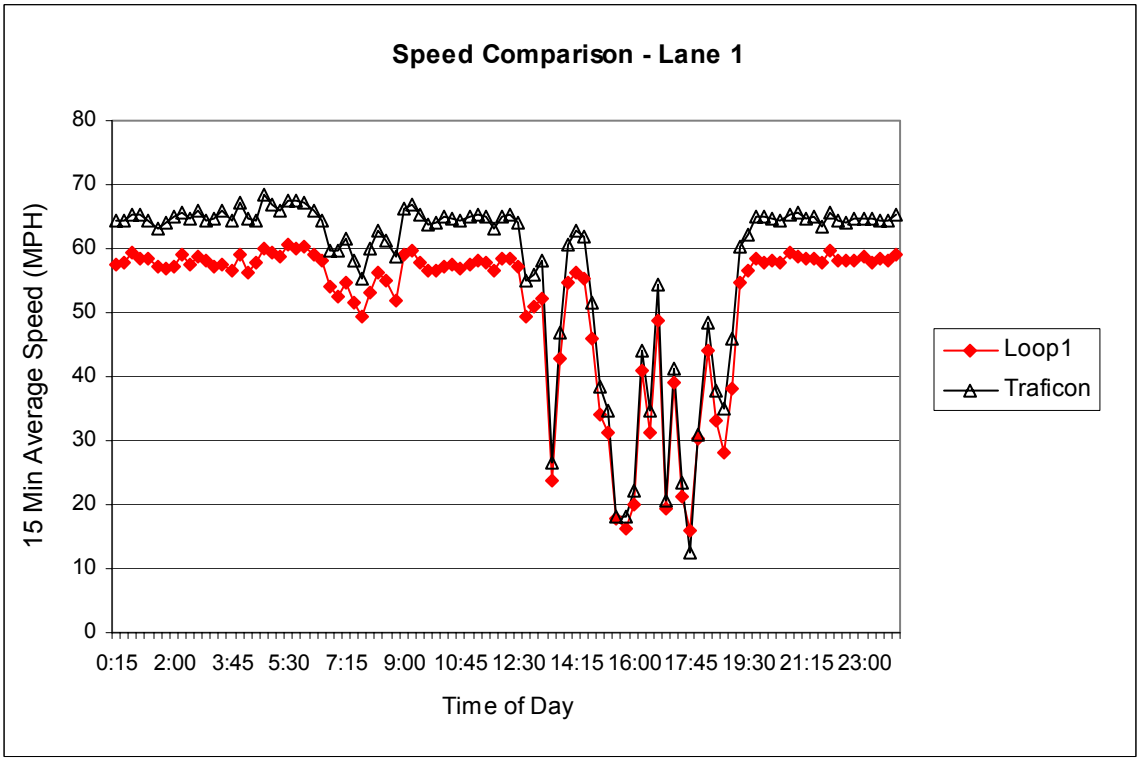
(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

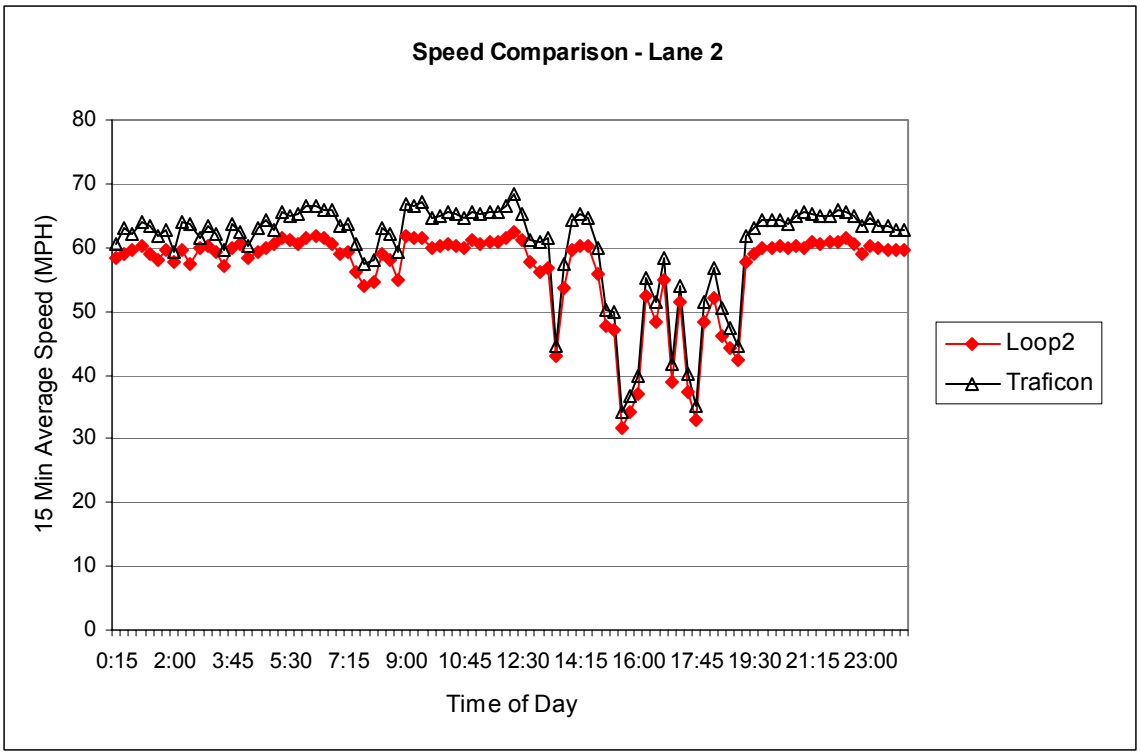
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

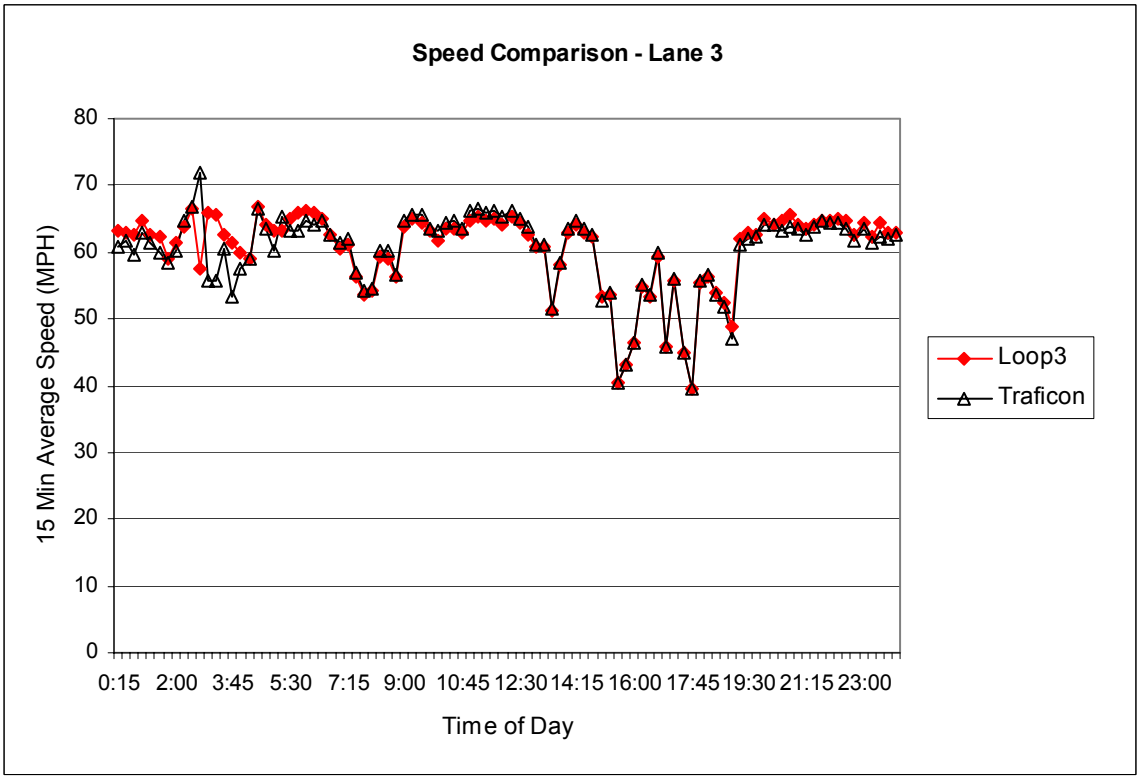

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15 2:00 3:45 5:30 7:15 9:00 10:45 12:30 14:15 16:00 17:45 19:30 21:15 23:00
Time of Day
Loop1
Traficon


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15 2:00 3:45 5:30 7:15 9:00 10:45 12:30 14:15 16:00 17:45 19:30 21:15 23:00
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Traficon


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Traficon


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Traficon

24-Hour Test 19
Freeway - Volume
12:00 PM, February 25, 2002 to 12:00 PM, February 26, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	40	1	23,256	22,491	-3.3%	3.5%	137	0.9959
				2	21,973	21,906	-0.3%	1.8%	126	0.9992
				3	22,187	22,090	-0.4%	1.5%	182	0.9997

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

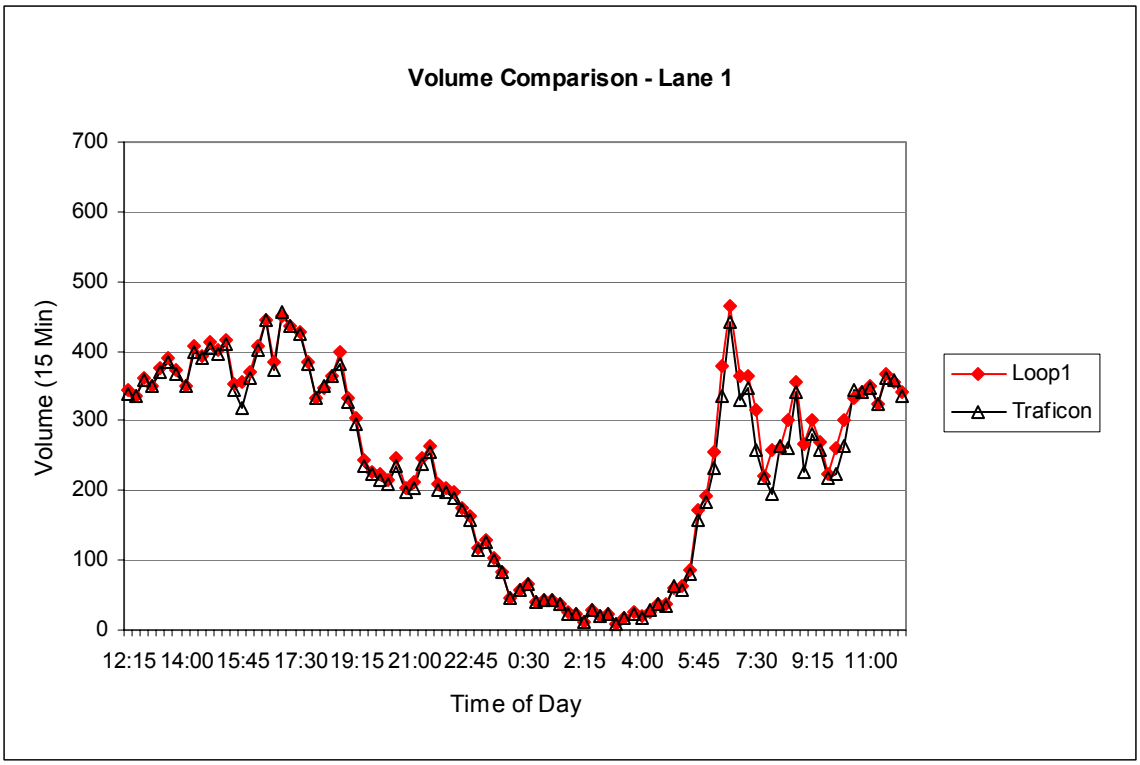
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

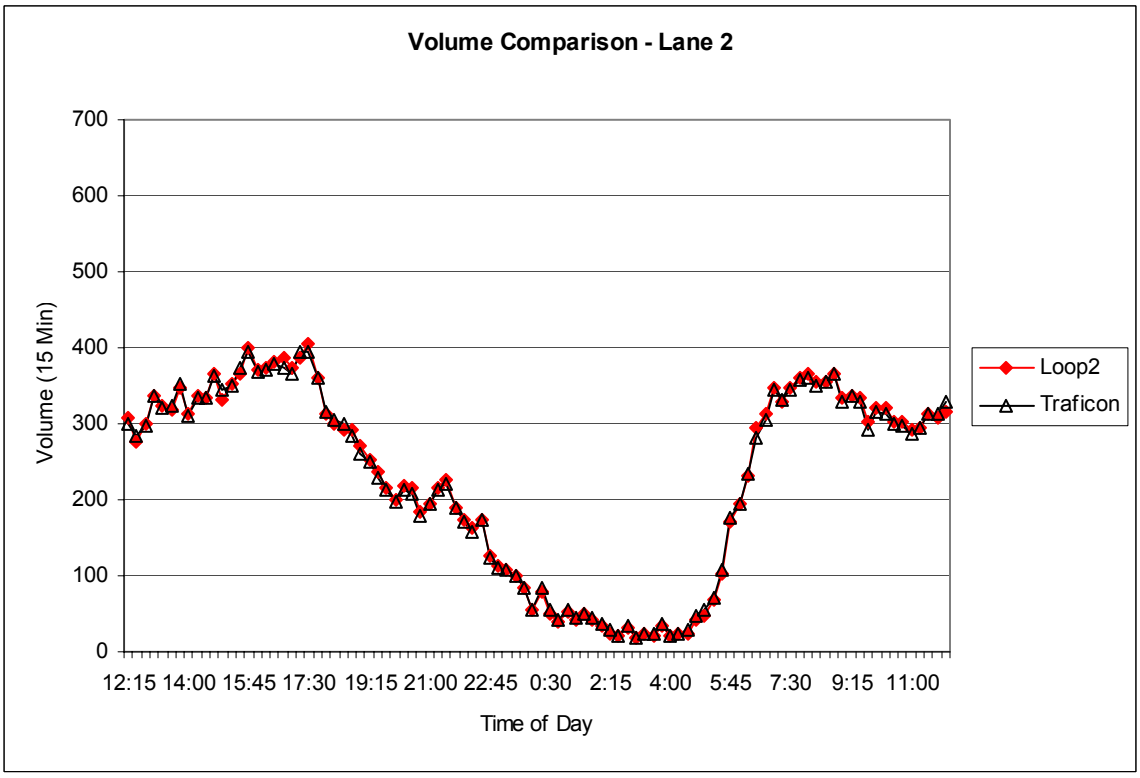
24-Hour Test 19
Freeway - Speed
12:00 PM, February 25, 2002 to 12:00 PM, February 26, 2002

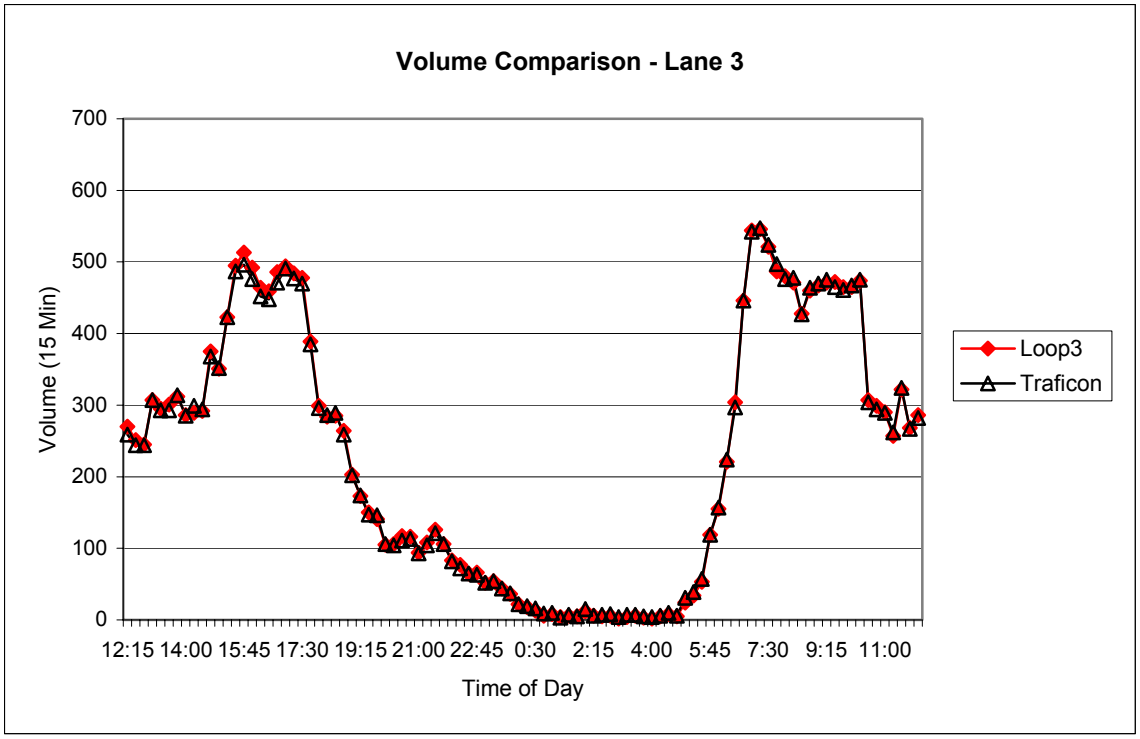
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	40	1	49	52	7.3%	7.5%	17	0.9952
				2	54	56	2.4%	3.9%	11	0.9845
				3	58	56	-3.6%	3.9%	11	0.9597

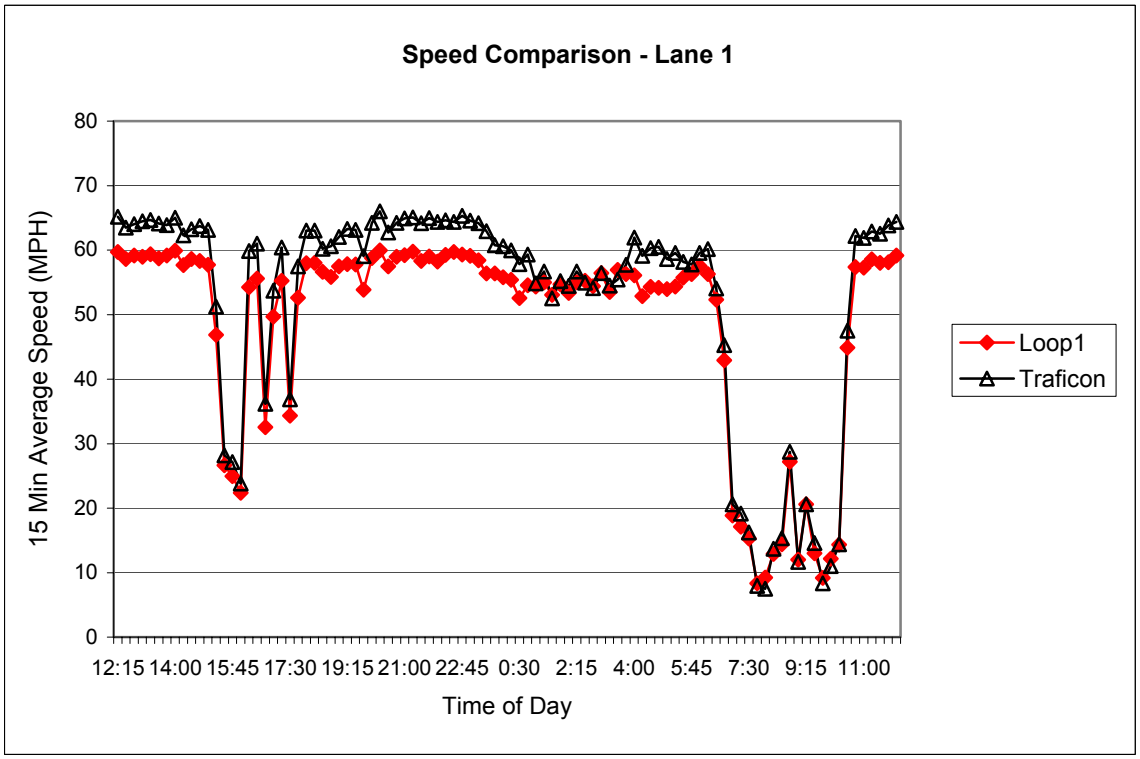
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

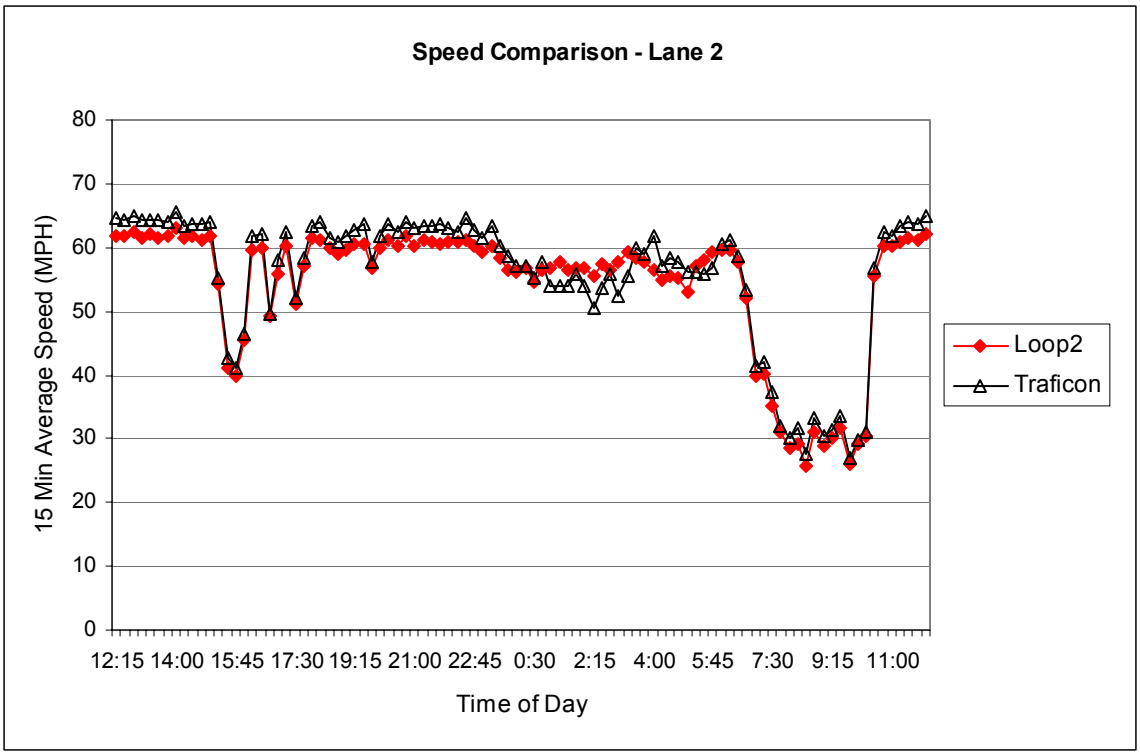
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

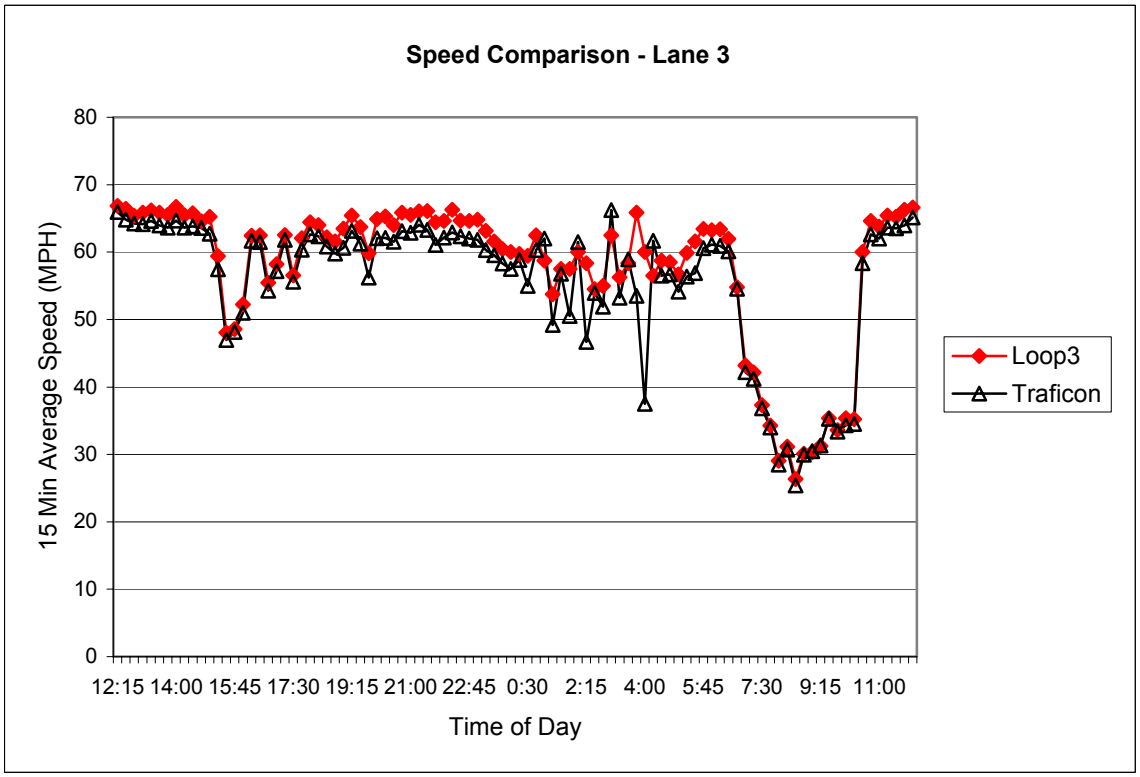

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon

.

24-Hour Test 20
Freeway - Volume
00:00 AM, February 27, 2002 to 24:00 PM, February 27, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	45	1	25,567	24,768	-3.1%	3.4%	150	0.9933
				2	23,804	23,649	-0.7%	1.9%	138	0.9984
				3	25,027	24,455	-2.3%	3.7%	193	0.9963

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

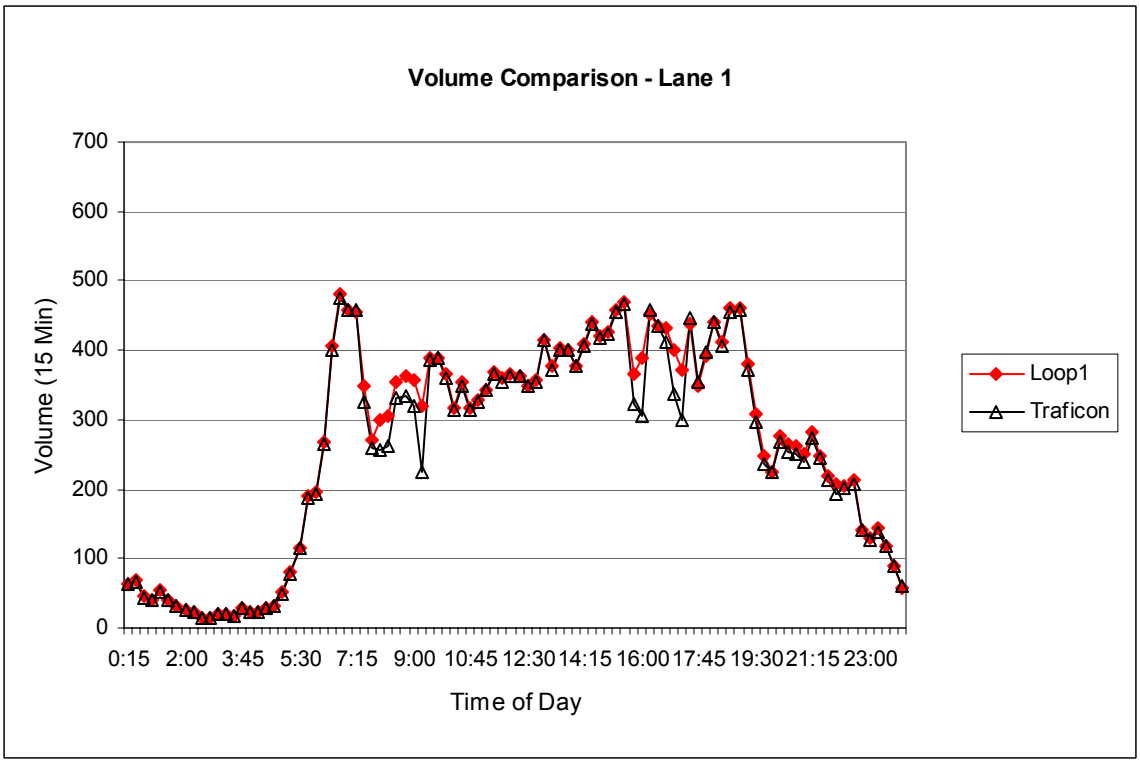
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

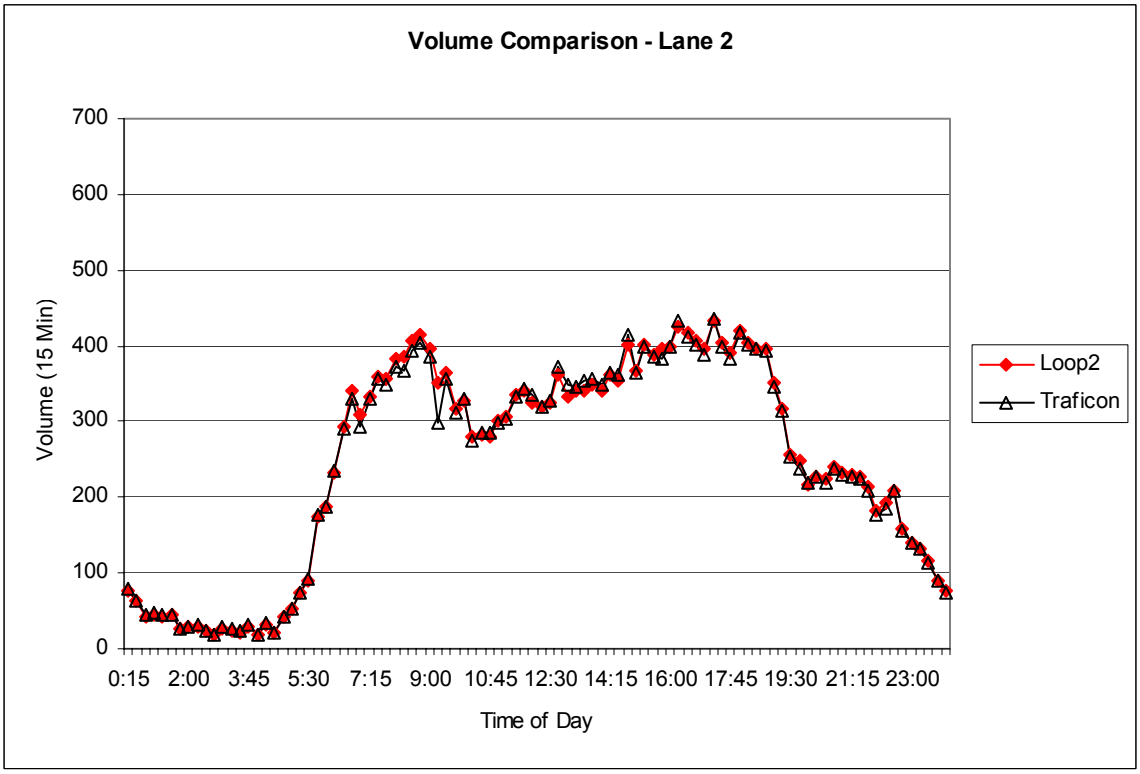
24-Hour Test 20
Freeway - Speed
00:00 AM, February 27, 2002 to 24:00 PM, February 27, 2002

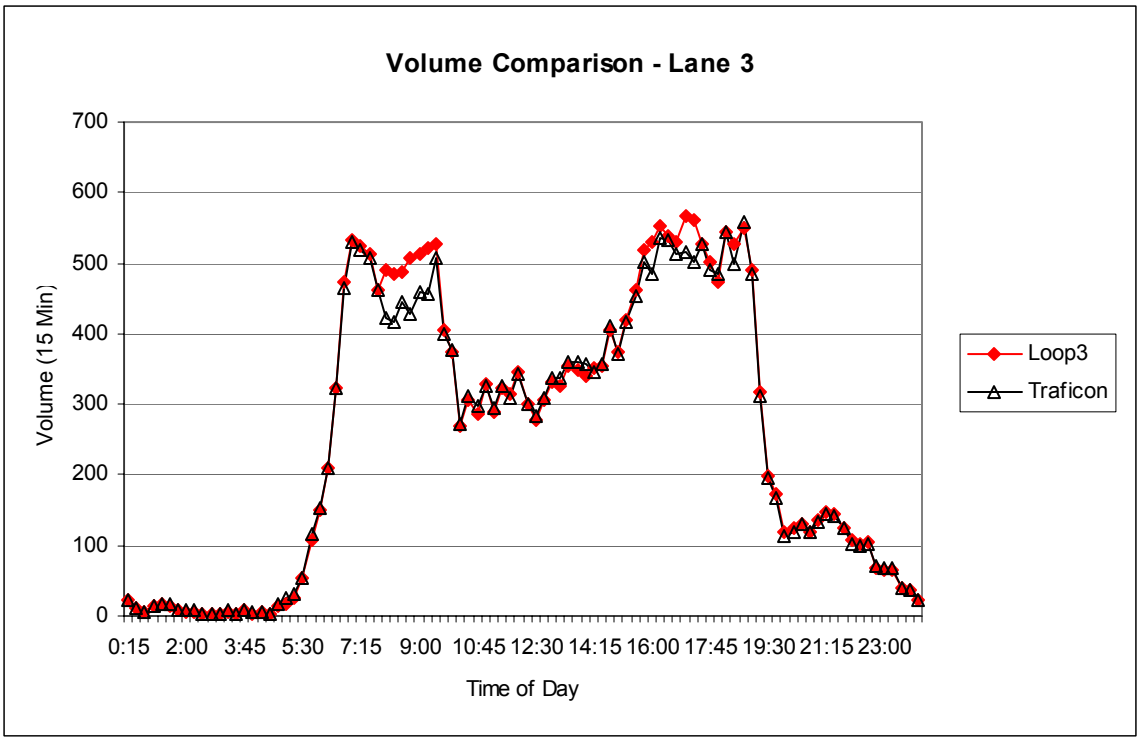
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	45	1	51	55	7.6%	7.7%	15	0.9952
				2	55	58	4.0%	4.4%	10	0.9845
				3	58	59	1.0%	2.3%	11	0.9597

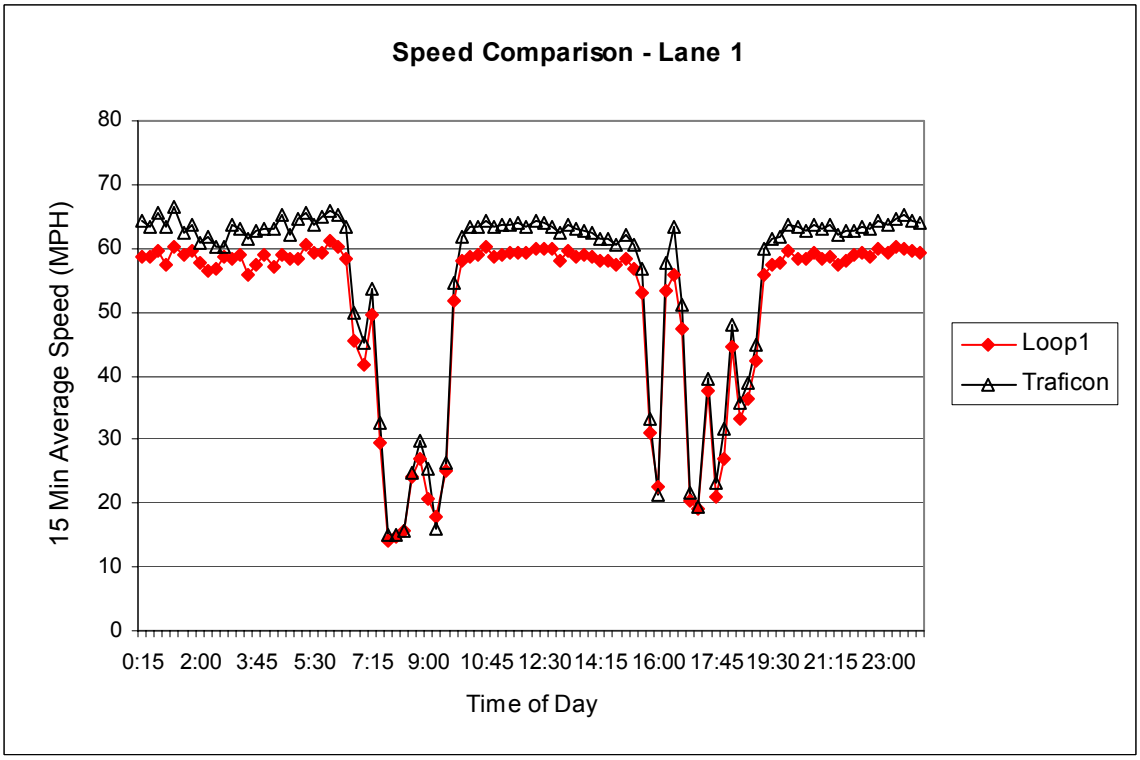
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

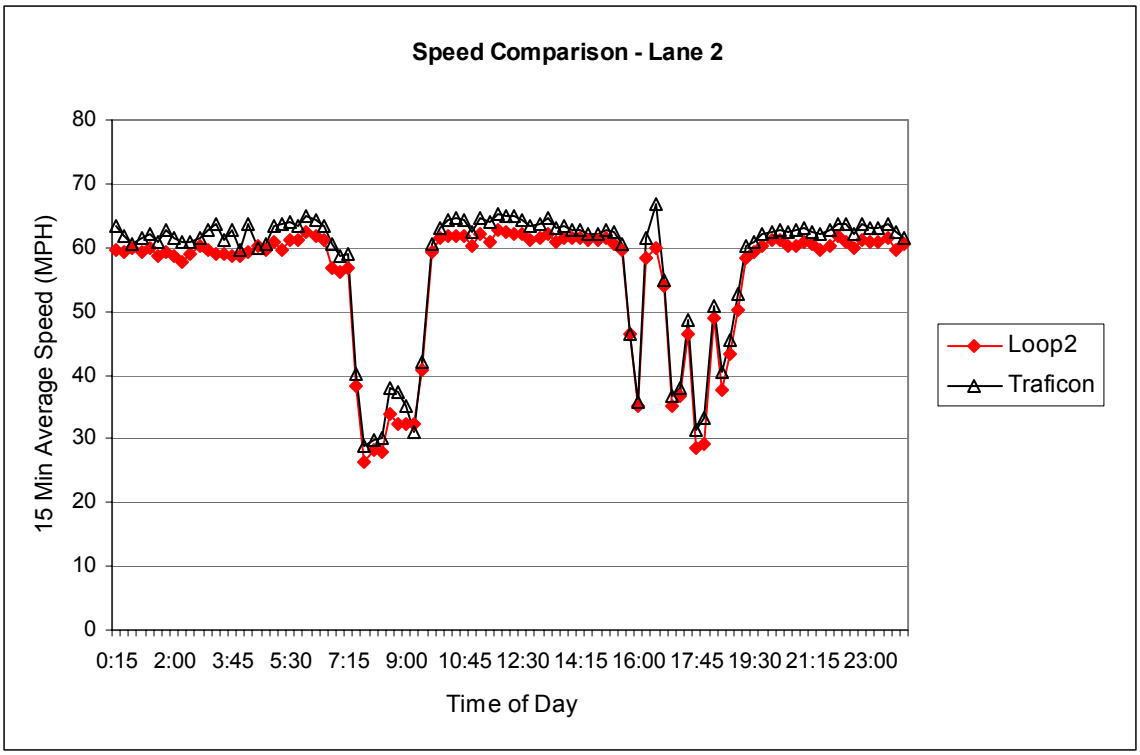
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

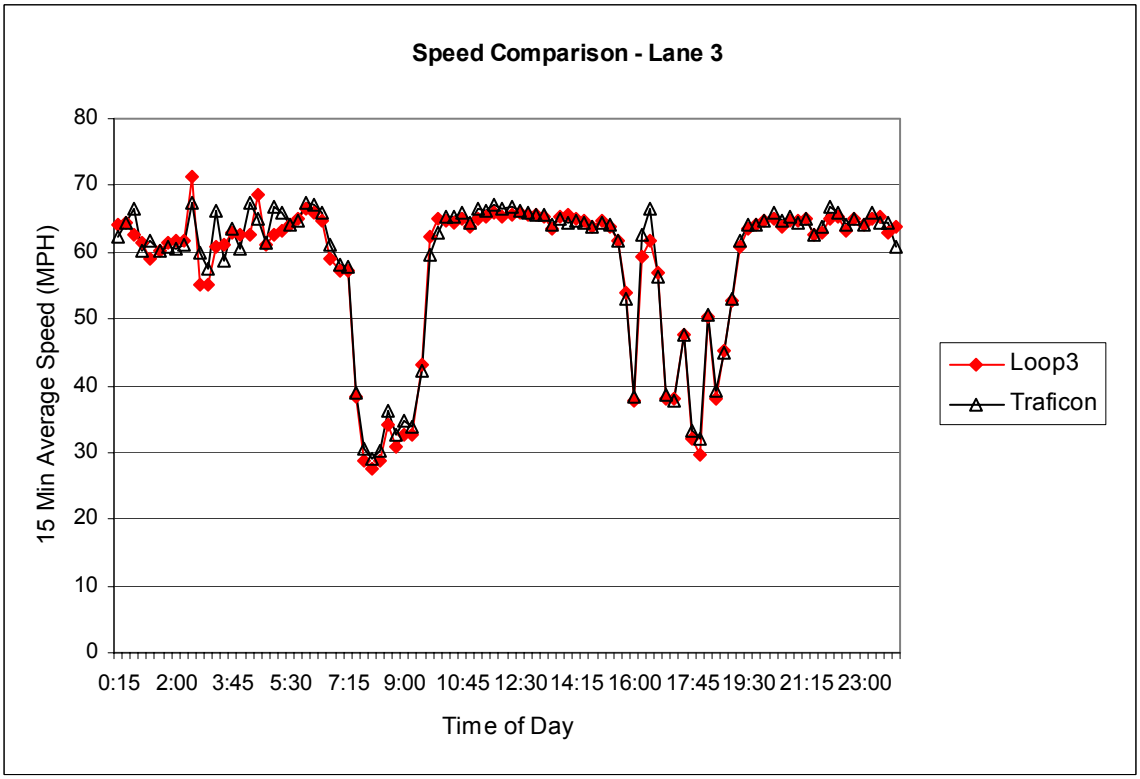

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15 2:00 3:45 5:30 7:15 9:00 10:45 12:30 14:15 16:00 17:45 19:30 21:15 23:00
Time of Day
Loop1
Traficon


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15 2:00 3:45 5:30 7:15 9:00 10:45 12:30 14:15 16:00 17:45 19:30 21:15 23:00
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Traficon


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
Traficon


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop3
Traficon

24-Hour Test 21
Freeway - Volume
12:00 PM, February 28, 2002 to 12:00 PM, March 1, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	30	1	25,935	24,709	-4.7%	4.8%	148	0.9881
				2	24,217	24,136	-0.3%	2.0%	135	0.9988
				3	25,719	25,320	-1.6%	3.0%	193	0.9983

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

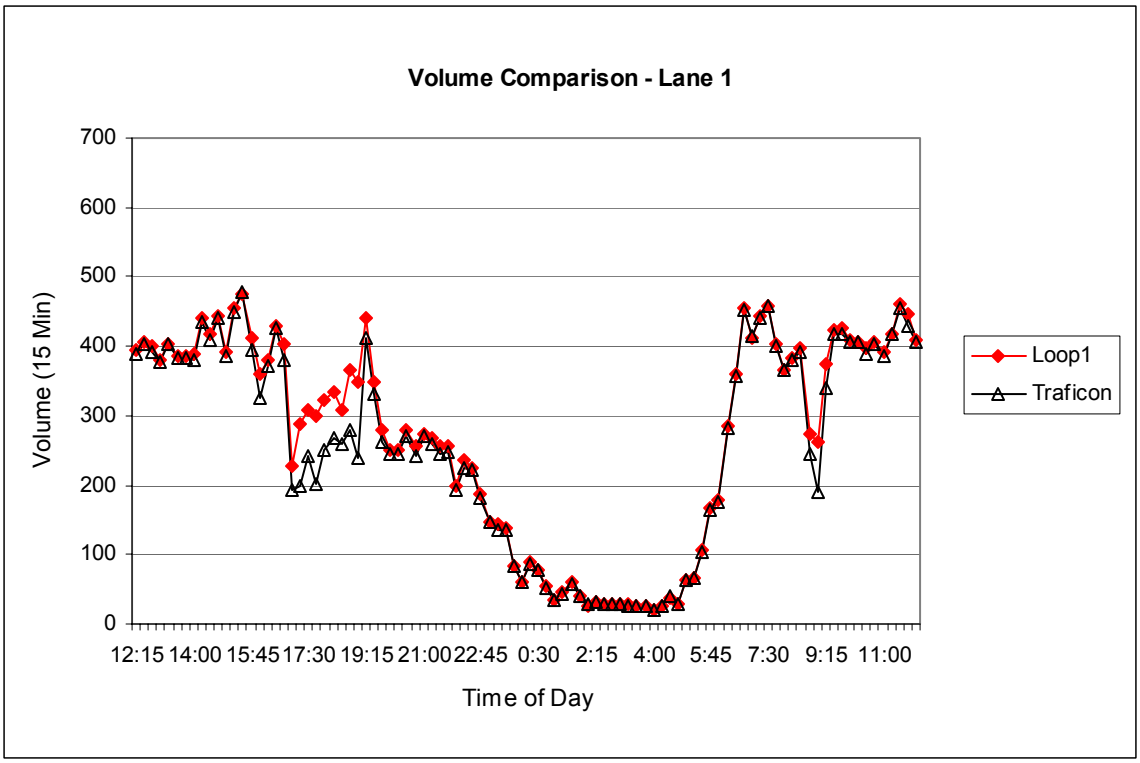
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

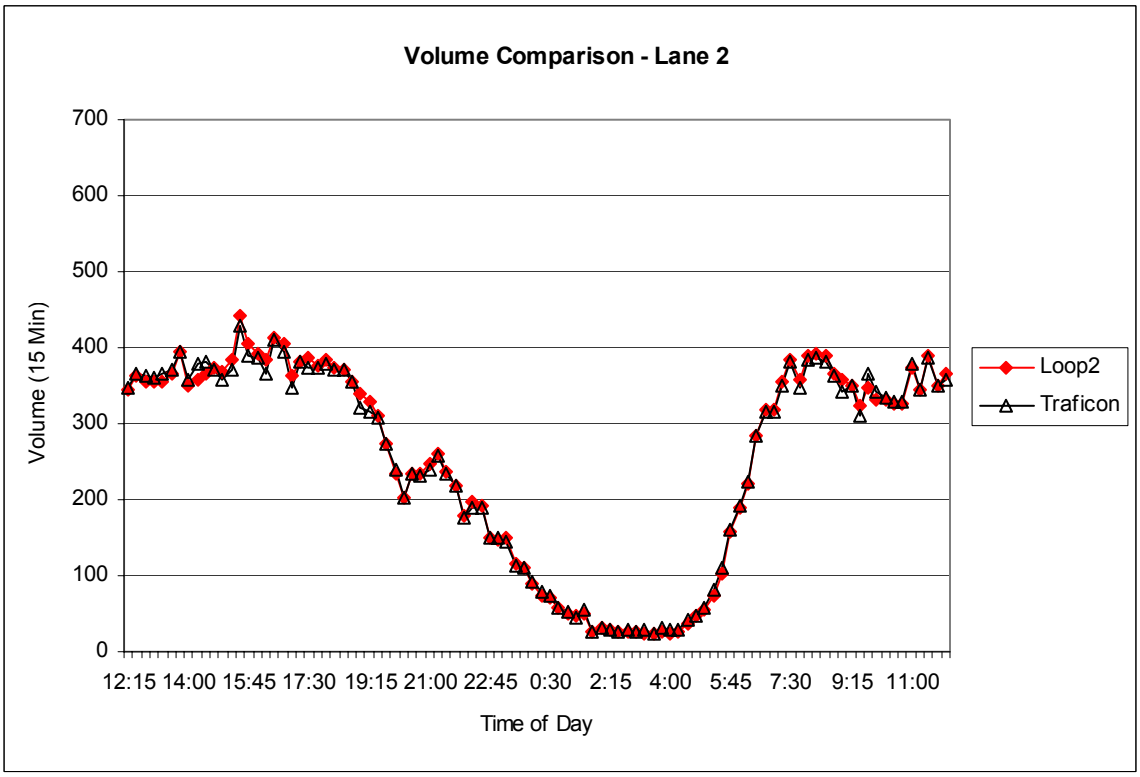
24-Hour Test 21
Freeway - Speed
12:00 PM, February 28, 2002 to 12:00 PM, March 1, 2002

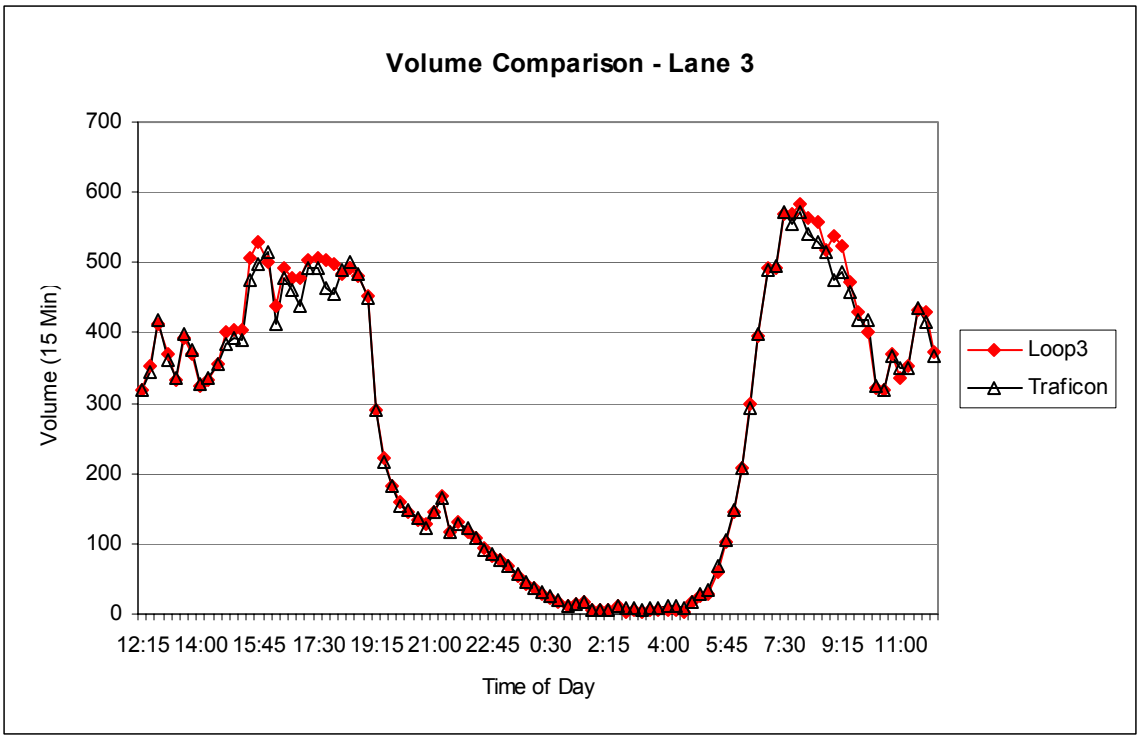
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Sidefire	15	30	1	50	55	9.2%	9.9%	16	0.9983
				2	55	58	6.0%	6.2%	10	0.9965
				3	59	58	-1.4%	3.1%	9	0.9682

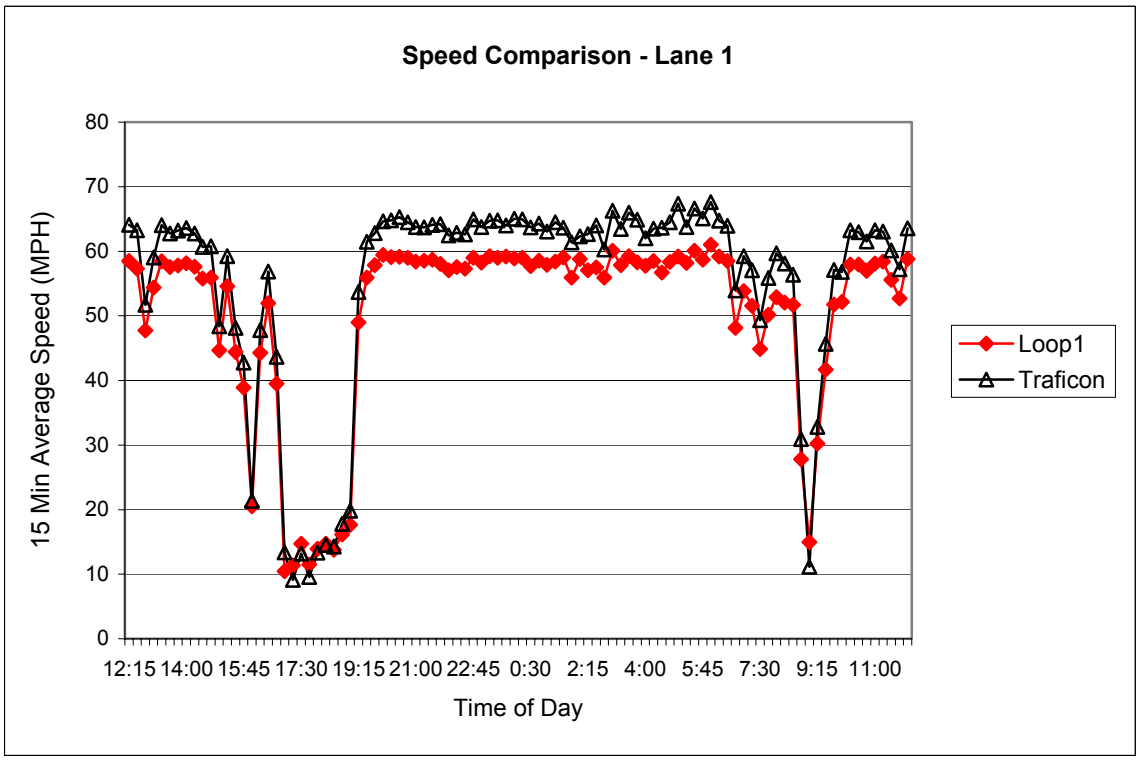
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

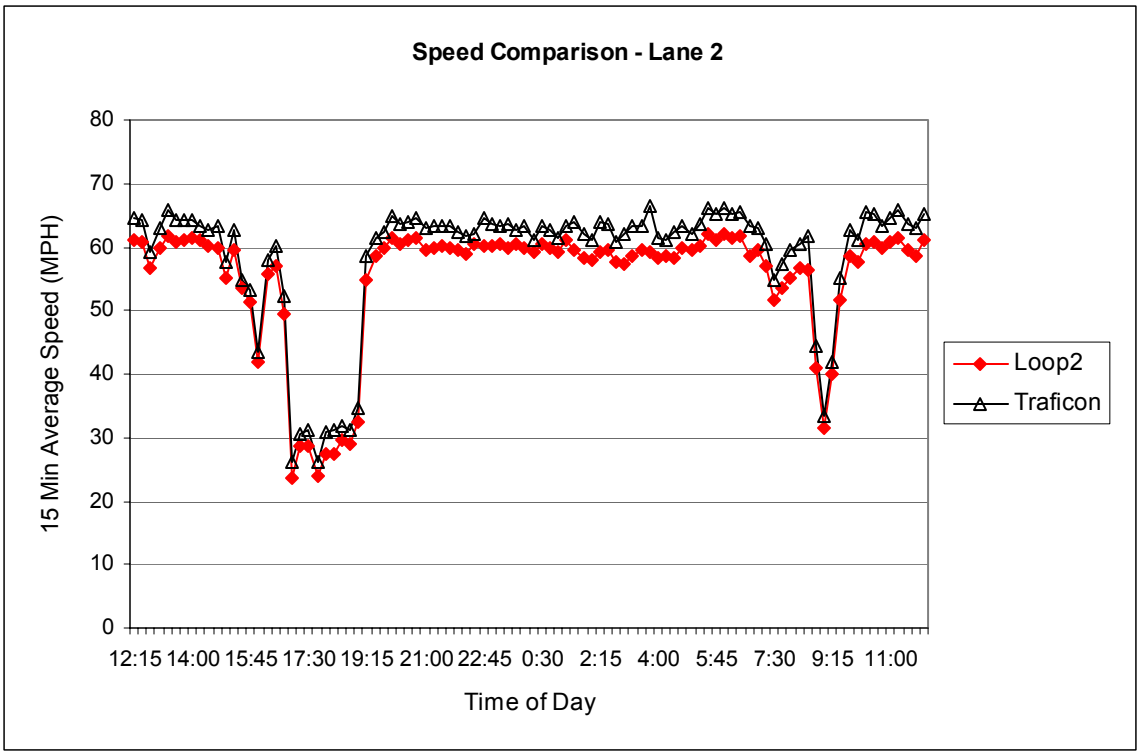
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

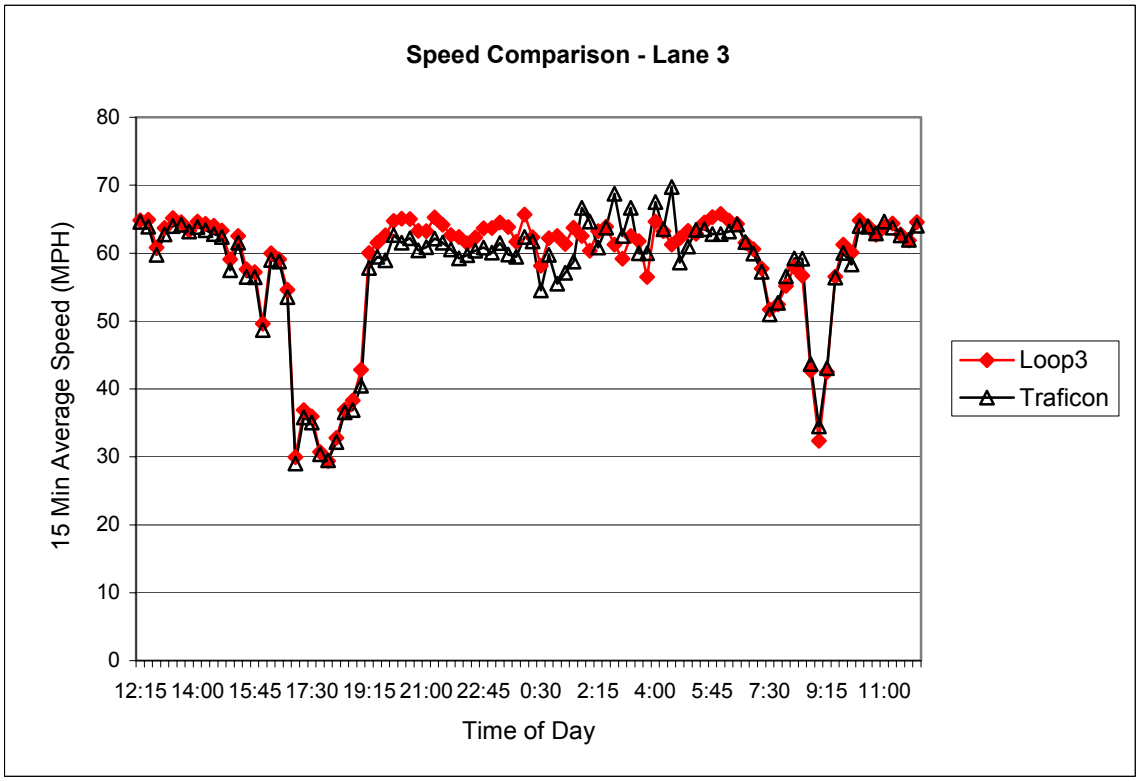

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon

24-Hour Test 22
Freeway - Volume
12:00 PM, March 7, 2002 to 12:00 PM, March 8, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Overhead	0	28	1	22,944	20,027	-12.7%	13.6%	130	0.9242
				2	21,974	20,763	-5.5%	6.8%	122	0.9518
				3	23,408	21,740	-7.1%	7.7%	165	0.9767
ASIM TT 262	Overhead	0	17	1	22,944	21,832	-4.8%	4.9%	138	0.9988
ASIM IR 254	Overhead	0	17	3	23,408	20,068	-14.3%	15.2%	167	0.9897

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

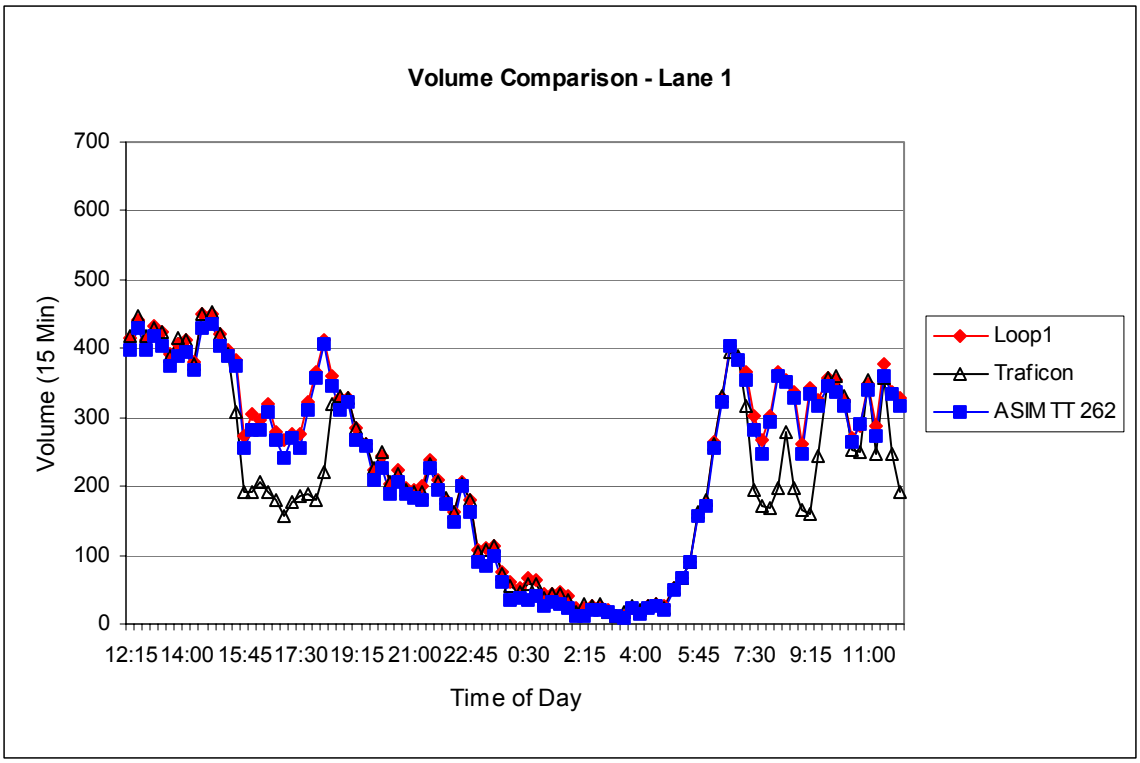
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

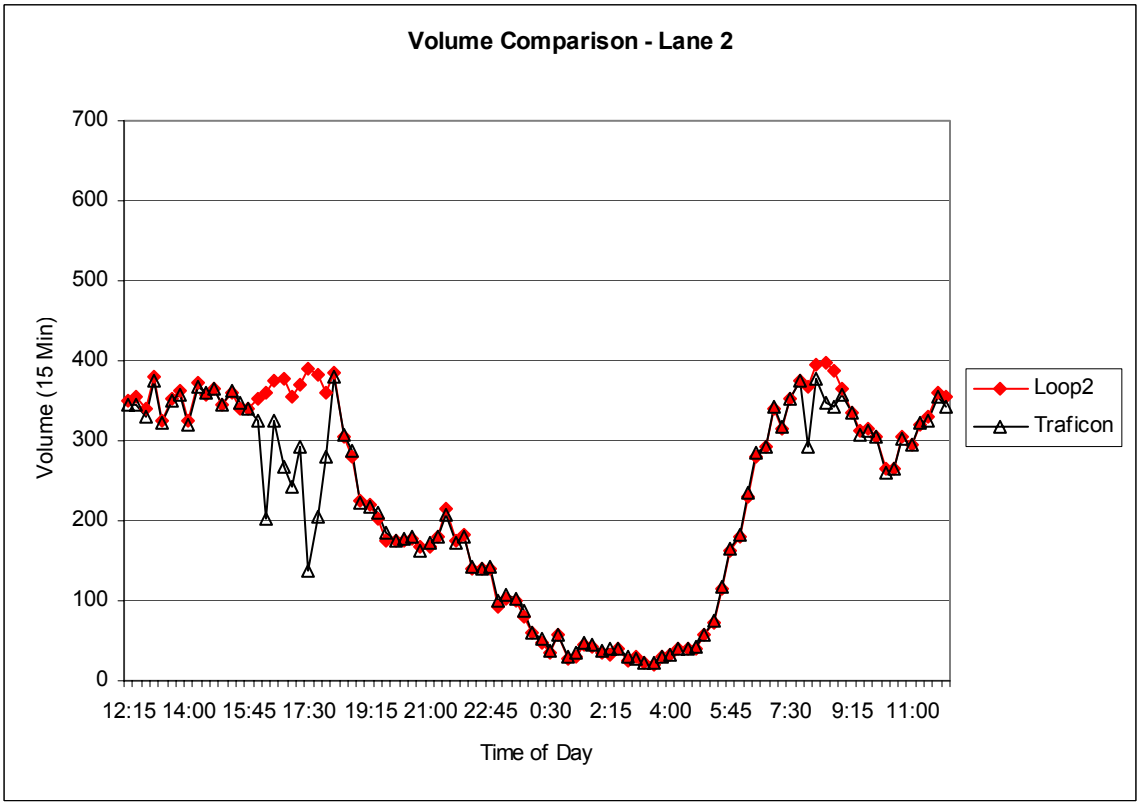
24-Hour Test 22
Freeway - Speed
12:00 PM, March 7, 2002 to 12:00 PM, March 8, 2002

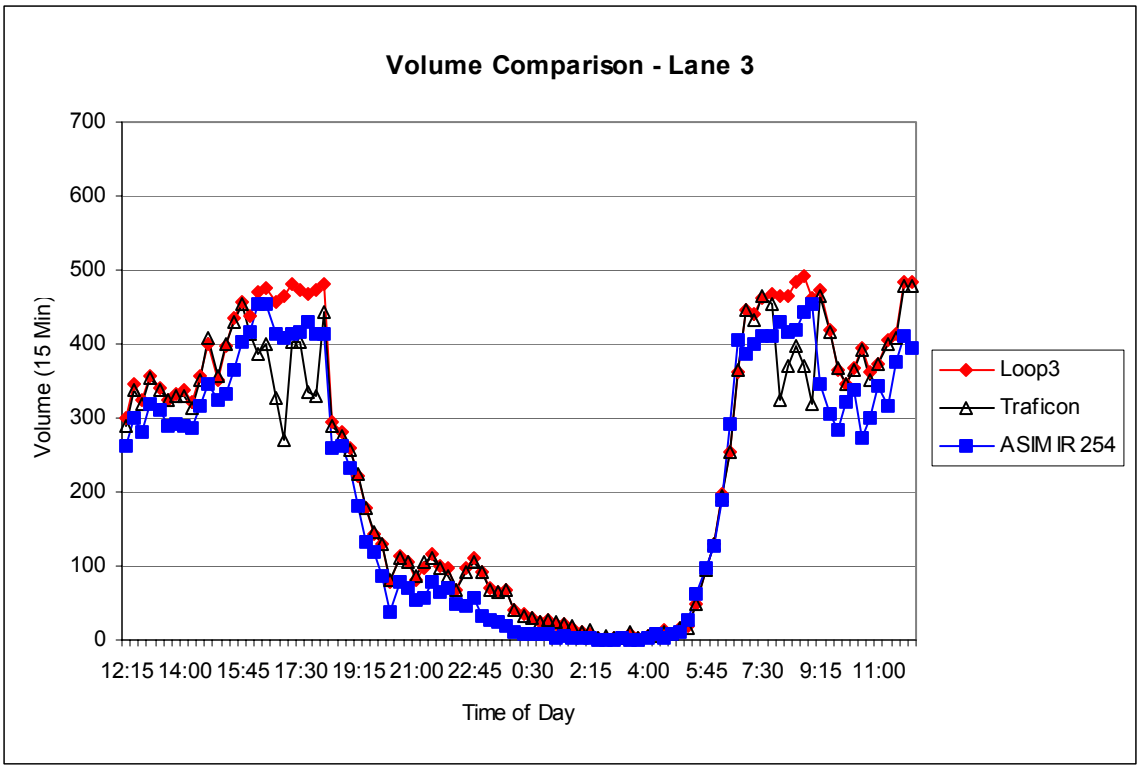
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Average Speed	Sensor 24 Hour Average Speed	Percent Difference (1)	Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Overhead	0	28	1	39	38	-1.7%	13.1%	19	0.9840
				2	46	46	-0.3%	8.9%	15	0.9800
				3	49	50	2.1%	12.0%	16	0.8982
ASIM TT 262	Overhead	0	17	1	39	40	3.7%	13.9%	15	0.9985
ASIM IR 254	Overhead	0	17	3	49	51	3.7%	13.9%	13	0.6854

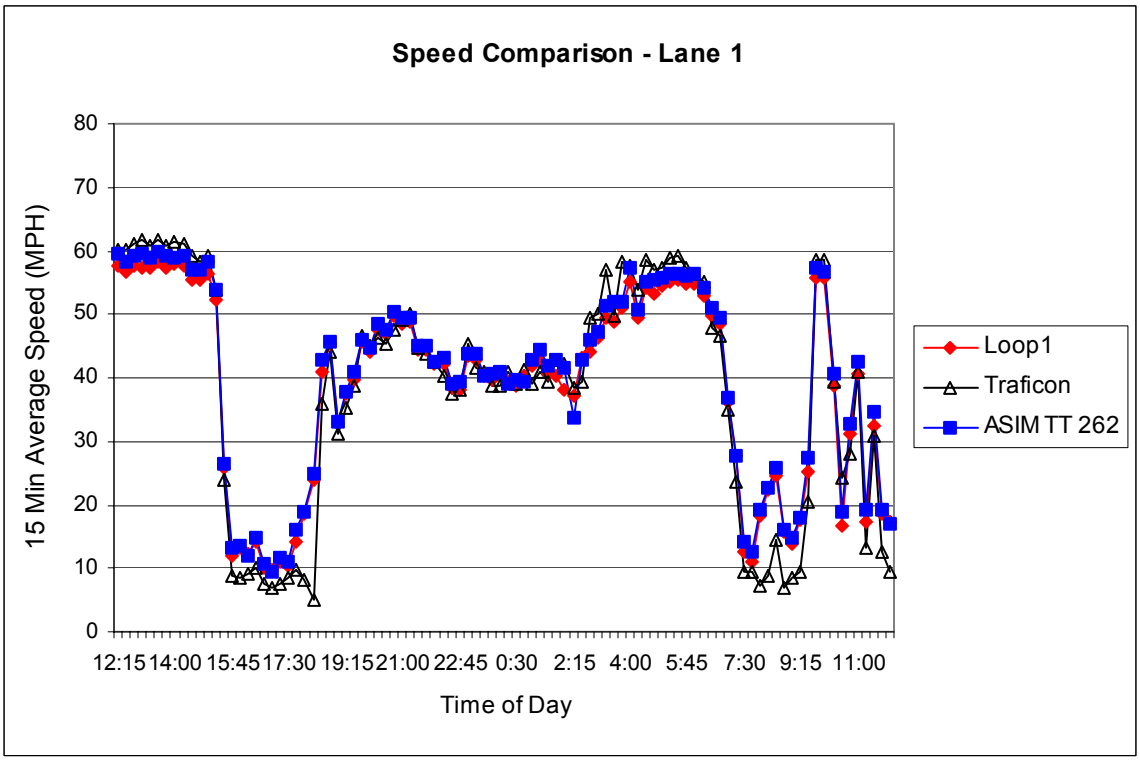
(1). Percent Difference = (24 Hour Average Sensor Speed – 24 Hour Average Baseline Speed) / (24 Hour Average Baseline Speed)

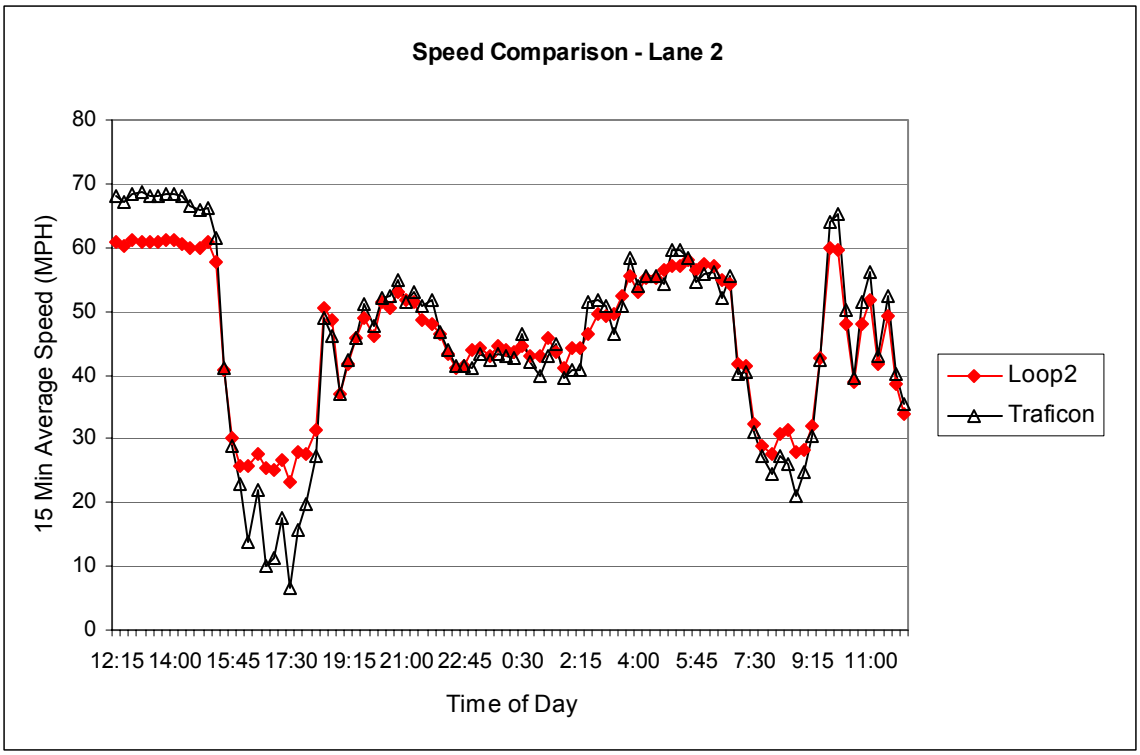
(2). Absolute Average Percent Difference = Average((Absolute(15min Average Sensor Speed – 15min Average Baseline Speed))/(15min Average Baseline Speed))

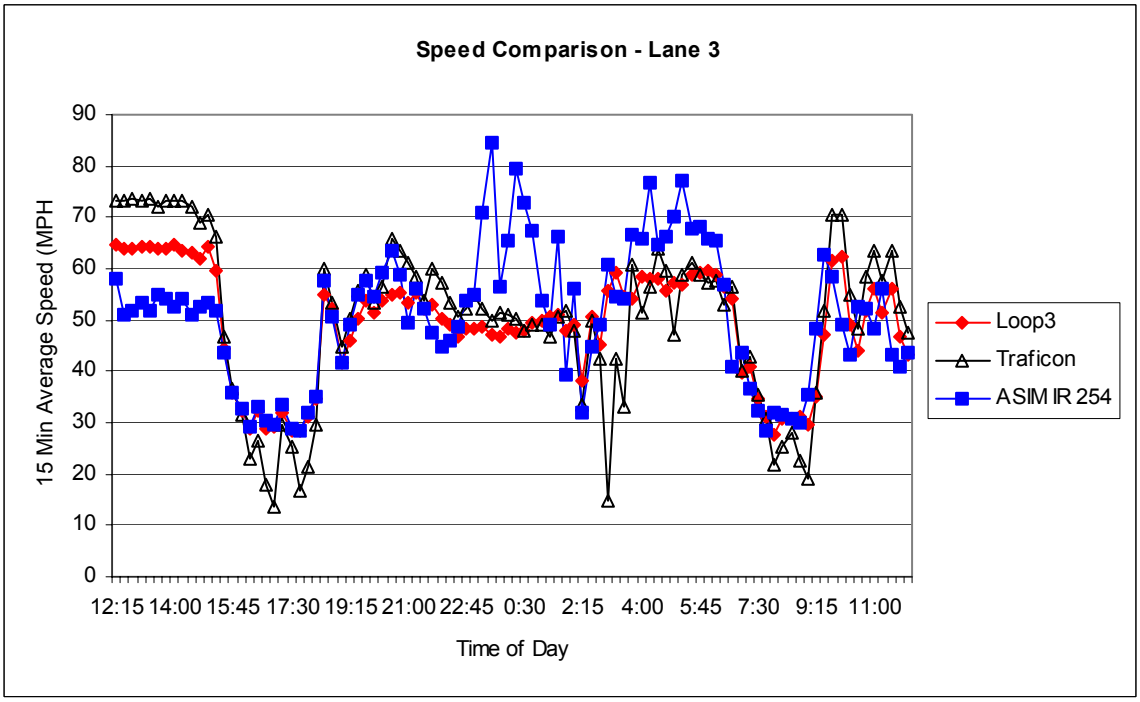

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon
ASIM TT 262


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon
ASIM IR 254


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop1
Traficon
ASIM TT 262


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH
90
80
70
60
50
40
30
20
10
0
12:15 14:00 15:45 17:30 19:15 21:00 22:45 0:30 2:15 4:00 5:45 7:30 9:15 11:00
Time of Day
Loop3
Traficon
ASIM IR 254

24-Hour Test 23
Freeway - Volume
9:15 AM, March 11, 2002 to 9:15 AM, March 12, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Traficon	Overhead	0	21	1	22,852	22,103	-3.3%	4.4%	146	0.9916
				2	21,286	20,788	-2.3%	2.7%	136	0.9983
				3	21,591	20,567	-4.7%	4.8%	181	0.9992

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

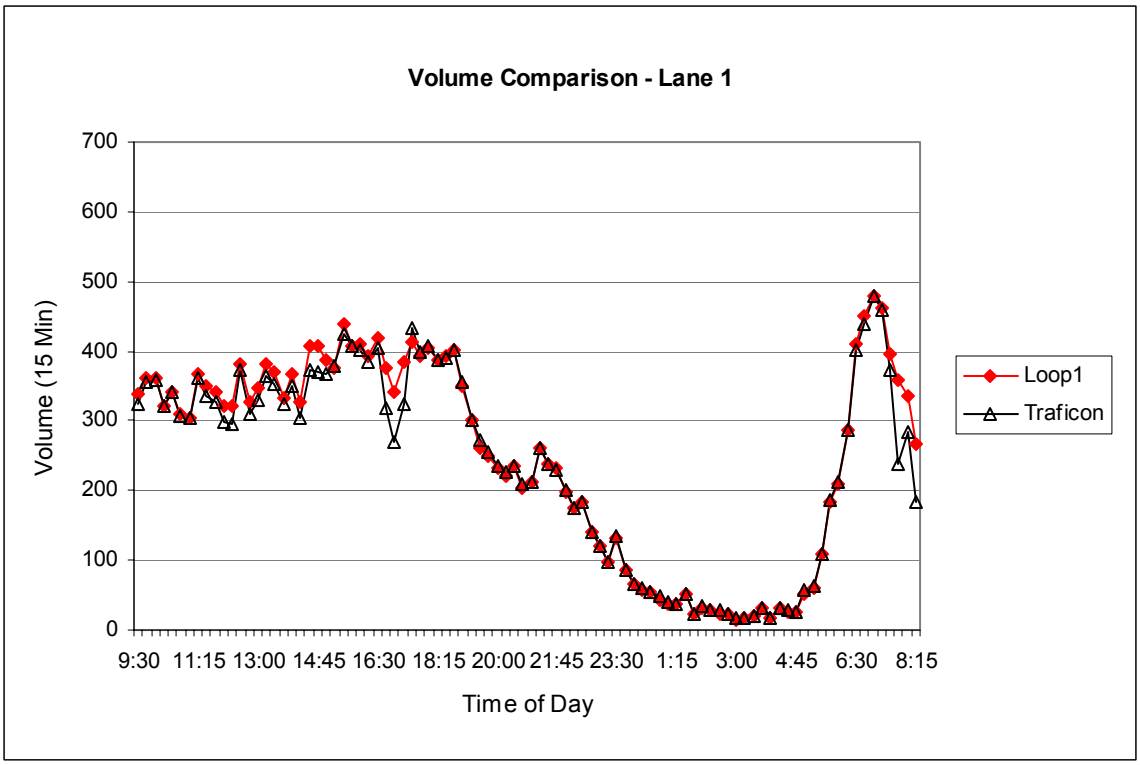
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

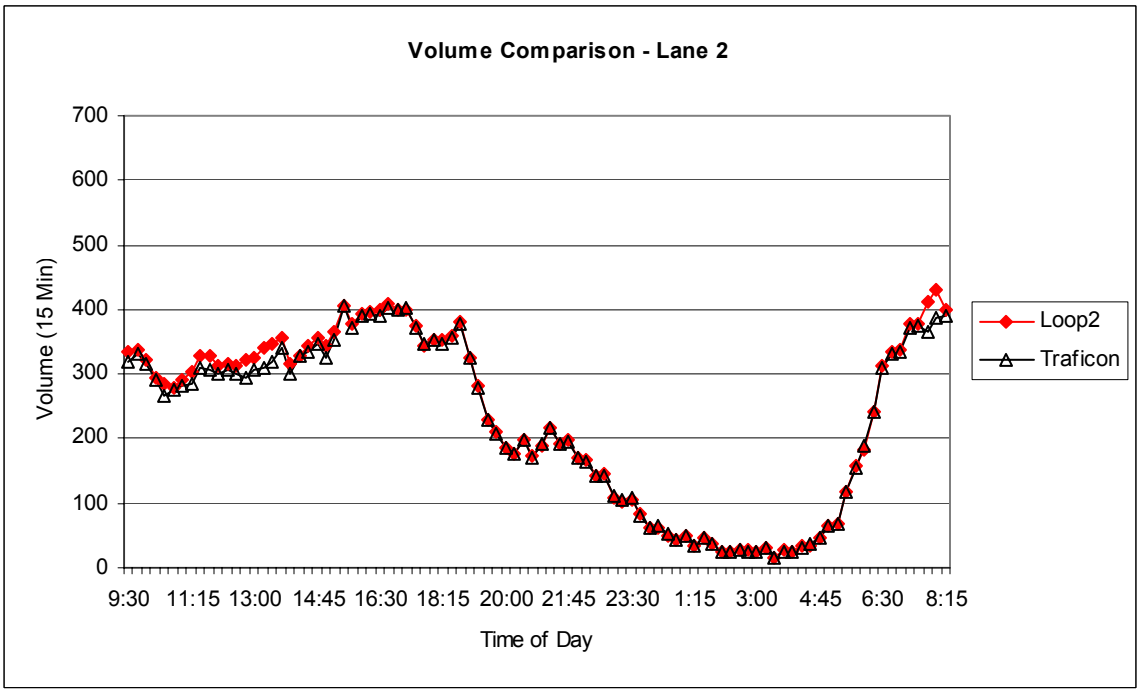
24-Hour Test 23
Freeway - Speed
9:15 AM, March 11, 2002 to 9:15 AM, March 12, 2002

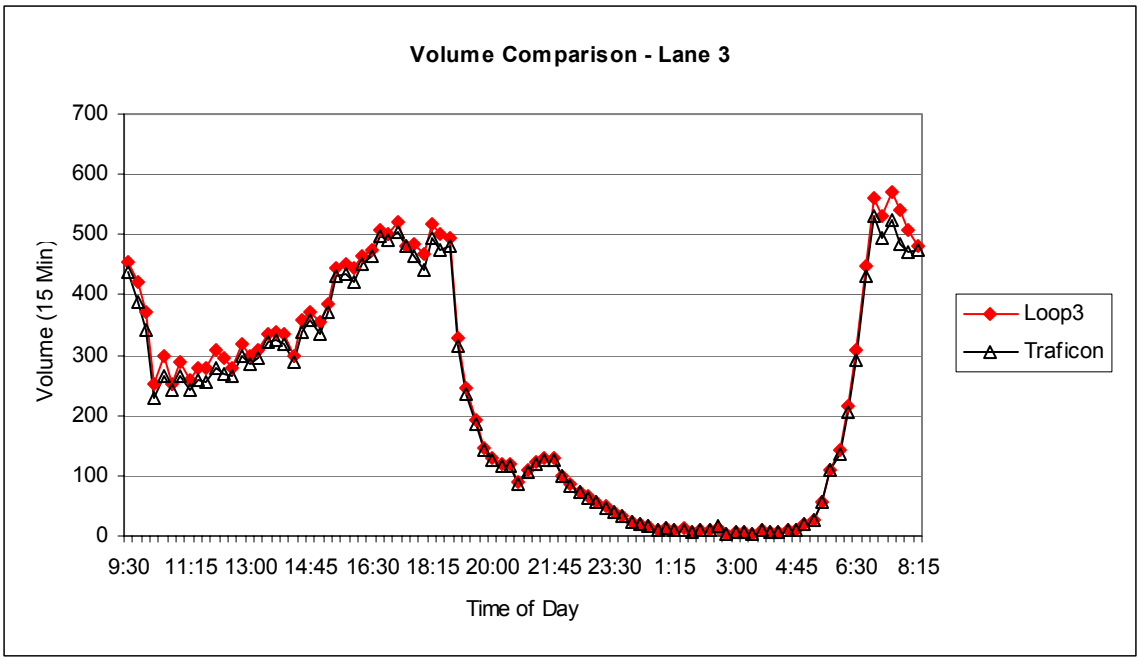
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Variance	Standard Deviation	Correlation Coefficient
Traficon	Overhead	0	21	1	52	51	-1.8%	3.3%	227	15	0.9923
				2	55	57	3.8%	5.8%	201	14	0.9824
				3	57	62	7.2%	7.2%	245	16	0.9712

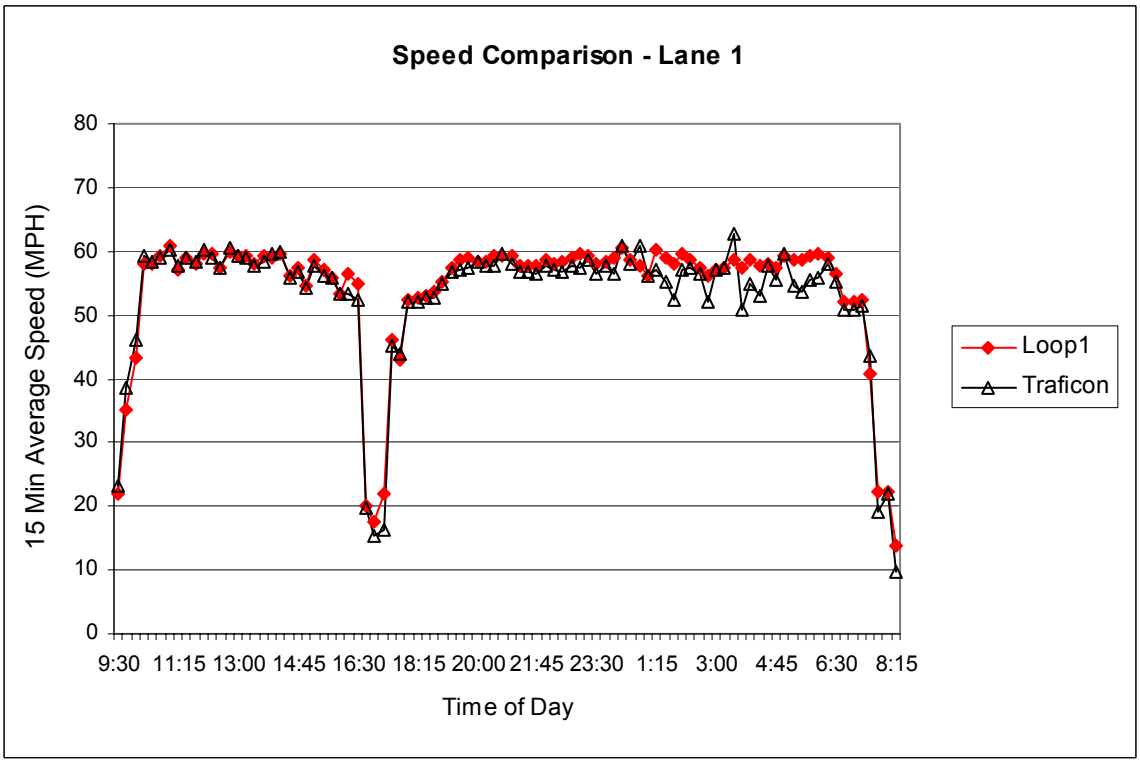
(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

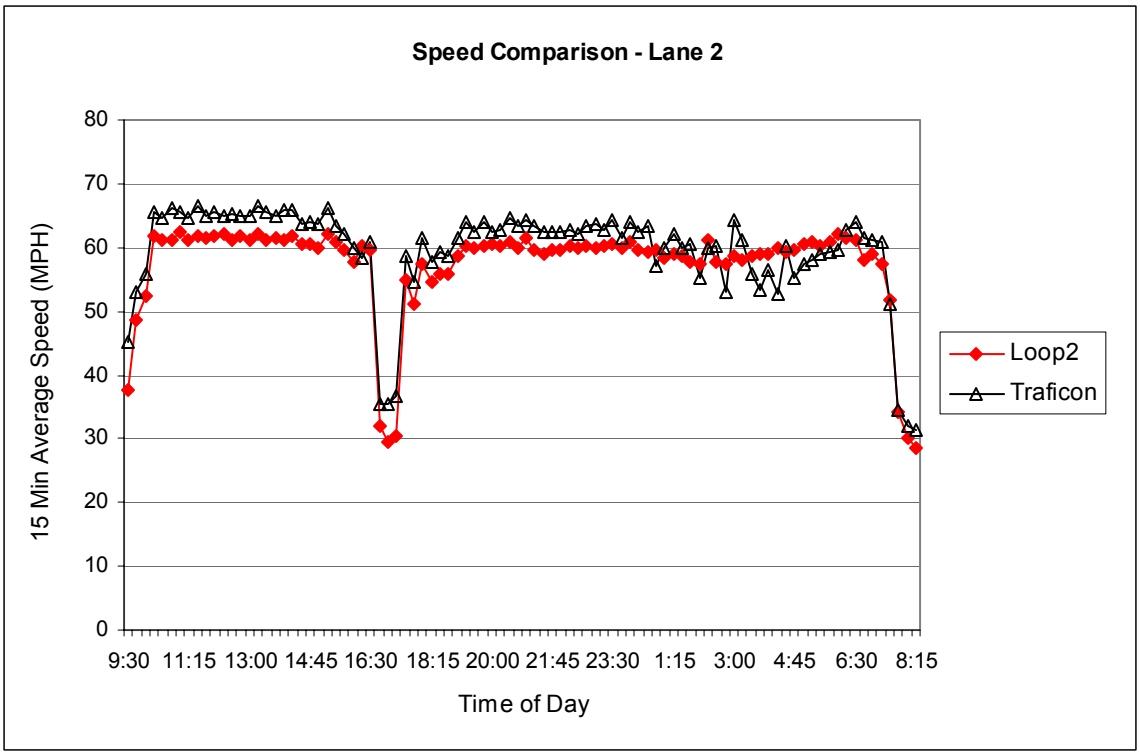
(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

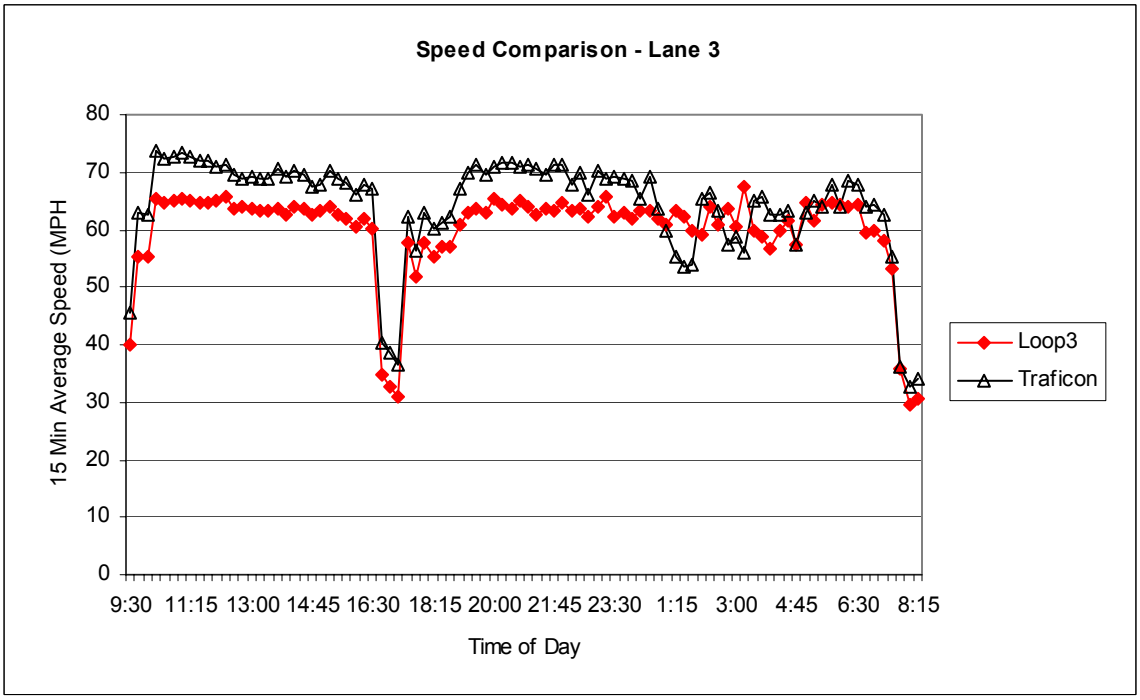

Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
9:30
11:15
13:00
14:45
16:30
18:15
20:00
21:45
23:30
1:15
3:00
4:45
6:30
8:15
Time of Day
Loop1
Traficon


Volume Comparison - Lane 2
Volume (15 Min)
700
600
500
400
300
200
100
0
9:30
11:15
13:00
14:45
16:30
18:15
20:00
21:45
23:30
1:15
3:00
4:45
6:30
8:15
Time of Day
Loop2
Traficon


Volume Comparison - Lane 3
Volume (15 Min)
700
600
500
400
300
200
100
0
9:30
11:15
13:00
14:45
16:30
18:15
20:00
21:45
23:30
1:15
3:00
4:45
6:30
8:15
Time of Day
Loop3
Traficon


Speed Comparison - Lane 1
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
9:30
11:15
13:00
14:45
16:30
18:15
20:00
21:45
23:30
1:15
3:00
4:45
6:30
8:15
Time of Day
Loop1
Traficon


Speed Comparison - Lane 2
15 Min Average Speed (MPH)
80
70
60
50
40
30
20
10
0
9:30
11:15
13:00
14:45
16:30
18:15
20:00
21:45
23:30
1:15
3:00
4:45
6:30
8:15
Time of Day
Loop2
Traficon


Speed Comparison - Lane 3
15 Min Average Speed (MPH
80
70
60
50
40
30
20
10
0
9:30
11:15
13:00
14:45
16:30
18:15
20:00
21:45
23:30
1:15
3:00
4:45
6:30
8:15
Time of Day
Loop3
Traficon

24-Hour Test 24
Intersection - Volume
00:00 AM, March 22, 2002 to 24:00 PM, March 22, 2002

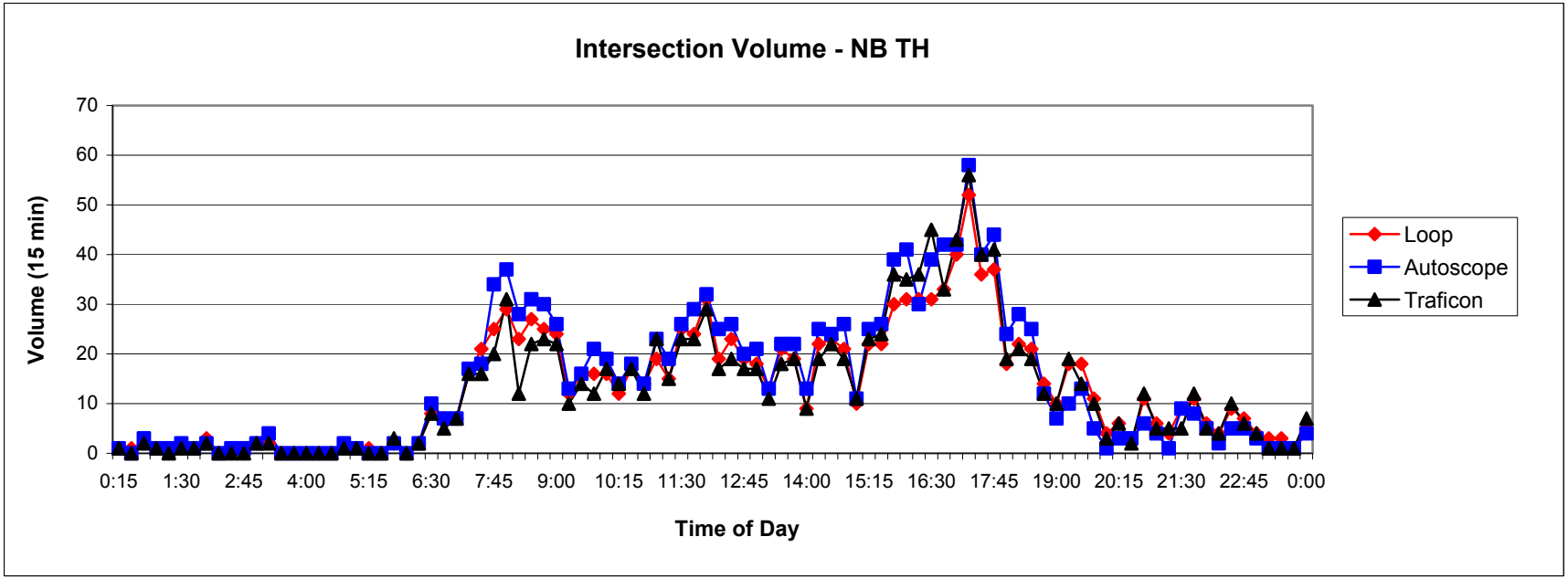
Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
Autoscope	Overhead	0	37	TH	2,957	3,492	18.09%	17.79%	29.38	0.9941
				RT	1,259	1,375	9.21%	19.54%	13.76	0.9794
Traficon	Overhead	0	37	TH	2,957	3,483	17.79%	17.79%	29.52	0.9930
				RT	1,259	1,233	-2.07%	12.55%	12.28	0.9753

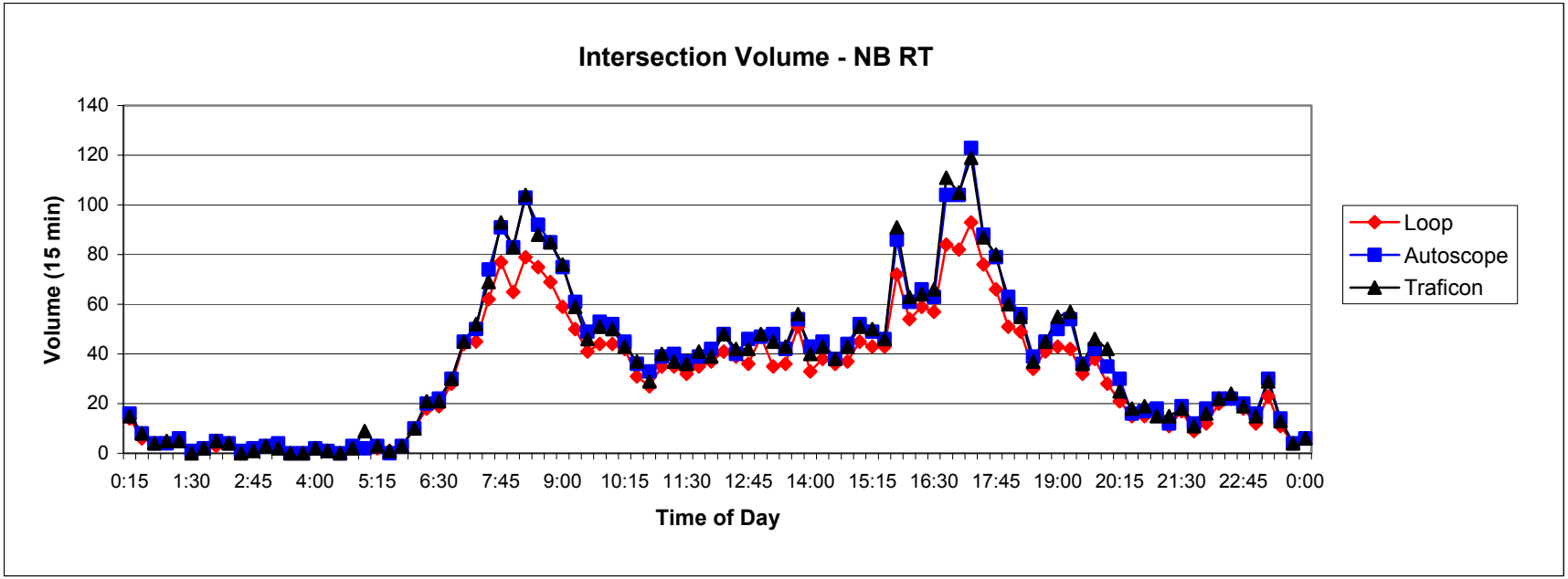
(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)

(3). RT: Right Turn Lane, TH: Through Lane

(4). Baseline is 18% undercounting


Intersection Volume - NB TH
Volume (15 min)
70
60
50
40
30
20
10
0
0:15
1:30
2:45
4:00
5:15
6:30
7:45
9:00
10:15
11:30
12:45
14:00
15:15
16:30
17:45
19:00
20:15
21:30
22:45
0:00
Time of Day
Loop
Autoscope
Traficon

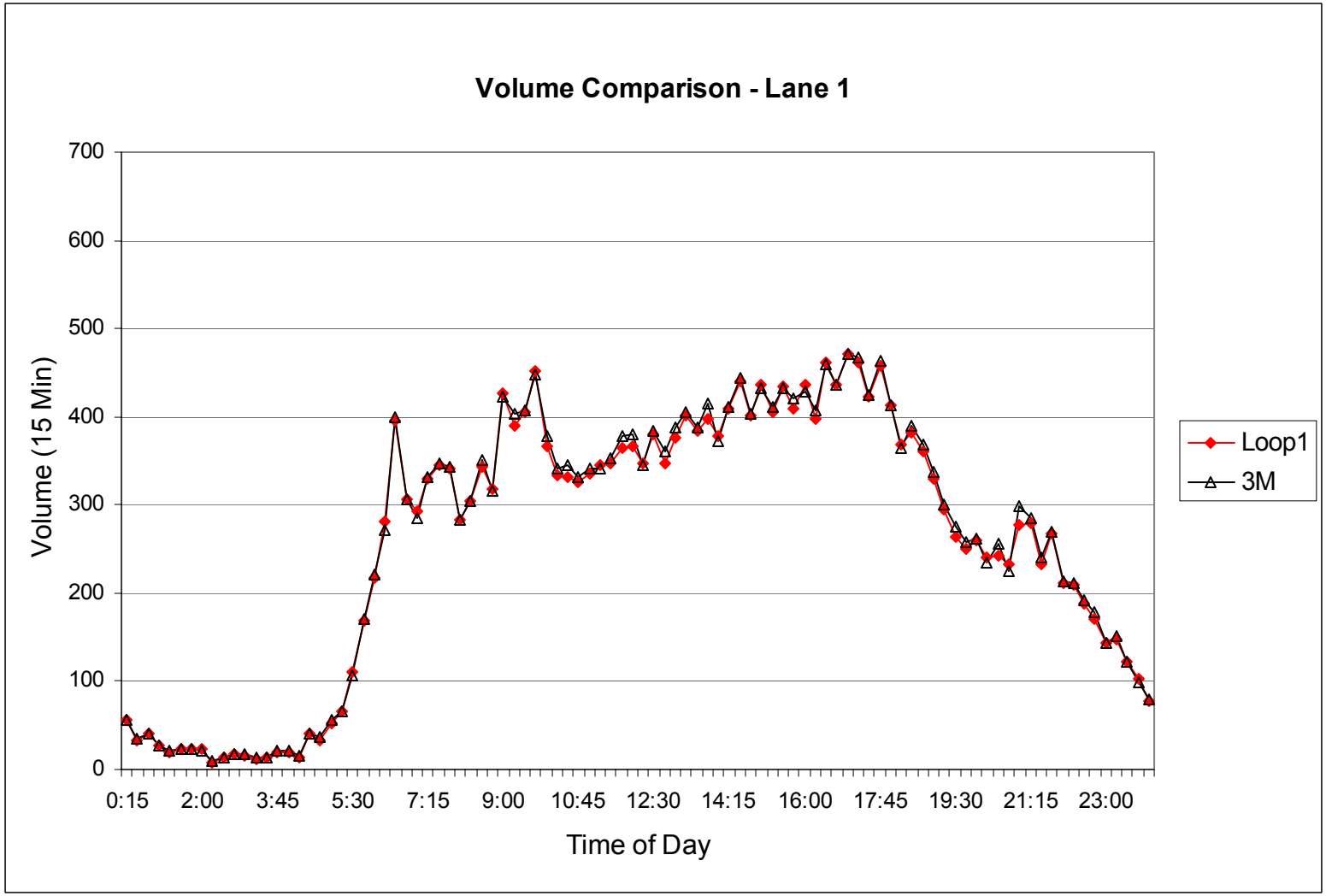

Intersection Volume - NB RT
Volume (15 min)
140
120
100
80
60
40
20
0
0:15
1:30
2:45
4:00
5:15
6:30
7:45
9:00
10:15
11:30
12:45
14:00
15:15
16:30
17:45
19:00
20:15
21:30
22:45
0:00
Time of Day
Loop
Autoscope
Traficon

24-Hour Test 25
Freeway - Volume
00:00 AM, April 22, 2002 to 24:00 PM, April 22, 2002

Sensor	Installation	Side Offset (ft)	Height (ft)	Lane	Baseline 24 Hour Total Volume	Sensor 24 Hour Total Volume	Percent Difference (1)	Weighted Absolute Average Percent Difference (2)	Standard Deviation	Correlation Coefficient
3M	Under Bridge	0	0	1	24,960	25,246	1.15%	1.82%	152	0.9993

(1). Percent Difference = (24 Hour Total Sensor Volume – 24 Hour Total Baseline Volume) / (24 Hour Total Baseline Volume)

(2). Weighted Absolute Average Percent Difference = Sum(Absolute(15min Sensor Volume - 15min Baseline Volume))/(24 Hour Total Baseline Volume)


Volume Comparison - Lane 1
Volume (15 Min)
700
600
500
400
300
200
100
0
0:15
2:00
3:45
5:30
7:15
9:00
10:45
12:30
14:15
16:00
17:45
19:30
21:15
23:00
Time of Day
Loop1
3M