

Memorandum

To: Michelle McCullough, P.E., CFM
Assistant Director
Public Works Department
City of Burleson

From: Jeff Whitacre, P.E., AICP, PTP
Kimley-Horn and Associates, Inc.

Date: August 23, 2022

Re: Hemphill Speed Study
Burleson, Texas



08/23/2022

PURPOSE

Kimley-Horn was retained by the City of Burleson, Texas to perform a speed study along Hemphill Street, between McAlister Road and Alsbury Boulevard. Hemphill Street runs in a northwest-southeast direction and has a posted speed limit of 35 mph.

The purpose of this memo is to evaluate the current speed of traffic along the roadway and existing geometry and propose a speed limit for vehicular traffic.

EXISTING CONDITIONS

Hemphill Street is a major collector that connects to Alsbury Boulevard to the south and FM 1187 to the north. Hemphill Street is a 44-foot-wide undivided four-lane facility from the all-way stop at McAlister Road to the signal at Alsbury Boulevard. Residents have reported vehicle speeds exceeding the 35-mph speed limit within the study area.

SPEED ANALYSIS

Data Collection

To evaluate the current speeds along Hemphill Street, bi-directional speed and volume data were collected just south of Windridge Lane for a period of 24 hours on Tuesday, May 24, 2022.

Results

Based upon the results of this study (see attached), the 85th percentile speed for NB and SB traffic was approximately 43 mph, just south of Windridge Lane. The results included 2,530 NB and 2,168 SB total passenger cars.

Data collection sheets are provided as **attachments** to this document.



CONCLUSIONS AND RECOMMENDATIONS

In most instances, a speed limit based on the 85th percentile speed best reflects the expectations of the largest proportion of drivers; is found by most to be a safe and comfortable limit; facilitates speed enforcement; and offers the greatest chance of achieving some uniformity in speeds on a given road.

Based on the collected data along Hemphill Street, the 85th percentile speed limit is 43 mph. Speed limit signs are currently placed that indicate a 35-mph speed, which leads to residents reporting speeding. The design speed for a major collector in Burleson is currently listed at 45 mph, so the 43-mph speed along the roadway is anticipated given the current design of Hemphill Street.

Based on these findings, we recommend increasing the 35-mph speed limit to a 45-mph speed limit.

If you have any questions, please contact me at jeff.whitacre@kimley-horn.com or by phone at 817-339-2254.



Attachments

1. Volume and Speed Raw Data Sheets

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

HEMPHILL ST SOUTH OF WINDRIDGE - SPEED 4 SEC FILTER
Site Code: 911
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
05/24/22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	1	0	4	16	47	20	5	1	0	0	0	0	0	94	42	46
11:00	0	0	2	2	20	50	35	7	1	1	0	0	0	0	118	43	47
12 PM	0	0	1	4	23	66	26	9	3	0	0	0	0	0	132	43	48
13:00	0	0	0	6	33	63	36	10	3	0	0	0	0	0	151	43	47
Total	0	1	3	16	92	226	117	31	8	1	0	0	0	0	495		
Percent	0.0%	0.2%	0.6%	3.2%	18.6%	45.7%	23.6%	6.3%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak		10:00	11:00	10:00	11:00	11:00	11:00	11:00	10:00	11:00					11:00		
Vol.		1	2	4	20	50	35	7	1	1					118		
PM Peak			12:00	13:00	13:00	12:00	13:00	13:00	12:00						13:00		
Vol.			1	6	33	66	36	10	3						151		
Total	0	1	3	16	92	226	117	31	8	1	0	0	0	0	495		
Percent	0.0%	0.2%	0.6%	3.2%	18.6%	45.7%	23.6%	6.3%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 32 MPH
50th Percentile : 37 MPH
85th Percentile : 43 MPH
95th Percentile : 47 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 343
Percent in Pace : 69.3%
Number of Vehicles > 55 MPH : 1
Percent of Vehicles > 55 MPH : 0.2%
Mean Speed(Average) : 39 MPH

GRAM Traffic North Texas, Inc.

1120 W Lovers Lane
Arlington, TX 76013

HEMPHILL ST SOUTH OF WINDRIDGE - SPEED 4 SEC FILTER
Site Code: 911
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
05/24/22	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	0	0	1	4	22	40	26	6	1	1	0	0	0	0	101	43	47
11:00	0	0	1	4	17	41	31	7	2	1	0	0	0	0	104	44	48
12 PM	0	0	0	4	11	43	36	8	2	1	0	0	0	0	105	44	48
13:00	0	0	1	6	10	42	35	10	0	1	0	0	0	0	105	44	47
Total	0	0	3	18	60	166	128	31	5	4	0	0	0	0	415		
Percent	0.0%	0.0%	0.7%	4.3%	14.5%	40.0%	30.8%	7.5%	1.2%	1.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak			10:00	10:00	10:00	11:00	11:00	11:00	11:00	10:00					11:00		
Vol.			1	4	22	41	31	7	2	1					104		
PM Peak			13:00	13:00	12:00	12:00	12:00	13:00	12:00	12:00					12:00		
Vol.			1	6	11	43	36	10	2	1					105		
Total	0	0	3	18	60	166	128	31	5	4	0	0	0	0	415		
Percent	0.0%	0.0%	0.7%	4.3%	14.5%	40.0%	30.8%	7.5%	1.2%	1.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 33 MPH
50th Percentile : 38 MPH
85th Percentile : 44 MPH
95th Percentile : 48 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 294
Percent in Pace : 70.8%
Number of Vehicles > 55 MPH : 4
Percent of Vehicles > 55 MPH : 1.0%
Mean Speed(Average) : 39 MPH

Stats	10 MPH Pace Speed :	36-45 MPH
	Number in Pace :	637
	Percent in Pace :	70.0%
	Number of Vehicles > 55 MPH :	5
	Percent of Vehicles > 55 MPH :	0.5%
	Mean Speed(Average) :	39 MPH