

January 31, 2019

PK# 3016-18.509

TRAFFIC ASSESSMENT

Project:

Webb Chapel Single Family
In Dallas, Texas

Prepared for:

City of Dallas

On behalf of:

Northaven Trail Village, LLC

Prepared by:

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TRAFFIC ASSESSMENT

Webb Chapel Single Family

Dallas, Texas

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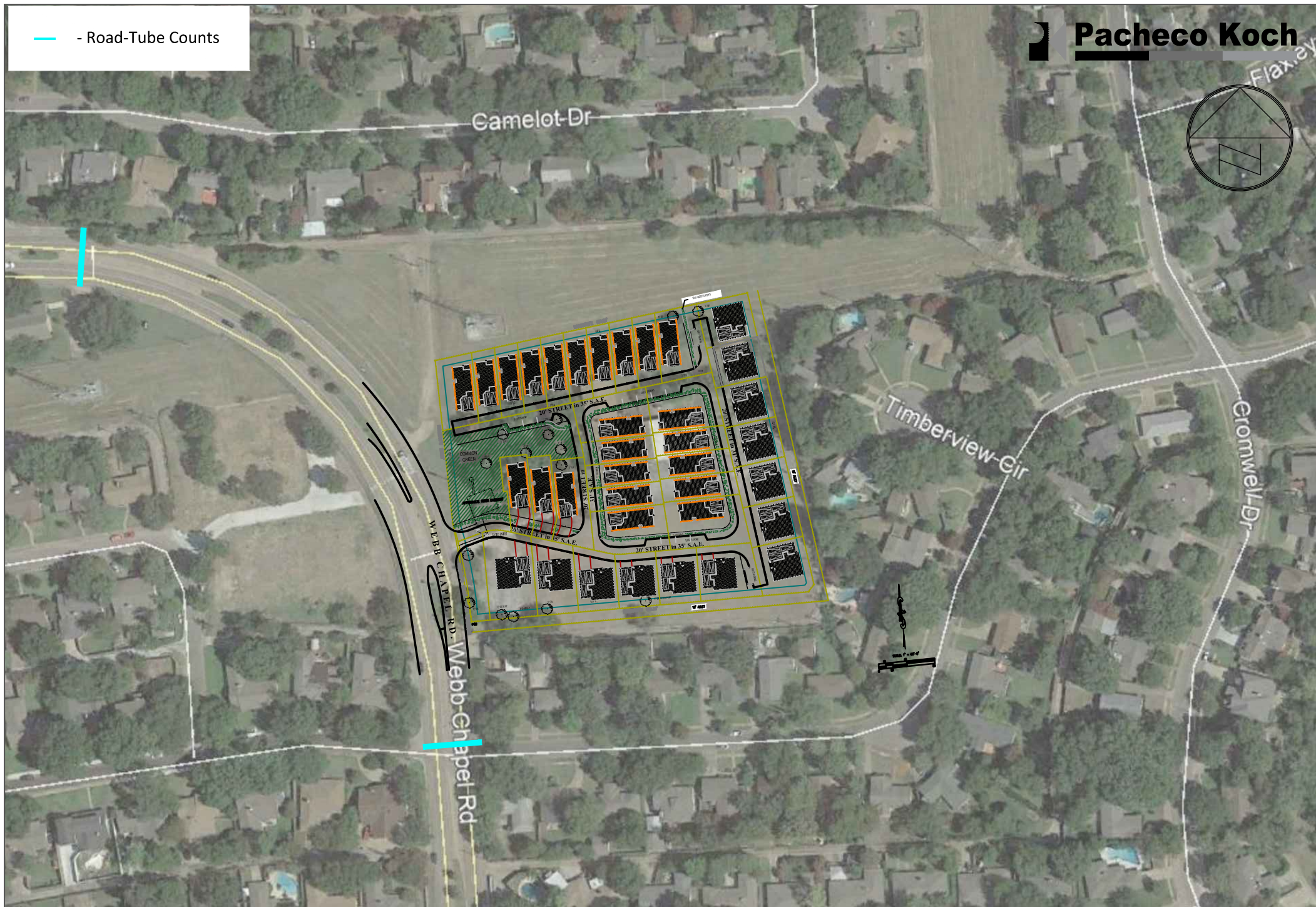
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Site Location Map

Northaven Trail Village Traffic Assessment, Dallas, Texas

PK 3016-18.509 (AJV: 01/25/19)

INTRODUCTION

The services of **Pacheco Koch** (PK) were retained by **Northaven Trail Village, LLC** to prepare a Traffic Assessment for a proposed single-family residential development located at 10210 Webb Chapel Road (the "Project"). A preliminary site plan/site location map for the Project (**Exhibit 1**) is provided in the preceding page.

The purpose of this report was to assess transportation facilities serving the site. Where applicable, Pacheco Koch has provided key findings and appropriate recommendations to identify and/or improve conditions that appear to be substandard, inefficient, or unsafe. This traffic study is not a detailed site plan review nor a substitute for local or regional transportation planning. All recommendations are the opinion of the Engineer and are subject to the customary review/approval processes of the respective agency.

This study was prepared by traffic engineers at Pacheco Koch (the "Engineer"). Pacheco Koch is a licensed engineering firm based in Dallas, Texas, that provides professional engineering and related services.

PROJECT DESCRIPTION

The 4.4-acre site is proposed to be redeveloped with approximately 36 single-family residential units. The prior use on the site was a church. The site is served by one point of vehicular access on Webb Chapel Road, which is existing.

STUDY AREA INVENTORY

Perimeter Streets

The site fronts on Webb Chapel Road—a six-lane, median divided thoroughfare with a posted speed limit of 35 MPH. In the vicinity of the site, Webb Chapel Road contains a horizontal curve that is signed with a 25 MPH advisory speed. The driveway is within the advisory speed zone.

The following is a detailed description of the roadway(s) adjacent to the site:

- (A) Webb Chapel Road, between Walnut Hill Lane and Royal Lane
 - ❑ Existing operation and cross-section: *six lanes, two-way operation w/ raised median divider*
 - ❑ City of Dallas Thoroughfare Plan Designation: *Principal Arterial M-60D(A)*
 - ❑ Current Daily Traffic Volume: *18,149 (Tuesday, January 8, 2019)*
 - ❑ City of Dallas Bicycle Plan Designation: *On-Street Bicycle Facility*

Detailed traffic volume data sheets are provided in **Appendix B**.

Adjacent Intersections

Immediately north of the site (approximately 350 north of the site driveway) is a future at-grade crossing of the Northaven Trail extension. A new pedestrian hybrid beacon is being installed at the crossing. Due to the short duration and relative infrequency of the crossings, the proximity of the crossing and the subject driveway is not expected to have a significant impact on overall traffic operations.

SITE ACCESS REVIEW

As part of the request for rezoning of the subject property, the City of Dallas requested this Traffic Assessment with the following scope items:

- Evaluate the sight distance for the subject site driveway
- Collect the 85th percentile speed data on Webb Chapel Road
- Provide illustration of proposed median modifications at the existing opening serving the site driveway

Intersection Sight Distance

Sight Distance is the metric used to describe the ability of a motorist to physically see, via a direct line of sight, objects and/or other vehicles to a degree sufficient to allow safe and efficient use a roadway in the intended manner. The sight distance is a function of the major roadway's geometric characteristics and 85th percentile speed. This analysis includes an assessment of the sight distance that exists at the existing site driveway on Webb Chapel Road.

Sight distance was calculated using two methodologies: (1) the **City of Dallas** intersection sight distance requirements as outlined in Section 4 of the *Paving Design Manual*, and (2) the **American Association of State Highway and Transportation Officials (AASHTO)** *A Policy on Geometric Design of Highways and Streets* (a.k.a., the "Green Book").

Exhibit 2 illustrates the results of the City of Dallas Intersection Sight Distance analysis methodology. The methodology allows for results to be calculated for two conditions: "minimum (acceptable)" and "desirable". As shown in the exhibit, the site driveway does satisfy the City's "minimum (acceptable)" standards for both left- and right-turn maneuvers. The driveway also satisfies the City's "desirable" standards for a right-turn maneuvers but does not meet the "desirable" standards for a left-turn maneuver due to a visual obstruction created by an existing private fence located on the west side of Webb Chapel Road.

Exhibit 3A illustrates the results of AASHTO Intersection Sight Distance analysis methodology. The exhibit, which is superimposed on a aerial photograph, does not depict the aforementioned private fence (that was recently constructed) and is also limited in the level of resolution needed to produce a definitive conclusion on the AASHTO standards. So, to supplement the graphical analysis, Pacheco

Koch conducted field observations to assess the sight distance conditions. Exhibit 3B contains a photograph of the sight distance (to the north) for a left-turn maneuvers from the driver's eye position as described in the AASHTO methodology. Based upon these findings, it is concluded that the AASHTO sight distance standards are met though with minimal margin. In order to maximize the available sight distance, the following measures are recommended:

- Relocate the existing warning sign (visible in the **Exhibit 3B** photograph) located on the inside of the southbound curve to remove from the line of sight.
- As needed, maintain proper pruning of the existing trees within the median of Webb Chapel Road so as not to create a visibility obstruction.

Additional photographs of existing field conditions are provided in **Appendix A**.

Speed Data Collection

The City requested collection of the existing speed data on Webb Chapel Road in the vicinity of the subject driveway. The data were collected over a continuous 24-hour period on Tuesday, January 8, 2019 using pneumatic data collection equipment. The results of the data collection are summarized in Table 1.

Table 1. Speed Data Collection (Webb Chapel Road)
[Posted Speed Limit: 35 mph]

LOCATION	85 th PERCENTILE SPEED
Northbound (approaching curve)	43 mph (average: 39 mph)
Southbound (approaching curve)	38 mph (average: 35 mph)

Detailed speed data is provided in **Appendix B**.

Median Opening Configuration

Exhibit 4 provides a conceptual illustration of the recommended modifications to the existing median opening. The proposed modifications include extended the existing median nose on the north side of the opening to reflect the standard median opening width (i.e., the existing median opening is wider than a typical median opening).

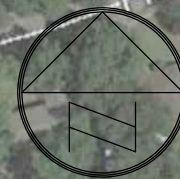
KEY FINDINGS

The following is a summary of key findings derived from this Traffic Assessment:

- ❖ The (existing) subject driveway does meet the minimum standards for intersection sight distance based upon the City of Dallas analysis methodology. The driveway also marginally meets the AASHTO intersection sight distance standards. To maximize the available intersection sight distance, the following measures are recommended:
 - a. Relocate the existing warning sign (visible in the **Exhibit 3B** photograph) located on the inside of the southbound curve to remove from the line of sight.
 - b. As needed, maintain proper pruning of the existing trees within the median of Webb Chapel Road so as not to create a visibility obstruction.
- ❖ The current posted speed limit on Webb Chapel Road adjacent to the subject site is 35 MPH with an Advisory Speed of 25 MPH (due to the existing curve). Based upon data collection commissioned by Pacheco Koch, the existing 85th percentile speed approaching the curve is 43 mph northbound and 38 mph southbound.
- ❖ The existing median opening on Webb Chapel Road serving the subject driveway is slightly wider than a typical median opening. It is recommended to slightly extend the existing median nose on the north side of the opening as depicted in **Exhibit 4**.

END OF MEMO

— - Approximate Fence Line



Intersection Sight Distance - Site Driveway (COD Minimum)

Northaven Trail Village Traffic Assessment, Dallas, Texas

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— - Approximate Fence Line

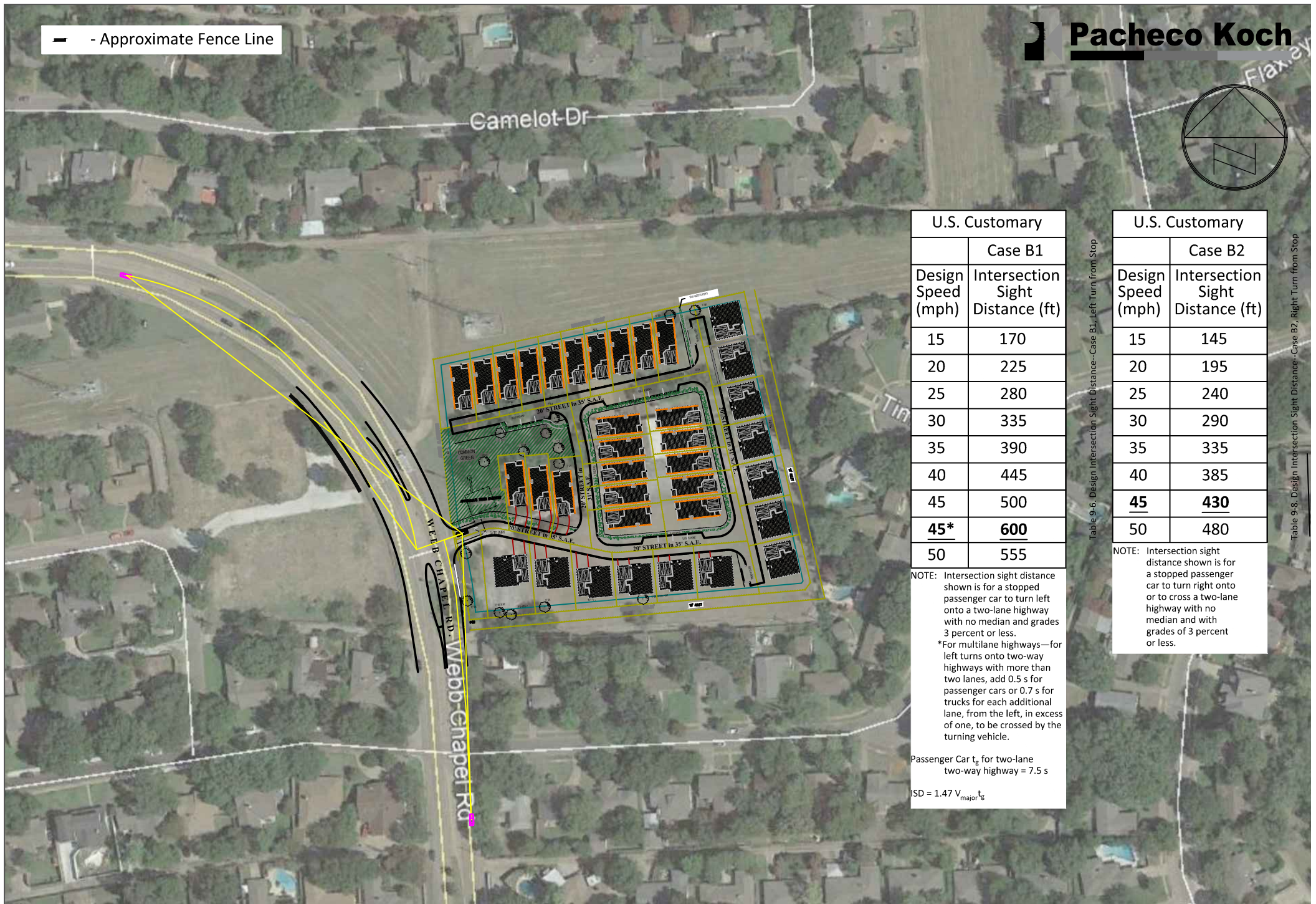


Intersection Sight Distance - Site Driveway (COD Desirable)

Northaven Trail Village Traffic Assessment, Dallas, Texas

PK 3016-18.509 (AJV: 01/25/19)

— - Approximate Fence Line



U.S. Customary	
	Case B1
Design Speed (mph)	Intersection Sight Distance (ft)
15	170
20	225
25	280
30	335
35	390
40	445
45	500
45*	600
50	555

NOTE: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3 percent or less.

*For multilane highways—for left turns onto two-way highways with more than two lanes, add 0.5 s for passenger cars or 0.7 s for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

Passenger Car t_p for two-lane two-way highway = 7.5 s

$$SD = 1.47 V_{major} t_p$$

U.S. Customary	
	Case B2
Design Speed (mph)	Intersection Sight Distance (ft)
15	145
20	195
25	240
30	290
35	335
40	385
45	430
50	480

NOTE: Intersection sight distance shown is for a stopped passenger car to turn right onto or to cross a two-lane highway with no median and with grades of 3 percent or less.

Table 9-6. Design Intersection Sight Distance—Case B1, Left Turn from Stop

Table 9-8. Design Intersection Sight Distance—Case B2, Right Turn from Stop

Intersection Sight Distance - Site Driveway (AASHTO)

Northaven Trail Village Traffic Assessment, Dallas, Texas

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Intersection Sight Distance - Site Driveway (AASHTO)

Northaven Trail Village Traffic Assessment, Dallas, Texas

PK 3016-18.509 (AJV: 01/31/19)

EXHIBIT **3B**



- Tree Locations (To be removed)
- Existing Roadway Sign (To be relocated)
- Median Extension (Proposed)



Recommendations

Northaven Trail Village Traffic Assessment, Dallas, Texas

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Appendix A. Field Reconnaissance Photographs



Appendix B. Detailed Speed Data

ROADWAY: Webb Chapel Road
LOCATION: East of Baroness Drive
DAY: Tuesday
DATE: 8-Jan
YEAR: 2019
SOURCE: CJ Hensch & Associates, Inc.

24-HOUR, BI-DIRECTIONAL VOLUME

18,146

(WEEKDAY)

Webb Chapel Road

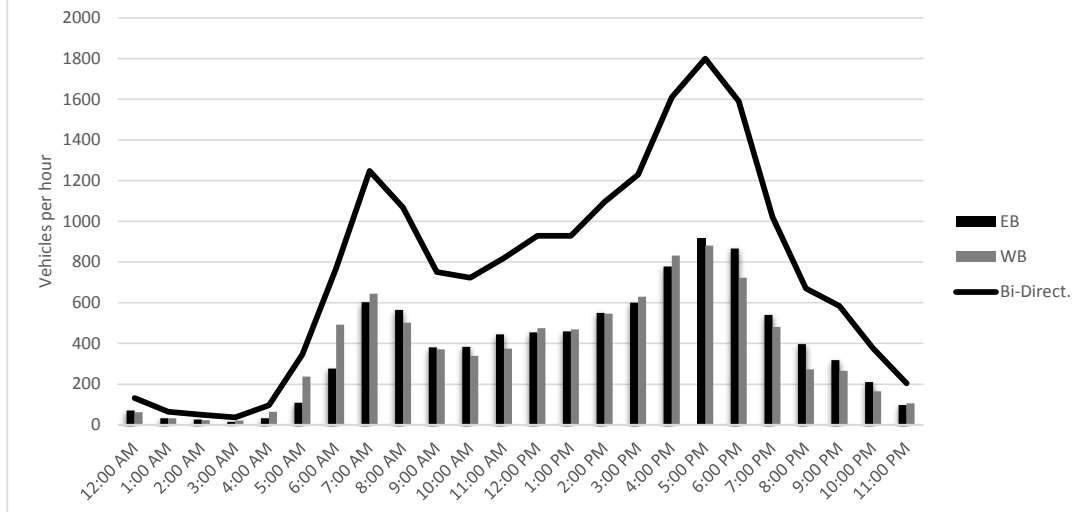
START TIME	Eastbound				Westbound				Totals		
	0:00	0:15	0:30	0:45	0:00	0:15	0:30	0:45	EB	WB	Bi-Direct.
12:00 AM	20	16	17	17	16	19	11	16	70	62	132
1:00 AM	5	10	8	9	8	10	7	7	32	32	64
2:00 AM	8	3	9	7	9	3	4	7	27	23	50
3:00 AM	2	5	3	5	3	3	8	8	15	22	37
4:00 AM	4	6	9	13	7	14	23	20	32	64	96
5:00 AM	20	22	30	37	36	39	80	82	109	237	346
6:00 AM	41	66	71	99	100	127	139	127	277	493	770
7:00 AM	112	138	165	188	135	158	179	173	603	645	1248
8:00 AM	147	133	136	149	151	110	134	108	565	503	1068
9:00 AM	106	89	91	95	105	118	76	72	381	371	752
10:00 AM	112	83	109	80	76	73	92	98	384	339	723
11:00 AM	112	106	119	108	83	101	86	105	445	375	820
12:00 PM	118	117	100	119	120	117	109	129	454	475	929
1:00 PM	120	102	115	123	121	126	106	116	460	469	929
2:00 PM	129	145	138	138	117	148	137	144	550	546	1096
3:00 PM	136	159	149	156	137	145	169	179	600	630	1230
4:00 PM	180	203	187	208	174	232	208	218	778	832	1610
5:00 PM	237	243	228	211	204	228	246	203	919	881	1800
6:00 PM	230	224	238	175	178	197	178	170	867	723	1590
7:00 PM	173	132	129	106	132	139	117	94	540	482	1022
8:00 PM	122	104	100	71	87	73	64	49	397	273	670
9:00 PM	79	91	87	61	68	69	71	58	318	266	584
10:00 PM	60	58	60	33	54	37	38	36	211	165	376
11:00 PM	29	26	27	16	36	31	25	14	98	106	204

7:15 AM 8:15 AM
4:45 PM 5:45 PM
5:00 PM 6:00 PM
4:45 PM 5:45 PM

24-Hour Total:
(Bi-Direct.) AM Peak Hour Total:
(Bi-Direct.) PM Peak Hour Total:
Highest By Direction (EB):
Highest By Direction (WB):

EB	WB	Bi-Direct.
9,132	9,014	18,146
638	661	1,299
916	896	1,812
919		
	896	

Graph



EB Webb Chapel Road East of Baroness Drive

Tuesday, January 08, 2019

Mechanical Speed Study

Weather: Clear

C J Hensch & Associates, Inc.

Start Time	Total	0-15 MPH	16-20 MPH	21-25 MPH	26-30 MPH	31-35 MPH	36-40 MPH	41-45 MPH	46-50 MPH	51-55 MPH	56-60 MPH	61-65 MPH	66-70 MPH	71-75 MPH	>76 MPH
0:00	20	0	0	0	2	10	8	0	0	0	0	0	0	0	0
0:15	16	0	0	0	1	11	3	1	0	0	0	0	0	0	0
0:30	17	0	0	0	5	5	5	0	2	0	0	0	0	0	0
0:45	17	0	0	0	3	4	7	1	2	0	0	0	0	0	0
Hr. Total	70	0	0	0	11	30	23	2	4	0	0	0	0	0	0
1:00	5	0	0	0	1	2	2	0	0	0	0	0	0	0	0
1:15	10	0	0	1	1	4	3	1	0	0	0	0	0	0	0
1:30	8	0	0	0	0	5	2	1	0	0	0	0	0	0	0
1:45	9	0	0	0	0	2	6	1	0	0	0	0	0	0	0
Hr. Total	32	0	0	1	2	13	13	3	0	0	0	0	0	0	0
2:00	8	0	1	1	0	3	3	0	0	0	0	0	0	0	0
2:15	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0
2:30	9	0	0	0	0	6	3	0	0	0	0	0	0	0	0
2:45	7	0	0	0	1	3	1	2	0	0	0	0	0	0	0
Hr. Total	27	0	1	1	1	14	8	2	0	0	0	0	0	0	0
3:00	2	0	0	0	1	0	1	0	0	0	0	0	0	0	0
3:15	5	0	0	0	1	2	2	0	0	0	0	0	0	0	0
3:30	3	0	0	0	0	2	1	0	0	0	0	0	0	0	0
3:45	5	0	0	0	1	4	0	0	0	0	0	0	0	0	0
Hr. Total	15	0	0	0	3	8	4	0	0	0	0	0	0	0	0
4:00	4	0	0	0	0	1	2	1	0	0	0	0	0	0	0
4:15	6	0	0	0	0	4	1	0	1	0	0	0	0	0	0
4:30	9	0	0	0	5	2	2	0	0	0	0	0	0	0	0
4:45	13	0	0	0	1	6	3	1	1	0	1	0	0	0	0
Hr. Total	32	0	0	0	6	13	8	2	2	0	1	0	0	0	0
5:00	20	0	0	0	0	10	9	1	0	0	0	0	0	0	0
5:15	22	0	0	3	4	3	11	1	0	0	0	0	0	0	0
5:30	30	0	0	2	5	12	8	2	1	0	0	0	0	0	0
5:45	37	0	0	1	5	11	18	2	0	0	0	0	0	0	0
Hr. Total	109	0	0	6	14	36	46	6	1	0	0	0	0	0	0
6:00	41	0	0	0	4	17	15	4	1	0	0	0	0	0	0
6:15	66	0	2	1	5	28	28	2	0	0	0	0	0	0	0
6:30	71	0	1	1	2	32	23	9	3	0	0	0	0	0	0
6:45	99	1	0	1	5	37	45	9	1	0	0	0	0	0	0
Hr. Total	277	1	3	3	16	114	111	24	5	0	0	0	0	0	0
7:00	112	0	2	2	11	48	46	3	0	0	0	0	0	0	0
7:15	138	6	1	0	6	57	56	9	2	1	0	0	0	0	0
7:30	165	5	1	3	13	67	58	17	1	0	0	0	0	0	0
7:45	188	3	3	3	9	93	63	6	8	0	0	0	0	0	0
Hr. Total	603	14	7	8	39	265	223	35	11	1	0	0	0	0	0
8:00	147	4	5	0	6	56	64	9	3	0	0	0	0	0	0
8:15	133	2	2	3	4	61	53	8	0	0	0	0	0	0	0
8:30	136	6	4	1	14	67	35	9	0	0	0	0	0	0	0
8:45	149	5	2	2	27	80	29	2	2	0	0	0	0	0	0
Hr. Total	565	17	13	6	51	264	181	28	5	0	0	0	0	0	0
9:00	106	1	1	3	10	37	43	10	1	0	0	0	0	0	0
9:15	89	0	0	1	7	43	34	3	1	0	0	0	0	0	0
9:30	91	3	0	1	7	37	31	8	4	0	0	0	0	0	0
9:45	95	1	2	2	9	38	38	4	1	0	0	0	0	0	0
Hr. Total	381	5	3	7	33	155	146	25	7	0	0	0	0	0	0
10:00	112	2	1	2	4	64	35	4	0	0	0	0	0	0	0
10:15	83	0	0	0	5	38	32	6	2	0	0	0	0	0	0
10:30	109	2	0	1	10	49	43	3	1	0	0	0	0	0	0
10:45	80	1	1	4	7	46	13	7	1	0	0	0	0	0	0
Hr. Total	384	5	2	7	26	197	123	20	4	0	0	0	0	0	0
11:00	112	2	1	2	12	49	40	5	1	0	0	0	0	0	0
11:15	106	3	0	5	9	41	34	11	3	0	0	0	0	0	0
11:30	119	1	0	1	15	45	48	8	1	0	0	0	0	0	0
11:45	108	0	1	3	14	44	37	9	0	0	0	0	0	0	0
Hr. Total	445	6	2	11	50	179	159	33	5	0	0	0	0	0	0
12:00	118	2	1	1	13	49	41	8	3	0	0	0	0	0	0
12:15	117	1	0	0	10	55	42	8	1	0	0	0	0	0	0
12:30	100	2	2	2	10	42	33	8	0	1	0	0	0	0	0
12:45	119	3	1	1	7	49	47	9	2	0	0	0	0	0	0
Hr. Total	454	8	4	4	40	195	163	33	6	1	0	0	0	0	0
13:00	120	4	0	0	14	49	44	9	0	0	0	0	0	0	0
13:15	102	1	0	0	7	44	33	12	4	0	1	0	0	0	0
13:30	115	1	0	2	5	49	53	3	2	0	0	0	0	0	0
13:45	123	1	0	1	8	64	36	13	0	0	0	0	0	0	0
Hr. Total	460	7	0	3	34	206	166	37	6	0	1	0	0	0	0
14:00	129	3	0	1	6	53	58	7	1	0	0	0	0	0	0
14:15	145	0	2	0	12	70	54	6	1	0	0	0	0	0	0
14:30	138	3	2	0	5	59	56	13	0	0	0	0	0	0	0
14:45	138	4	0	0	6	73	42	11	2	0	0	0	0	0	0
Hr. Total	550	10	4	1	29	255	210	37	4	0	0	0	0	0	0

EB Webb Chapel Road East of Baroness Drive

Tuesday, January 08, 2019

Mechanical Speed Study

Weather: Clear

C J Hensch & Associates, Inc.

		0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	>76
Start Time	Total	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH
15:00	136	2	0	1	15	78	36	3	1	0	0	0	0	0	0
15:15	159	2	0	0	10	86	51	10	0	0	0	0	0	0	0
15:30	149	5	0	2	17	75	38	12	0	0	0	0	0	0	0
15:45	156	3	1	2	15	64	64	6	1	0	0	0	0	0	0
Hr. Total	600	12	1	5	57	303	189	31	2	0	0	0	0	0	0
16:00	180	4	0	2	10	95	57	8	4	0	0	0	0	0	0
16:15	203	2	1	0	11	109	74	4	2	0	0	0	0	0	0
16:30	187	8	1	0	15	101	52	8	1	1	0	0	0	0	0
16:45	208	6	2	1	28	97	62	9	2	1	0	0	0	0	0
Hr. Total	778	20	4	3	64	402	245	29	9	2	0	0	0	0	0
17:00	237	11	0	0	22	146	56	2	0	0	0	0	0	0	0
17:15	243	10	0	3	15	121	85	8	1	0	0	0	0	0	0
17:30	228	6	0	4	8	128	66	14	1	1	0	0	0	0	0
17:45	211	5	0	0	10	114	66	13	2	1	0	0	0	0	0
Hr. Total	919	32	0	7	55	509	273	37	4	2	0	0	0	0	0
18:00	230	4	1	2	27	125	62	9	0	0	0	0	0	0	0
18:15	224	4	0	4	27	132	53	4	0	0	0	0	0	0	0
18:30	238	6	0	8	43	132	46	3	0	0	0	0	0	0	0
18:45	175	4	0	1	24	99	40	6	1	0	0	0	0	0	0
Hr. Total	867	18	1	15	121	488	201	22	1	0	0	0	0	0	0
19:00	173	2	0	1	43	66	55	6	0	0	0	0	0	0	0
19:15	132	4	0	1	13	76	33	4	1	0	0	0	0	0	0
19:30	129	4	0	0	17	61	44	3	0	0	0	0	0	0	0
19:45	106	2	0	0	9	61	31	3	0	0	0	0	0	0	0
Hr. Total	540	12	0	2	82	264	163	16	1	0	0	0	0	0	0
20:00	122	3	1	0	18	53	43	4	0	0	0	0	0	0	0
20:15	104	0	1	1	21	56	18	6	1	0	0	0	0	0	0
20:30	100	3	0	0	19	46	28	4	0	0	0	0	0	0	0
20:45	71	1	0	1	7	40	16	4	0	0	2	0	0	0	0
Hr. Total	397	7	2	2	65	195	105	18	1	0	2	0	0	0	0
21:00	79	1	0	1	10	43	21	3	0	0	0	0	0	0	0
21:15	91	2	0	0	12	41	28	5	2	0	1	0	0	0	0
21:30	87	1	0	0	12	40	31	1	1	1	0	0	0	0	0
21:45	61	0	0	0	6	33	19	2	1	0	0	0	0	0	0
Hr. Total	318	4	0	1	40	157	99	11	4	1	1	0	0	0	0
22:00	60	2	0	0	2	26	25	5	0	0	0	0	0	0	0
22:15	58	0	0	0	10	23	22	3	0	0	0	0	0	0	0
22:30	60	1	0	1	4	24	25	4	0	1	0	0	0	0	0
22:45	33	1	0	0	3	16	13	0	0	0	0	0	0	0	0
Hr. Total	211	4	0	1	19	89	85	12	0	1	0	0	0	0	0
23:00	29	0	0	0	10	5	11	3	0	0	0	0	0	0	0
23:15	26	2	0	0	3	16	5	0	0	0	0	0	0	0	0
23:30	27	0	0	0	1	6	12	8	0	0	0	0	0	0	0
23:45	16	1	0	0	2	4	6	3	0	0	0	0	0	0	0
Hr. Total	98	3	0	0	16	31	34	14	0	0	0	0	0	0	0
Gr. Total	9132	185	47	94	874	4382	2978	477	82	8	5	0	0	0	0
%	2.0%	0.5%	1.0%	9.6%	48.0%	32.6%	5.2%	0.9%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Total	0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	>76	

Percentile	5%	10%	15%	45%	50%	55%	85%	90%	95%
Speed	29	30	31	34	35	35	38	39	41

Average (Mean) 35

Pace Speed	30:39
Number in Pace	7463
Percent in Pace	83.4

NB Webb Chapel Road North of Timberview Drive

Tuesday, January 08, 2019

Mechanical Speed Study

Weather: Clear

C J Hensch & Associates, Inc.

Start Time	Total	0-15 MPH	16-20 MPH	21-25 MPH	26-30 MPH	31-35 MPH	36-40 MPH	41-45 MPH	46-50 MPH	51-55 MPH	56-60 MPH	61-65 MPH	66-70 MPH	71-75 MPH	>76 MPH
0:00	16	0	0	0	1	3	5	4	2	1	0	0	0	0	0
0:15	19	0	0	0	0	2	4	11	2	0	0	0	0	0	0
0:30	10	0	0	1	1	0	6	0	2	0	0	0	0	0	0
0:45	18	0	1	0	1	5	7	1	3	0	0	0	0	0	0
Hr. Total	63	0	1	1	3	10	22	16	9	1	0	0	0	0	0
1:00	8	0	0	0	1	2	4	1	0	0	0	0	0	0	0
1:15	9	0	0	1	0	1	3	2	2	0	0	0	0	0	0
1:30	8	0	0	1	0	1	3	1	0	2	0	0	0	0	0
1:45	7	0	0	0	0	2	2	3	0	0	0	0	0	0	0
Hr. Total	32	0	0	2	1	6	12	7	2	2	0	0	0	0	0
2:00	9	0	0	0	0	0	8	1	0	0	0	0	0	0	0
2:15	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0
2:30	4	0	0	0	1	0	2	1	0	0	0	0	0	0	0
2:45	6	0	0	0	0	0	1	3	2	0	0	0	0	0	0
Hr. Total	22	0	0	0	2	1	11	6	2	0	0	0	0	0	0
3:00	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0
3:15	4	0	0	0	1	2	1	0	0	0	0	0	0	0	0
3:30	8	0	0	0	0	2	4	1	1	0	0	0	0	0	0
3:45	7	0	0	0	0	2	2	2	0	1	0	0	0	0	0
Hr. Total	21	0	0	0	1	7	8	3	1	1	0	0	0	0	0
4:00	8	0	0	0	1	1	0	3	2	1	0	0	0	0	0
4:15	12	0	0	0	0	2	4	3	2	1	0	0	0	0	0
4:30	25	0	0	0	2	5	9	6	1	1	1	0	0	0	0
4:45	19	0	0	0	1	6	4	4	4	0	0	0	0	0	0
Hr. Total	64	0	0	0	4	14	17	16	9	3	1	0	0	0	0
5:00	36	0	0	1	1	10	13	8	3	0	0	0	0	0	0
5:15	31	0	0	1	0	4	8	11	7	0	0	0	0	0	0
5:30	80	0	0	0	0	10	28	30	11	1	0	0	0	0	0
5:45	74	0	1	0	2	3	29	29	8	1	1	0	0	0	0
Hr. Total	221	0	1	2	3	27	78	78	29	2	1	0	0	0	0
6:00	94	1	1	0	1	8	42	32	8	1	0	0	0	0	0
6:15	125	4	0	0	2	12	40	47	15	5	0	0	0	0	0
6:30	138	3	0	2	1	11	61	48	9	3	0	0	0	0	0
6:45	128	2	0	3	0	8	51	49	13	2	0	0	0	0	0
Hr. Total	485	10	1	5	4	39	194	176	45	11	0	0	0	0	0
7:00	126	3	1	1	10	23	44	32	11	1	0	0	0	0	0
7:15	156	3	0	5	7	33	72	27	9	0	0	0	0	0	0
7:30	188	3	0	3	7	48	70	41	13	1	2	0	0	0	0
7:45	162	3	0	1	6	39	66	34	11	2	0	0	0	0	0
Hr. Total	632	12	1	10	30	143	252	134	44	4	2	0	0	0	0
8:00	146	4	0	2	9	34	53	36	7	1	0	0	0	0	0
8:15	110	4	0	2	8	24	45	17	8	2	0	0	0	0	0
8:30	126	5	1	2	4	29	50	30	3	2	0	0	0	0	0
8:45	111	1	2	3	5	28	36	27	7	1	1	0	0	0	0
Hr. Total	493	14	3	9	26	115	184	110	25	6	1	0	0	0	0
9:00	104	2	0	1	6	17	44	23	7	2	2	0	0	0	0
9:15	111	2	1	1	6	12	57	24	5	3	0	0	0	0	0
9:30	70	1	1	1	3	17	28	15	2	2	0	0	0	0	0
9:45	74	1	0	0	1	11	30	23	8	0	0	0	0	0	0
Hr. Total	359	6	2	3	16	57	159	85	22	7	2	0	0	0	0
10:00	74	1	1	1	3	14	22	21	11	0	0	0	0	0	0
10:15	72	1	0	0	3	11	30	21	5	0	1	0	0	0	0
10:30	87	2	2	1	1	17	30	28	4	1	0	1	0	0	0
10:45	99	4	1	1	5	19	43	18	8	0	0	0	0	0	0
Hr. Total	332	8	4	3	12	61	125	88	28	1	1	1	0	0	0
11:00	84	0	0	0	1	17	37	20	9	0	0	0	0	0	0
11:15	102	3	2	1	0	20	38	29	8	0	0	1	0	0	0
11:30	87	1	0	0	2	20	36	22	5	1	0	0	0	0	0
11:45	106	1	0	1	0	16	62	19	4	2	1	0	0	0	0
Hr. Total	379	5	2	2	3	73	173	90	26	3	1	1	0	0	0
12:00	117	0	1	2	0	19	57	28	10	0	0	0	0	0	0
12:15	111	4	0	2	2	18	43	37	4	0	1	0	0	0	0
12:30	103	2	0	3	4	13	47	25	7	0	2	0	0	0	0
12:45	126	1	0	2	2	22	54	35	9	1	0	0	0	0	0
Hr. Total	457	7	1	9	8	72	201	125	30	1	3	0	0	0	0
13:00	120	3	0	0	1	16	58	30	11	1	0	0	0	0	0
13:15	118	2	1	1	2	16	45	42	7	1	1	0	0	0	0
13:30	111	0	0	2	4	11	38	41	12	1	1	1	0	0	0
13:45	117	1	0	3	2	14	48	35	9	3	1	0	1	0	0
Hr. Total	466	6	1	6	9	57	189	148	39	6	3	1	1	0	0
14:00	113	3	0	1	1	18	46	37	7	0	0	0	0	0	0
14:15	147	6	0	2	0	29	64	40	4	2	0	0	0	0	0
14:30	129	6	0	0	5	18	54	35	8	2	1	0	0	0	0
14:45	143	5	0	1	6	39	54	31	6	1	0	0	0	0	0
Hr. Total	532	20	0	4	12	104	218	143	25	5	1	0	0	0	0

NB Webb Chapel Road North of Timberview Drive

Tuesday, January 08, 2019

Mechanical Speed Study

Weather: Clear

C J Hensch & Associates, Inc.

		0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	>76
Start Time	Total	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH
15:00	133	2	0	3	13	32	51	26	4	1	1	0	0	0	0
15:15	154	5	1	5	11	43	55	24	7	2	0	0	1	0	0
15:30	161	7	0	1	7	26	60	46	13	1	0	0	0	0	0
15:45	168	8	0	5	8	44	64	27	9	3	0	0	0	0	0
Hr. Total	616	22	1	14	39	145	230	123	33	7	1	0	1	0	0
16:00	181	5	1	2	10	47	69	32	9	5	0	1	0	0	0
16:15	220	5	0	4	17	46	96	37	12	3	0	0	0	0	0
16:30	199	5	0	2	1	43	82	51	12	3	0	0	0	0	0
16:45	204	12	0	1	7	45	87	47	4	0	0	1	0	0	0
Hr. Total	804	27	1	9	35	181	334	167	37	11	0	2	0	0	0
17:00	199	10	0	0	6	40	79	53	10	0	0	1	0	0	0
17:15	224	7	1	0	10	44	83	64	11	4	0	0	0	0	0
17:30	244	9	0	1	2	44	129	48	6	2	1	1	1	0	0
17:45	199	7	0	2	13	47	81	39	6	4	0	0	0	0	0
Hr. Total	866	33	1	3	31	175	372	204	33	10	1	2	1	0	0
18:00	185	4	0	2	4	43	86	35	9	2	0	0	0	0	0
18:15	196	4	2	1	4	54	72	45	13	0	1	0	0	0	0
18:30	180	1	0	1	7	56	53	48	12	2	0	0	0	0	0
18:45	170	7	0	0	2	29	89	34	8	1	0	0	0	0	0
Hr. Total	731	16	2	4	17	182	300	162	42	5	1	0	0	0	0
19:00	134	5	0	3	2	46	43	28	4	2	1	0	0	0	0
19:15	134	5	0	1	0	37	55	26	8	2	0	0	0	0	0
19:30	117	3	0	0	1	28	50	25	4	6	0	0	0	0	0
19:45	92	1	0	1	2	24	33	26	4	1	0	0	0	0	0
Hr. Total	477	14	0	5	5	135	181	105	20	11	1	0	0	0	0
20:00	84	0	0	0	1	20	36	23	4	0	0	0	0	0	0
20:15	73	1	0	0	2	13	37	14	3	1	0	1	0	1	0
20:30	67	2	0	1	2	18	31	10	2	1	0	0	0	0	0
20:45	50	1	0	1	0	8	26	11	3	0	0	0	0	0	0
Hr. Total	274	4	0	2	5	59	130	58	12	2	0	1	0	1	0
21:00	61	0	0	2	2	19	25	10	2	1	0	0	0	0	0
21:15	74	0	0	0	7	16	28	18	4	1	0	0	0	0	0
21:30	66	0	0	0	2	18	25	16	5	0	0	0	0	0	0
21:45	58	1	0	0	1	11	29	11	4	1	0	0	0	0	0
Hr. Total	259	1	0	2	12	64	107	55	15	3	0	0	0	0	0
22:00	49	0	0	0	0	17	18	10	3	1	0	0	0	0	0
22:15	40	1	1	1	1	5	17	10	4	0	0	0	0	0	0
22:30	38	1	0	0	3	8	14	8	3	0	0	1	0	0	0
22:45	38	0	0	0	2	3	14	11	6	2	0	0	0	0	0
Hr. Total	165	2	1	1	6	33	63	39	16	3	0	1	0	0	0
23:00	36	0	0	0	0	6	18	10	1	0	0	1	0	0	0
23:15	31	0	0	0	2	7	13	9	0	0	0	0	0	0	0
23:30	26	0	0	0	2	7	12	3	2	0	0	0	0	0	0
23:45	14	0	0	0	0	5	2	7	0	0	0	0	0	0	0
Hr. Total	107	0	0	0	4	25	45	29	3	0	0	1	0	0	0
Gr. Total	8857	207	23	96	288	1785	3605	2167	547	105	20	10	3	1	0
%	2.3%	0.3%	1.1%	3.3%	20.2%	40.7%	24.5%	6.2%	1.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Total	0-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	>76	

Percentile	5%	10%	15%	45%	50%	55%	85%	90%	95%
Speed	31	33	34	38	38	39	43	45	47

Average (Mean) 39

Pace Speed	34-43
Number in Pace	6174
Percent in Pace	71.3