



ARIZONA
TEXAS
NEW MEXICO
OKLAHOMA

February 19, 2022

Mr. Joe Carter, P.E., CFM
Partner
Birkhoff, Hendricks & Carter, L.L.P.
11910 Greenville Ave, Suite 600
Dallas, Texas 75243

Re: *SW Allen Boulevard Speed Zoning Study in Wylie, Texas*

Dear Mr. Carter:

Lee Engineering has conducted an analysis of vehicular speeds along SW Allen Boulevard within the City of Wylie. This letter report presents the results of our study.

SW Allen Boulevard is constructed as a four-lane divided concrete roadway between Stone Road and Alfred Drive. It is a two-lane undivided asphalt roadway south of Alfred Drive in the City of Wylie. SW Allen Boulevard is designated as a Secondary Thoroughfare (Type C) 100' R.O.W., 4-Lane roadway on the *City of Wylie 2018 Thoroughfare Plan*. The existing speed limit along SW Allen Boulevard is 45 miles per hour (mph) north of Twin Oaks Drive and 55 mph south of Twin Oaks Drive.

24 HOUR AUTOMATED SPEED DATA

Lee Engineering collected automated speed data using pneumatic tubes on Tuesday, December 14, 2021. Speed data was gathered over a 24 hour period and then filtered to eliminate vehicles traveling less than four seconds apart in order to better represent free flowing vehicles. The 24-hour speed data for SW Allen Boulevard at each speed data location is provided in the appendix.

The four second headway filtered automated speed data is summarized in Table 1.

Table 1: 24 Hour Automated Speed Data Summary – SW Allen Boulevard

Direction	Location	Total Vehicles	15 th Percentile	50 th Percentile	85 th Percentile
NB	South of Chestnut Hill Drive	648	37	43	48
SB		618	36	42	47
NB	South of Collins Boulevard	523	35	41	48
SB		511	33	42	49
NB	North of Alanis Drive	530	31	40	48
SB		559	32	41	49
NB	South of Elm Drive	587	34	43	49
SB		511	37	45	52
NB	North of Cold Stream Drive	495	36	42	47
SB		440	40	45	51

TxDOT's *Procedures for Establishing Speed Zones* indicate that the speed limit for a section of roadway should be set based upon the 85th percentile spot speed rounded to the nearest 5 mph increment. For instance, a speed limit established based on an 85th percentile speed of 39 would typically be 40 mph. Other factors such as the roadway geometric constraints, driveway density, pedestrian activity, development density and crash history can be used to establish a speed zone at a speed lower than the rounded 85th percentile value.

Based on the 85th percentile alone, 50 mph would be an appropriate speed limit at SW Allen Boulevard.

There are residential land uses along the study roadway and the driveway density is high. There are sidewalks along both sides of SW Allen Boulevard, from Stone Road to just north of Alfred Drive. There are no sidewalks along SW Allen Boulevard from Alfred Drive to County Line Road. Given these conditions, a lower speed limit should be considered.

CRASH DATA

TxDOT's *Procedures for Establishing Speed Zones* allows consideration of lower speed limits for roadways with crash rates higher than the average statewide traffic crash rates for similar roadways.

Forty (40) reported crashes were identified as having occurred over the past three (3) years along the study roadway. Among these crashes there were:

- Seven (7) angle crashes;
- Sixteen (16) single vehicle crashes;
- Six (6) opposite direction – one straight, one left-turn crashes;
- Ten (10) rear end crashes; and
- One (1) same direction – both left turning crash.

There were twenty-four (24) non-injuries, ten (10) possible injuries, four (4) suspected minor injuries, one (1) unknown injury, and one (1) suspected serious injury among these crashes.

The crash rate was determined for the northern divided section of SW Allen Boulevard and the southern undivided section of SW Allen Boulevard and then compared to statewide average crash rates for similar roadways. The statewide average crash rate per 100 million vehicle miles (MVM) for a two-lane, two-way roadway in an urban area is 184.09 crashes. The statewide average crash rate per 100 MVM for a divided roadway with four or more lanes in an urban area is 140.68 crashes.

The calculated crash rate for the divided roadway segment is 197 crashes per 100 MVM. The calculated crash rate for the undivided roadway segment is 248 crashes per 100 MVM. Both of these are above the statewide average crash rate and supports the consideration to lower speed limits along the study section of SW Allen Boulevard. The estimated crash rates for SW Allen Boulevard and the TxDOT Statewide Traffic Crash Rates are provided in the appendix

The spot speed data collected indicates that the existing 85th percentile speeds along SW Allen Boulevard support a 50 mph speed limit at all data collection locations. However, the calculated crash rates along the study roadway supports the consideration for a 45 mph speed limit. An alternate approach for setting speed limits was developed by the Federal Highway Administration (FHWA). The FHWA USLIMITS2 website for speed limit recommendations recommends a 40 mph speed limit based on the calculated crash rates along the study roadway.

RECOMMENDATION

Based on our review of collected speed data and available crash data, Lee Engineering recommends that the speed limit be set at 45 mph along SW Allen Boulevard from Stone Road to County Line Road.

If you have any questions about this letter, please feel free to call me at your convenience at 972.248.3006.

Sincerely,



Digitally signed by Joseph
T Short
Date: 2022.02.19 14:31:36
-06'00'

Joseph T. Short, P.E., PTOE
President
Lee Engineering
TBPE Firm F-450

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 N OF ALANIS DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Page 1

Latitude: 0' 0.0000 South

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	8	20	18	26	23	8	2	1	0	0	0	106	48	53
11:00	0	0	1	11	29	18	33	30	7	1	0	0	0	0	130	48	51
12 PM	0	0	2	6	32	22	39	20	11	0	0	0	0	0	132	47	51
13:00	0	0	2	14	33	29	42	32	9	0	1	0	0	0	162	47	51
Total	0	0	5	39	114	87	140	105	35	3	2	0	0	0	530		
Percent	0.0%	0.0%	0.9%	7.4%	21.5%	16.4%	26.4%	19.8%	6.6%	0.6%	0.4%	0.0%	0.0%	0.0%			
AM Peak			11:00	11:00	11:00	10:00	11:00	11:00	10:00	10:00	10:00				11:00		
Vol.			1	11	29	18	33	30	8	2	1				130		
PM Peak			12:00	13:00	13:00	13:00	13:00	13:00	12:00		13:00				13:00		
Vol.			2	14	33	29	42	32	11		1				162		
Total	0	0	5	39	114	87	140	105	35	3	2	0	0	0	530		
Percent	0.0%	0.0%	0.9%	7.4%	21.5%	16.4%	26.4%	19.8%	6.6%	0.6%	0.4%	0.0%	0.0%	0.0%			

15th Percentile : 31 MPH
50th Percentile : 40 MPH
85th Percentile : 48 MPH
95th Percentile : 51 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 245
Percent in Pace : 46.2%
Number of Vehicles > 55 MPH : 5
Percent of Vehicles > 55 MPH : 0.9%
Mean Speed(Average) : 41 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 N OF ALANIS DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Page 2

Latitude: 0' 0.0000 South

SB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	8	31	27	32	31	15	3	0	0	0	0	147	49	53
11:00	0	0	0	7	29	22	19	35	9	4	1	0	0	0	126	49	54
12 PM	0	0	1	12	31	25	23	33	14	6	0	0	0	0	145	49	54
13:00	0	0	3	5	22	21	28	40	18	4	0	0	0	0	141	50	54
Total	0	0	4	32	113	95	102	139	56	17	1	0	0	0	559		
Percent	0.0%	0.0%	0.7%	5.7%	20.2%	17.0%	18.2%	24.9%	10.0%	3.0%	0.2%	0.0%	0.0%	0.0%			
AM Peak				10:00	10:00	10:00	10:00	11:00	10:00	11:00	11:00				10:00		
Vol.				8	31	27	32	35	15	4	1				147		
PM Peak			13:00	12:00	12:00	12:00	13:00	13:00	13:00	12:00					12:00		
Vol.			3	12	31	25	28	40	18	6					145		
Total	0	0	4	32	113	95	102	139	56	17	1	0	0	0	559		
Percent	0.0%	0.0%	0.7%	5.7%	20.2%	17.0%	18.2%	24.9%	10.0%	3.0%	0.2%	0.0%	0.0%	0.0%			

15th Percentile : 32 MPH
50th Percentile : 41 MPH
85th Percentile : 49 MPH
95th Percentile : 54 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 241
Percent in Pace : 43.1%
Number of Vehicles > 55 MPH : 18
Percent of Vehicles > 55 MPH : 3.2%
Mean Speed(Average) : 42 MPH

FM 544 N OF ALANIS DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

NB, SB

15th Percentile :	31 MPH
50th Percentile :	41 MPH
85th Percentile :	48 MPH
95th Percentile :	53 MPH

Stats	10 MPH Pace Speed :	41-50 MPH
	Number in Pace :	486
	Percent in Pace :	44.6%
	Number of Vehicles > 55 MPH :	23
	Percent of Vehicles > 55 MPH :	2.1%
	Mean Speed(Average) :	41 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 N OF COLD STREAM DR - SPEED W 4 SEC FILTER
Longitude: 0° 0.0000 East
Station ID:

Page 1

Latitude: 0° 0.0000 South

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	1	0	2	1	8	30	41	25	4	1	0	0	0	0	113	47	49
11:00	0	0	0	4	6	25	37	28	2	1	0	0	0	0	103	47	49
12 PM	0	0	0	2	7	23	60	33	5	1	0	1	0	0	132	48	50
13:00	0	0	0	3	13	32	50	41	5	3	0	0	0	0	147	48	50
Total	1	0	2	10	34	110	188	127	16	6	0	1	0	0	495		
Percent	0.2%	0.0%	0.4%	2.0%	6.9%	22.2%	38.0%	25.7%	3.2%	1.2%	0.0%	0.2%	0.0%	0.0%			
AM Peak	10:00		10:00	11:00	10:00	10:00	10:00	11:00	10:00	10:00					10:00		
Vol.	1		2	4	8	30	41	28	4	1					113		
PM Peak				13:00	13:00	13:00	12:00	13:00	12:00	13:00		12:00			13:00		
Vol.				3	13	32	60	41	5	3		1			147		
Total	1	0	2	10	34	110	188	127	16	6	0	1	0	0	495		
Percent	0.2%	0.0%	0.4%	2.0%	6.9%	22.2%	38.0%	25.7%	3.2%	1.2%	0.0%	0.2%	0.0%	0.0%			

15th Percentile : 36 MPH
50th Percentile : 42 MPH
85th Percentile : 47 MPH
95th Percentile : 49 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 315
Percent in Pace : 63.6%
Number of Vehicles > 55 MPH : 7
Percent of Vehicles > 55 MPH : 1.4%
Mean Speed(Average) : 43 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 N OF COLD STREAM DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Page 2

Latitude: 0' 0.0000 South

SB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	1	2	11	36	32	21	2	0	0	0	0	105	51	54
11:00	0	0	0	0	4	17	28	39	10	3	1	0	0	0	102	49	54
12 PM	0	1	0	0	3	15	36	32	23	5	0	0	0	0	115	52	54
13:00	0	0	0	1	0	8	39	51	18	1	0	0	0	0	118	50	53
Total	0	1	0	2	9	51	139	154	72	11	1	0	0	0	440		
Percent	0.0%	0.2%	0.0%	0.5%	2.0%	11.6%	31.6%	35.0%	16.4%	2.5%	0.2%	0.0%	0.0%	0.0%			
AM Peak				10:00	11:00	11:00	10:00	11:00	10:00	11:00	11:00				10:00		
Vol.				1	4	17	36	39	21	3	1				105		
PM Peak		12:00		13:00	12:00	12:00	13:00	13:00	12:00	12:00					13:00		
Vol.		1		1	3	15	39	51	23	5					118		
Total	0	1	0	2	9	51	139	154	72	11	1	0	0	0	440		
Percent	0.0%	0.2%	0.0%	0.5%	2.0%	11.6%	31.6%	35.0%	16.4%	2.5%	0.2%	0.0%	0.0%	0.0%			

15th Percentile : 40 MPH
50th Percentile : 45 MPH
85th Percentile : 51 MPH
95th Percentile : 54 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 293
Percent in Pace : 66.6%
Number of Vehicles > 55 MPH : 12
Percent of Vehicles > 55 MPH : 2.7%
Mean Speed(Average) : 46 MPH

FM 544 N OF COLD STREAM DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

NB, SB

Stats	10 MPH Pace Speed :	41-50 MPH
	Number in Pace :	608
	Percent in Pace :	65.0%
	Number of Vehicles > 55 MPH :	19
	Percent of Vehicles > 55 MPH :	2.0%
	Mean Speed(Average) :	44 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 S OF CHESTNUT HILL DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Page 1

Latitude: 0' 0.0000 South

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	0	2	19	51	54	7	1	0	0	0	0	134	48	50
11:00	0	0	1	5	7	31	72	34	17	1	0	0	0	0	168	48	52
12 PM	0	1	0	1	7	29	74	40	10	1	0	0	0	0	163	48	51
13:00	0	0	0	2	7	28	71	59	9	6	0	0	1	0	183	49	53
Total	0	1	1	8	23	107	268	187	43	9	0	0	1	0	648		
Percent	0.0%	0.2%	0.2%	1.2%	3.5%	16.5%	41.4%	28.9%	6.6%	1.4%	0.0%	0.0%	0.2%	0.0%			
AM Peak			11:00	11:00	11:00	11:00	11:00	10:00	11:00	10:00					11:00		
Vol.			1	5	7	31	72	54	17	1					168		
PM Peak		12:00		13:00	12:00	12:00	12:00	13:00	12:00	13:00			13:00		13:00		
Vol.		1		2	7	29	74	59	10	6			1		183		
Total	0	1	1	8	23	107	268	187	43	9	0	0	1	0	648		
Percent	0.0%	0.2%	0.2%	1.2%	3.5%	16.5%	41.4%	28.9%	6.6%	1.4%	0.0%	0.0%	0.2%	0.0%			

15th Percentile : 37 MPH
50th Percentile : 43 MPH
85th Percentile : 48 MPH
95th Percentile : 52 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 455
Percent in Pace : 70.2%
Number of Vehicles > 55 MPH : 10
Percent of Vehicles > 55 MPH : 1.5%
Mean Speed(Average) : 44 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 S OF CHESTNUT HILL DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Latitude: 0' 0.0000 South

SB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	3	9	52	48	24	2	1	0	0	0	0	139	46	49
11:00	1	0	1	4	6	42	54	26	5	1	0	0	0	0	140	47	49
12 PM	0	0	0	3	11	35	68	35	8	1	0	0	0	0	161	47	50
13:00	0	0	0	2	4	31	83	44	11	3	0	0	0	0	178	48	52
Total	1	0	1	12	30	160	253	129	26	6	0	0	0	0	618		
Percent	0.2%	0.0%	0.2%	1.9%	4.9%	25.9%	40.9%	20.9%	4.2%	1.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00		11:00	11:00	10:00	10:00	11:00	11:00	11:00	10:00					11:00		
Vol.	1		1	4	9	52	54	26	5	1					140		
PM Peak				12:00	12:00	12:00	13:00	13:00	13:00	13:00					13:00		
Vol.				3	11	35	83	44	11	3					178		
Total	1	0	1	12	30	160	253	129	26	6	0	0	0	0	618		
Percent	0.2%	0.0%	0.2%	1.9%	4.9%	25.9%	40.9%	20.9%	4.2%	1.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 36 MPH
50th Percentile : 42 MPH
85th Percentile : 47 MPH
95th Percentile : 50 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 413
Percent in Pace : 66.8%
Number of Vehicles > 55 MPH : 6
Percent of Vehicles > 55 MPH : 1.0%
Mean Speed(Average) : 42 MPH

FM 544 S OF CHESTNUT HILL DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

NB, SB

Stats	10 MPH Pace Speed :	41-50 MPH
	Number in Pace :	837
	Percent in Pace :	66.1%
	Number of Vehicles > 55 MPH :	16
	Percent of Vehicles > 55 MPH :	1.3%
	Mean Speed(Average) :	43 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 S OF COLLINS BLVD - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Latitude: 0' 0.0000 South

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	0	12	18	41	18	6	0	0	0	0	0	95	47	51
11:00	0	0	1	5	13	36	51	25	8	0	0	0	0	0	139	47	50
12 PM	0	0	0	5	13	30	50	27	10	0	0	0	0	0	135	48	51
13:00	0	1	0	1	16	33	56	34	12	1	0	0	0	0	154	48	52
Total	0	1	1	11	54	117	198	104	36	1	0	0	0	0	523		
Percent	0.0%	0.2%	0.2%	2.1%	10.3%	22.4%	37.9%	19.9%	6.9%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak			11:00	11:00	11:00	11:00	11:00	11:00	11:00						11:00		
Vol.			1	5	13	36	51	25	8						139		
PM Peak		13:00		12:00	13:00	13:00	13:00	13:00	13:00	13:00					13:00		
Vol.		1		5	16	33	56	34	12	1					154		
Total	0	1	1	11	54	117	198	104	36	1	0	0	0	0	523		
Percent	0.0%	0.2%	0.2%	2.1%	10.3%	22.4%	37.9%	19.9%	6.9%	0.2%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 35 MPH
50th Percentile : 41 MPH
85th Percentile : 48 MPH
95th Percentile : 51 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 315
Percent in Pace : 60.2%
Number of Vehicles > 55 MPH : 1
Percent of Vehicles > 55 MPH : 0.2%
Mean Speed(Average) : 42 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 S OF COLLINS BLVD - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Page 2

Latitude: 0' 0.0000 South

SB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	4	23	28	34	25	15	2	0	0	0	0	131	49	53
11:00	1	0	0	6	20	20	30	31	4	5	0	0	0	0	117	48	53
12 PM	0	0	1	0	22	22	39	35	11	2	0	0	0	0	132	49	52
13:00	0	0	1	2	13	22	31	43	12	6	1	0	0	0	131	49	55
Total	1	0	2	12	78	92	134	134	42	15	1	0	0	0	511		
Percent	0.2%	0.0%	0.4%	2.3%	15.3%	18.0%	26.2%	26.2%	8.2%	2.9%	0.2%	0.0%	0.0%	0.0%			
AM Peak	11:00			11:00	10:00	10:00	10:00	11:00	10:00	11:00					10:00		
Vol.	1			6	23	28	34	31	15	5					131		
PM Peak			12:00	13:00	12:00	12:00	12:00	13:00	13:00	13:00	13:00				12:00		
Vol.			1	2	22	22	39	43	12	6	1				132		
Total	1	0	2	12	78	92	134	134	42	15	1	0	0	0	511		
Percent	0.2%	0.0%	0.4%	2.3%	15.3%	18.0%	26.2%	26.2%	8.2%	2.9%	0.2%	0.0%	0.0%	0.0%			

15th Percentile : 33 MPH
50th Percentile : 42 MPH
85th Percentile : 49 MPH
95th Percentile : 53 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 268
Percent in Pace : 52.4%
Number of Vehicles > 55 MPH : 16
Percent of Vehicles > 55 MPH : 3.1%
Mean Speed(Average) : 43 MPH

Stats	10 MPH Pace Speed :	41-50 MPH
	Number in Pace :	570
	Percent in Pace :	55.1%
	Number of Vehicles > 55 MPH :	17
	Percent of Vehicles > 55 MPH :	1.6%
	Mean Speed(Average) :	42 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 S OF ELM DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Page 1

Latitude: 0' 0.0000 South

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	7	15	21	38	32	16	2	0	0	0	0	131	49	53
11:00	0	0	0	6	12	24	39	44	10	3	0	0	0	0	138	49	53
12 PM	0	0	0	4	16	22	35	47	15	6	1	0	0	0	146	50	54
13:00	0	0	0	8	27	26	49	39	18	3	1	1	0	0	172	49	54
Total	0	0	0	25	70	93	161	162	59	14	2	1	0	0	587		
Percent	0.0%	0.0%	0.0%	4.3%	11.9%	15.8%	27.4%	27.6%	10.1%	2.4%	0.3%	0.2%	0.0%	0.0%			
AM Peak				10:00	10:00	11:00	11:00	11:00	10:00	11:00					11:00		
Vol.				7	15	24	39	44	16	3					138		
PM Peak				13:00	13:00	13:00	13:00	12:00	13:00	12:00	12:00	13:00			13:00		
Vol.				8	27	26	49	47	18	6	1	1			172		
Total	0	0	0	25	70	93	161	162	59	14	2	1	0	0	587		
Percent	0.0%	0.0%	0.0%	4.3%	11.9%	15.8%	27.4%	27.6%	10.1%	2.4%	0.3%	0.2%	0.0%	0.0%			

15th Percentile : 34 MPH
50th Percentile : 43 MPH
85th Percentile : 49 MPH
95th Percentile : 53 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 323
Percent in Pace : 55.0%
Number of Vehicles > 55 MPH : 17
Percent of Vehicles > 55 MPH : 2.9%
Mean Speed(Average) : 43 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

FM 544 S OF ELM DR - SPEED W 4 SEC FILTER
Longitude: 0' 0.0000 East
Station ID:

Latitude: 0' 0.0000 South

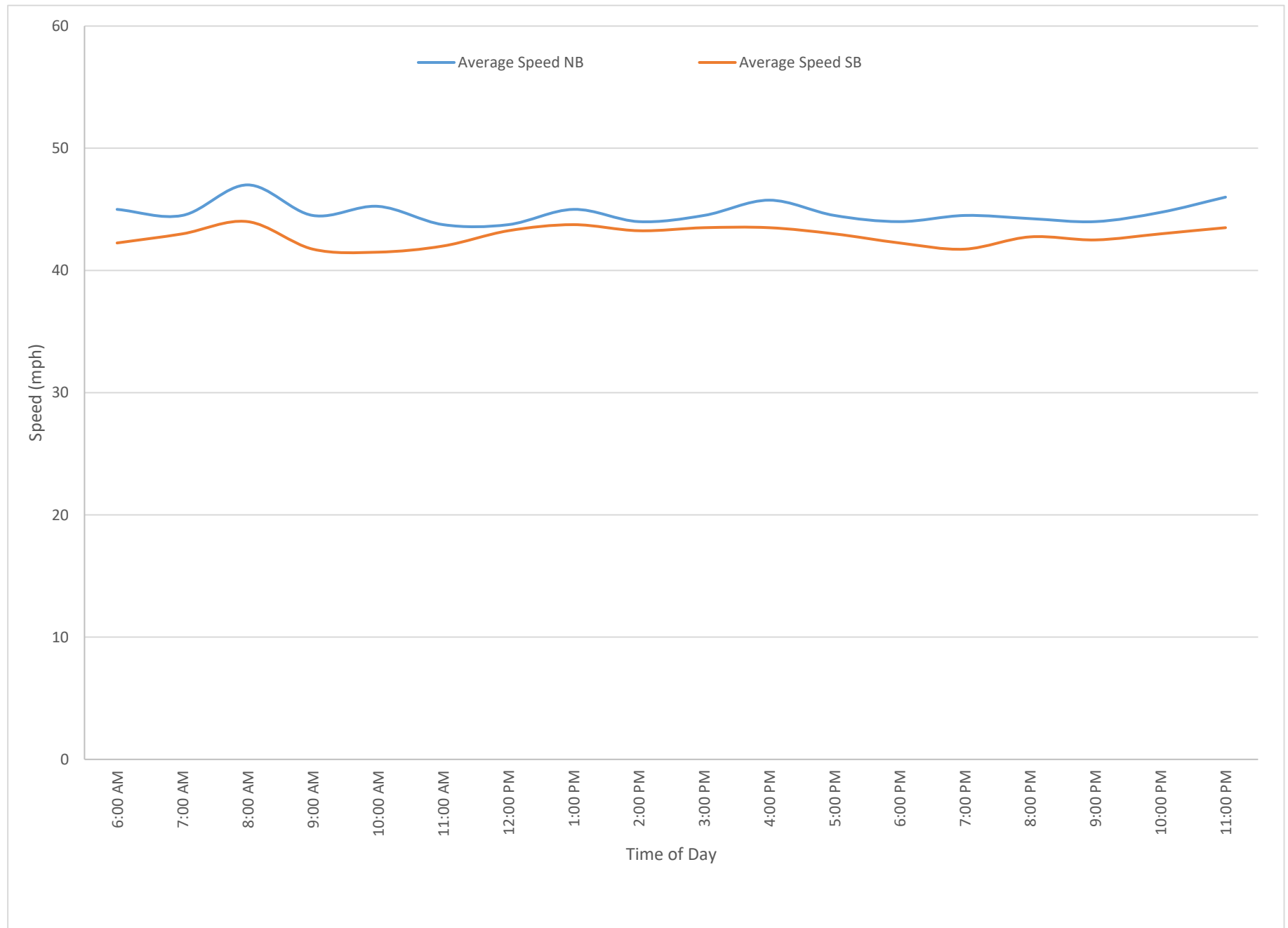
SB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
12/14/21	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	0	3	8	15	33	39	23	3	1	0	0	0	125	51	54
11:00	0	0	0	0	8	15	34	36	18	5	1	0	0	0	117	51	55
12 PM	0	0	0	2	10	17	39	33	29	8	0	0	0	0	138	52	55
13:00	0	0	0	4	14	11	31	38	29	4	0	0	0	0	131	52	54
Total	0	0	0	9	40	58	137	146	99	20	2	0	0	0	511		
Percent	0.0%	0.0%	0.0%	1.8%	7.8%	11.4%	26.8%	28.6%	19.4%	3.9%	0.4%	0.0%	0.0%	0.0%			
AM Peak				10:00	10:00	10:00	11:00	10:00	10:00	11:00	10:00				10:00		
Vol.				3	8	15	34	39	23	5	1				125		
PM Peak				13:00	13:00	12:00	12:00	13:00	12:00	12:00					12:00		
Vol.				4	14	17	39	38	29	8					138		
Total	0	0	0	9	40	58	137	146	99	20	2	0	0	0	511		
Percent	0.0%	0.0%	0.0%	1.8%	7.8%	11.4%	26.8%	28.6%	19.4%	3.9%	0.4%	0.0%	0.0%	0.0%			

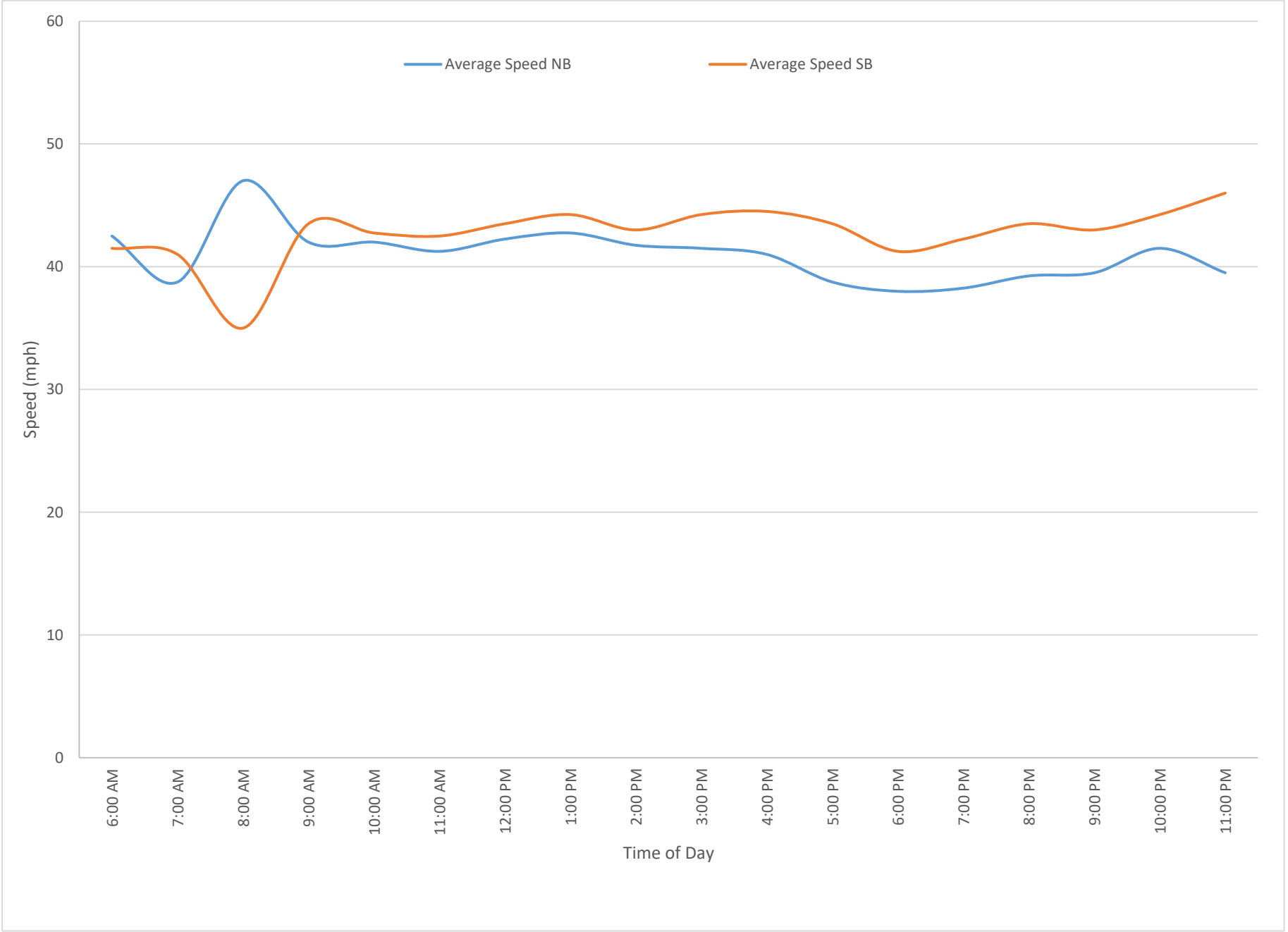
15th Percentile : 37 MPH
50th Percentile : 45 MPH
85th Percentile : 52 MPH
95th Percentile : 54 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 283
Percent in Pace : 55.4%
Number of Vehicles > 55 MPH : 22
Percent of Vehicles > 55 MPH : 4.3%
Mean Speed(Average) : 45 MPH

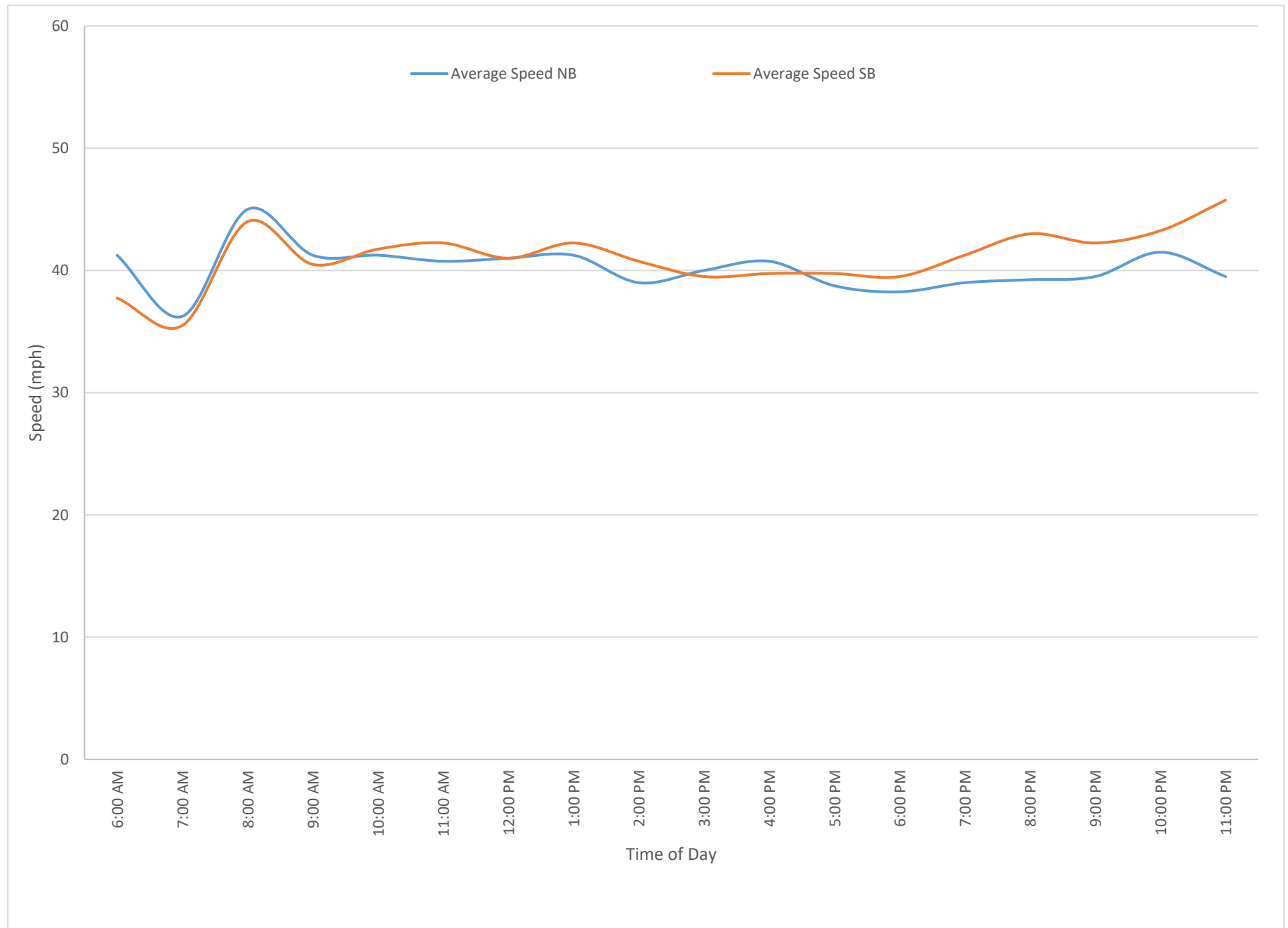
FM 544 South of Chestnut Hill Drive



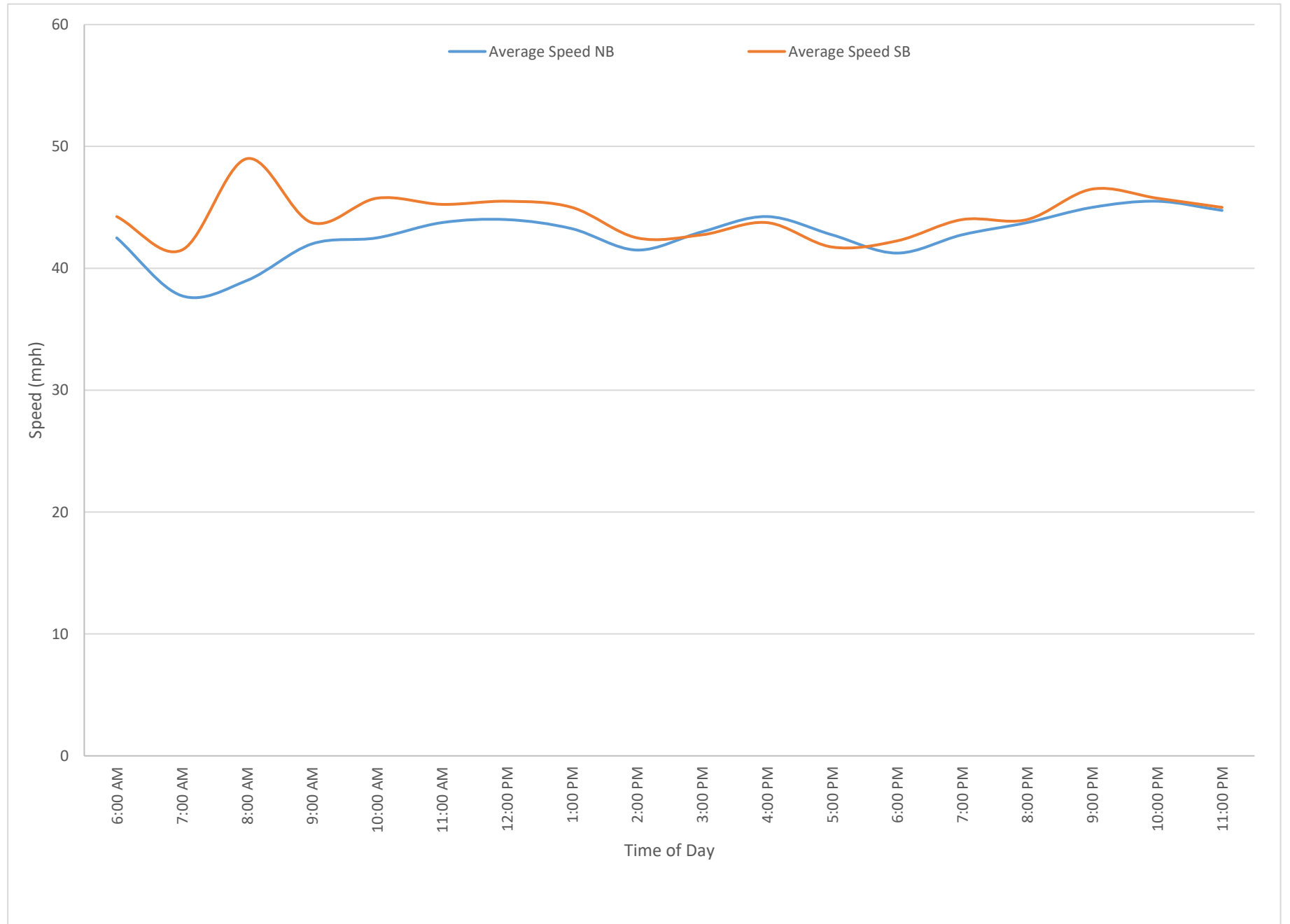
FM 544 South of Collins Boulevard



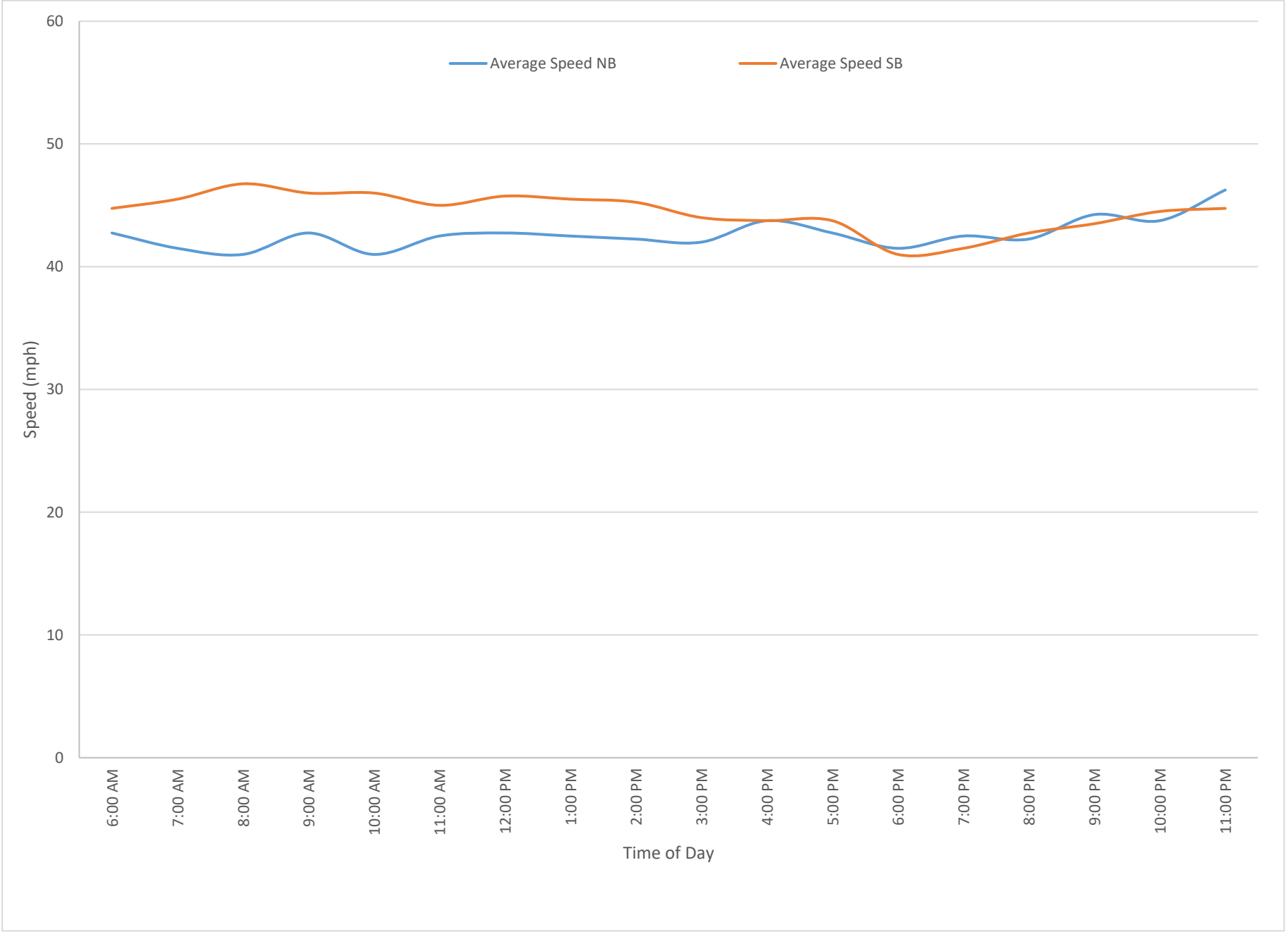
FM 544 North of Alanis Drive



FM 544 South of Elm Drive



FM 544 North of Cold Stream Drive





STATEWIDE TRAFFIC CRASH RATES

2020

By Highway System

Highway System	Traffic Crashes per 100 million vehicle miles	
	Rural	Urban
Interstate	49.33	127.94
US Highway	61.91	169.27
State Highway	79.92	188.41
Farm-to-Market	112.67	213.86

By Road Type

Road Type	Traffic Crashes per 100 million vehicle miles	
	Rural	Urban
2 lane, 2 way	90.42	184.09
4 or more lanes, divided	52.76	140.68
4 or more lanes, undivided	87.76	271.82

Information contained in this report represents reportable data collected from Texas Peace Officer's Crash Reports (CR-3) received and processed by the Department as of April 13, 2021.

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: SW Allen Blvd

Analyst: LEE Engineering

Date: 2022-01-04

Basic Project Information

Route Name: SW Allen Blvd

State: Texas

County: Collin County

City: Wylie city

Route Type: Road Section in Developed Area

Route Status: Existing

Roadway Information

Section Length: 1.5 mile(s)

Statutory Speed Limit: 30 mph

Existing Speed Limit: 55 mph

Adverse Alignment: No

One-Way Street: No

Divided/Undivided: Undivided

Number of Through Lanes: 2

Area Type: Residential-Collector/Arterial

Number of Driveways: 25

Number of Signals: 0

Crash Data Information

Crash Data Years: 3.00

Crash AADT: 8500 veh/day

Total Number of Crashes: 40

Total Number of Injury Crashes: 16

Section Crash Rate: 287 per 100 MVM

Section Injury Crash Rate: 115 per 100 MVM

Crash Rate Average for Similar Roads: 184

Injury Rate Average for Similar Roads: 76

Traffic Information

85th Percentile Speed: 47 mph

50th Percentile Speed: 41 mph

AADT: 8500 veh/day

On Street Parking and Usage: Not High

Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:



Note: The final recommended speed limit is higher than the 30 mph statutory speed limit for this type of road. An engineering study such as the one carried out with USLIMITS is usually required to set a speed limit above the statutory limit.

Note: The section crash rate of 287 per 100 MVM is above the critical rate (247). The injury crash rate for the section of 115 per 100 MVM is more than 30 percent above the average for similar roads (76) but below the critical rate (118). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

Disclaimer: The U.S. Government assumes no liability for the use of the information contained in this report. This report does not constitute a standard, specification, or regulation.

Equations Used in the Crash Data Calculations

Exposure (M)

$$M = (\text{Section AADT} * 365 * \text{Section Length} * \text{Duration of Crash Data}) / (100000000)$$

$$M = (8500 * 365 * 1.5 * 3.00) / (100000000)$$

$$M = 0.1396$$

Crash Rate (Rc)

$$Rc = (\text{Section Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$

$$Rc = (13.33 * 100000000) / (8500 * 365 * 1.5)$$

$$Rc = 286.51 \text{ crashes per 100 MVM}$$

Injury Rate (Ri)

$$Ri = (\text{Section Injury Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$

$$Ri = (5.33 * 100000000) / (8500 * 365 * 1.5)$$

$$Ri = 114.60 \text{ injuries per 100 MVM}$$

Critical Crash Rate (Cc)

$$Cc = \text{Crash Average of Similar Sections} + 1.645 * (\text{Crash Average of Similar Sections} / \text{Exposure}) ^ {1/2} + (1 /$$

(2 * Exposure))

$$C_c = 184.09 + 1.645 * (184.09 / 0.1396)^{(1/2)} + (1 / (2 * 0.1396))$$

$C_c = 247.40$ crashes per 100 MVM

Critical Injury Rate (Ic)

$$I_c = \text{Injury Crash Average of Similar Sections} + 1.645 * (\text{Injury Crash Average of Similar Sections} / \text{Exposure})^{(1/2)} + (1 / (2 * \text{Exposure}))$$

$$I_c = 76.11 + 1.645 * (76.11 / 0.1396)^{(1/2)} + (1 / (2 * 0.1396))$$

$I_c = 118.10$ injuries per 100 MVM

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: SW Allen Blvd

Analyst: LEE Engineering

Date: 2022-01-04

Basic Project Information

Route Name: SW Allen Blvd

State: Texas

County: Collin County

City: Wylie city

Route Type: Road Section in Developed Area

Route Status: Existing

Roadway Information

Section Length: 1.5 mile(s)

Statutory Speed Limit: 30 mph

Existing Speed Limit: 55 mph

Adverse Alignment: No

One-Way Street: No

Divided/Undivided: Divided

Number of Through Lanes: 4

Area Type: Residential-Collector/Arterial

Number of Driveways: 25

Number of Signals: 0

Crash Data Information

Crash Data Years: 3.00

Crash AADT: 8500 veh/day

Total Number of Crashes: 40

Total Number of Injury Crashes: 16

Section Crash Rate: 287 per 100 MVM

Section Injury Crash Rate: 115 per 100 MVM

Crash Rate Average for Similar Roads: 141

Injury Rate Average for Similar Roads: 78

Traffic Information

85th Percentile Speed: 47 mph

50th Percentile Speed: 41 mph

AADT: 8500 veh/day

On Street Parking and Usage: Not High

Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:



Note: The final recommended speed limit is higher than the 30 mph statutory speed limit for this type of road. An engineering study such as the one carried out with USLIMITS is usually required to set a speed limit above the statutory limit.

Note: The section crash rate of 287 per 100 MVM is above the critical rate (196). The injury crash rate for the section of 115 per 100 MVM is more than 30 percent above the average for similar roads (78) but below the critical rate (120). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

Disclaimer: The U.S. Government assumes no liability for the use of the information contained in this report. This report does not constitute a standard, specification, or regulation.

Equations Used in the Crash Data Calculations

Exposure (M)

$$M = (\text{Section AADT} * 365 * \text{Section Length} * \text{Duration of Crash Data}) / (100000000)$$

$$M = (8500 * 365 * 1.5 * 3.00) / (100000000)$$

$$M = 0.1396$$

Crash Rate (Rc)

$$Rc = (\text{Section Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$

$$Rc = (13.33 * 100000000) / (8500 * 365 * 1.5)$$

$$Rc = 286.51 \text{ crashes per 100 MVM}$$

Injury Rate (Ri)

$$Ri = (\text{Section Injury Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$

$$Ri = (5.33 * 100000000) / (8500 * 365 * 1.5)$$

$$Ri = 114.60 \text{ injuries per 100 MVM}$$

Critical Crash Rate (Cc)

$$Cc = \text{Crash Average of Similar Sections} + 1.645 * (\text{Crash Average of Similar Sections} / \text{Exposure}) ^ {1/2} + (1 /$$

(2 * Exposure))

$$C_c = 140.68 + 1.645 * (140.68 / 0.1396)^{(1/2)} + (1 / (2 * 0.1396))$$

$C_c = 196.48$ crashes per 100 MVM

Critical Injury Rate (I_c)

$$I_c = \text{Injury Crash Average of Similar Sections} + 1.645 * (\text{Injury Crash Average of Similar Sections} / \text{Exposure})^{(1/2)} + (1 / (2 * \text{Exposure}))$$

$$I_c = 77.94 + 1.645 * (77.94 / 0.1396)^{(1/2)} + (1 / (2 * 0.1396))$$

$I_c = 120.39$ injuries per 100 MVM