

Traffic Signal Warrant Analysis
For the Intersection of
Sandy Lake Road and Winding Hollow Lane
Coppell, Texas

Prepared for:
The City of Coppell
Engineering & Public Works
265 E. Parkway Boulevard
Coppell, Texas 75019

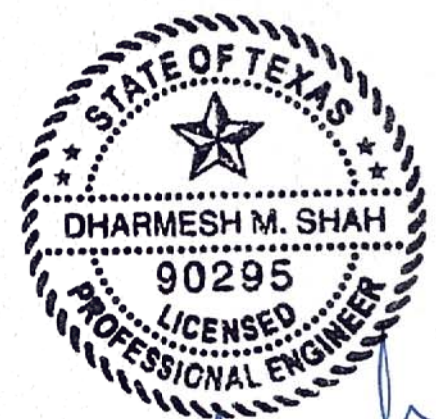
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9/5/2018

INTRODUCTION

The City of Coppell has requested that an analysis be conducted for the intersection of Sandy Lake Road and Winding Hollow Lane to determine if signalization is warranted. This report summarizes the results of the traffic signal warrant analysis conducted for this intersection.

The analysis was performed using existing approach volumes collected over a twenty-four-hour period on Wednesday, July 18, 2018, which are summarized in **Table 1** with the raw data presented in the Appendix.

The traffic signal warrant analysis presented in this report is based on the traffic signal warrants contained in Chapter 4C, “Traffic Control Signal Needs Studies,” of the *2011 Texas Manual on Uniform Traffic Control Devices*. Nine warrants are included in the manual for warranting a traffic signal installation. These warrants are:

- Warrant 1 – Eight-Hour Vehicular Volume;
- Warrant 2 – Four-Hour Vehicular Volume;
- Warrant 3 – Peak Hour;
- Warrant 4 – Pedestrian Volume;
- Warrant 5 – School Crossing;
- Warrant 6 – Coordinated Signal System;
- Warrant 7 – Crash Experience;
- Warrant 8 – Roadway Network;
- Warrant 9 – Intersection Near a Grade Crossing

The current population estimate for the City of Coppell is 41,100 (*Source: <http://www.coppelltx.gov/business/demographics>*).

Sandy Lake Road is a four-lane divided roadway with a posted speed limit of 40 miles per hour (mph). At the study intersection, Sandy Lake Road has a left turn deceleration lane in each direction. Winding Hollow Lane is a two-lane undivided roadway with a posted speed limit of 25 mph. Both approaches of Winding Hollow Lane are divided at the study intersection; however, neither approach appears to be wide enough to function as a two-lane approach. Sandy Lake Road is an eastbound-westbound roadway and Winding Hollow Lane is a northbound-southbound roadway, and the intersection of these two streets is currently stop-controlled on the Winding Hollow Lane approaches. Based on the traffic volumes at this intersection, Sandy Lake Road is considered the *Major Roadway* for this analysis with multi-lane approaches (three lanes in each direction). Winding Hollow Lane will be considered a *Minor Roadway* with single lane approaches.

An aerial photograph of the intersection is provided in **Figure 1**. While there are existing crosswalks on the minor street approaches, there are no marked crosswalks across Sandy Lake Road.

The Texas *MUTCD* recommends consideration of the effects of right turn volumes on the minor street approach if the movement enters the major street with minimal conflict, primarily with the presence of a right turn lane. No reduction for right turn volumes was utilized at this location. **Table 2** summarizes the volume warrant results, as discussed in the next section.

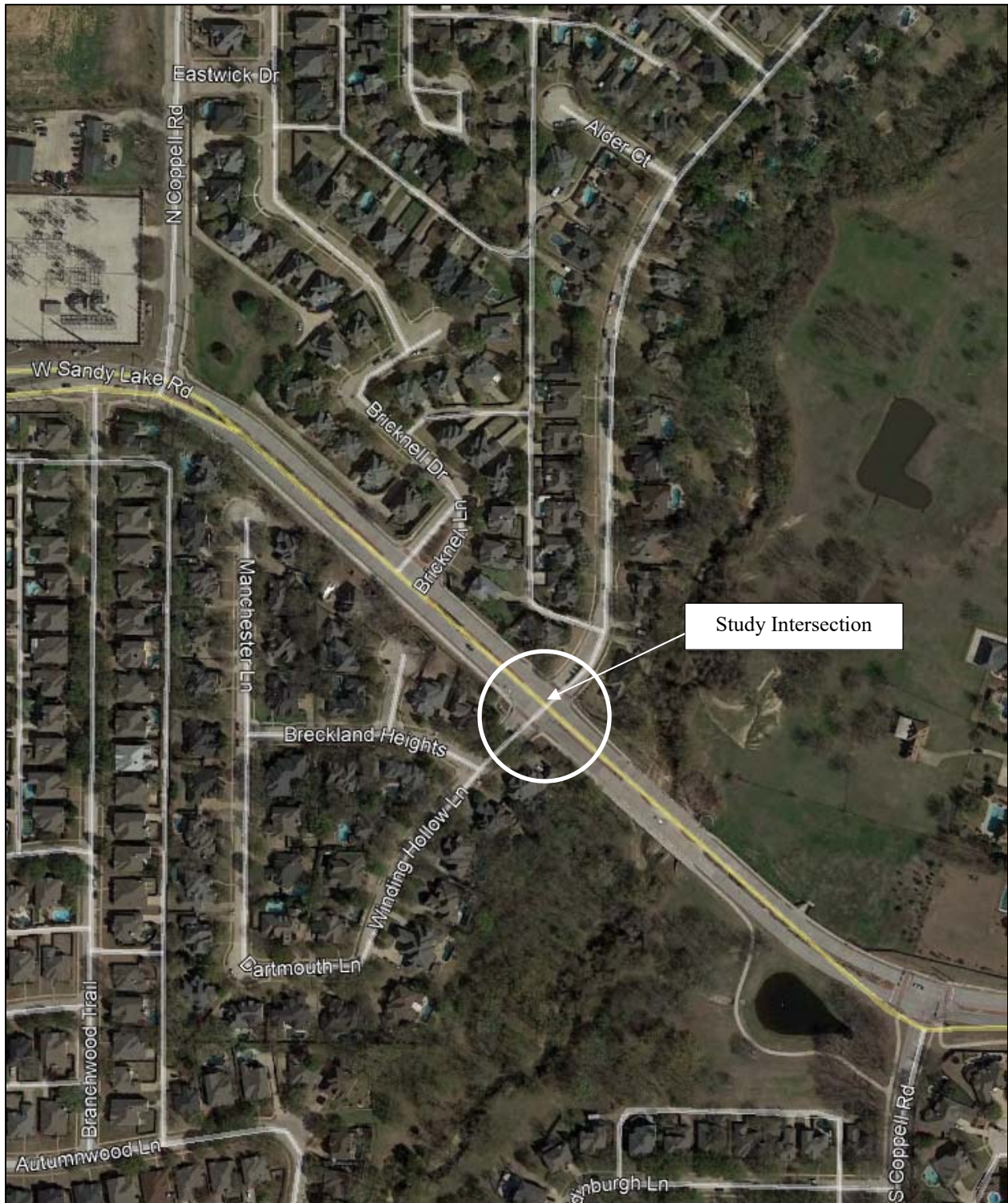
Table 1: Volume Summary

Hour Begin	Sandy Lake Road			Winding Hollow Lane				Total Minor Volume	Pedestrians Crossing Major Roadway
	EB Volume	WB Volume	Total Volume	NB Volume		SB Volume			
				Thru/LT	RT	Thru/LT	RT		
0:00	26	44	70	5	0	0	1	6	0
1:00	15	32	47	0	2	0	0	2	0
2:00	9	15	24	1	0	0	0	1	0
3:00	16	7	23	0	0	0	0	0	0
4:00	69	25	94	2	1	1	0	4	0
5:00	216	61	277	2	0	1	1	4	0
6:00	276	205	481	9	4	2	1	16	3
7:00	452	373	825	20	12	8	8	48	0
8:00	492	442	934	23	10	8	18	59	1
9:00	369	314	683	13	3	9	10	35	0
10:00	349	249	598	20	6	9	10	45	0
11:00	413	535	948	17	9	9	7	42	0
12:00	556	536	1,092	12	14	7	9	42	0
13:00	505	457	962	18	6	11	12	47	0
14:00	449	406	855	18	5	3	10	36	0
15:00	411	440	851	14	2	9	4	29	0
16:00	647	547	1,194	19	4	5	8	36	1
17:00	804	650	1,454	15	0	7	12	34	0
18:00	554	461	1,015	19	8	6	9	42	0
19:00	326	346	672	18	5	7	14	44	0
20:00	294	287	581	14	6	7	8	35	0
21:00	211	213	424	7	4	1	2	14	0
22:00	94	121	215	3	3	1	3	10	0
23:00	71	120	191	1	4	1	0	6	0
TOTAL	7,624	6,886	14,510	270	108	112	147	637	5

Table 2: Traffic Volumes for Analysis and Warrant Summary

Hour Begin	Sandy Lake Road			Winding Hollow Lane		Max Volume	Meets Warrants?				
	EB Volume	WB Volume	Total Volume	NB Volume	SB Volume		1A	1B	1-Combo		2
									A	B	
0:00	26	44	70	5	1	5	0	0	0	0	0
1:00	15	32	47	2	0	2	0	0	0	0	0
2:00	9	15	24	1	0	1	0	0	0	0	0
3:00	16	7	23	0	0	0	0	0	0	0	0
4:00	69	25	94	3	1	3	0	0	0	0	0
5:00	216	61	277	2	2	2	0	0	0	0	0
6:00	276	205	481	13	3	13	0	0	0	0	0
7:00	452	373	825	32	16	32	0	0	0	0	0
8:00	492	442	934	33	26	33	0	0	0	0	0
9:00	369	314	683	16	19	19	0	0	0	0	0
10:00	349	249	598	26	19	26	0	0	0	0	0
11:00	413	535	948	26	16	26	0	0	0	0	0
12:00	556	536	1,092	26	16	26	0	0	0	0	0
13:00	505	457	962	24	23	24	0	0	0	0	0
14:00	449	406	855	23	13	23	0	0	0	0	0
15:00	411	440	851	16	13	16	0	0	0	0	0
16:00	647	547	1,194	23	13	23	0	0	0	0	0
17:00	804	650	1,454	15	19	19	0	0	0	0	0
18:00	554	461	1,015	27	15	27	0	0	0	0	0
19:00	326	346	672	23	21	23	0	0	0	0	0
20:00	294	287	581	20	15	20	0	0	0	0	0
21:00	211	213	424	11	3	11	0	0	0	0	0
22:00	94	121	215	6	4	6	0	0	0	0	0
23:00	71	120	191	5	1	5	0	0	0	0	0
TOTAL	7,624	6,886	14,510	378	259	385	0	0	0	0	0

Figure 1: Sandy Lake Road at Winding Hollow Lane



TRAFFIC SIGNAL WARRANT ANALYSIS

Warrant 1 – Eight-Hour Vehicular Volume

Warrant 1 is based on the volumes from both approaches on the major street and the higher approach volume on the minor street. It also uses the number of lanes for moving traffic on each approach. Either Condition A or Condition B of this warrant must be met for Warrant 1 to be satisfied.

The *Texas MUTCD* allows for the use of a reduced warranting threshold (70%) for intersections where the posted or 85th-percentile speed exceeds 40 mph or if the intersection is located in a community with a population under 10,000. Since the posted speed limit on the major street (Sandy Lake Road) is 40 mph and the population of the City of Coppell is greater than 10,000 people (41,100), the reduced warranting threshold was not used for this warrant.

Condition A of Warrant 1 is met when, for each of any eight hours of an average day, the warranting volumes exist on the major street and on the higher-volume minor street approach to the intersection during the same eight hours. The warranting threshold for an approach with two or more lanes on the major street and an approach with one lane on the minor street is:

Major Street: 600 vph (total for both directions)
Minor Street: 150 vph (higher volume approach)

Warrant 1A threshold volumes are not exceeded for any hours of the day. Eight (8) hours are required for this warrant condition. Warrant 1A is not satisfied at this location.

Condition B of Warrant 1 applies to operating conditions where the major street traffic is so heavy that it creates excessive delay or hazardous conditions for minor street traffic when entering or crossing the major street. The warrant condition is met when, for each of any eight hours of an average day, the warranting volumes exist on the major street and on the higher-volume minor street approach to an intersection. The warranting threshold for an approach with two or more lanes on the major street and an approach with one lane on the minor street is:

Major Street: 900 vph (total for both directions)
Minor Street: 75 vph (higher volume approach)

Warrant 1B threshold volumes are not exceeded for any hours of the day. Eight (8) hours are required for this warrant condition. Warrant 1B is not satisfied at this location.

A combination of Conditions A and B may be applied at locations where Conditions A and B are not satisfied. The same eight hours of the day are not required to be used for meeting both conditions. Under the combination warrant, the warranting thresholds are:

Major Street: 480 vph and 720 vph for Conditions A and B, respectively
(total for both directions)
Minor Street: 120 vph and 60 vph for Conditions A and B, respectively
(higher volume approach)

Combination threshold volumes are not exceeded for any hours of the day. Eight (8) hours are required for this warrant condition. The combination warrant is not satisfied at this location.

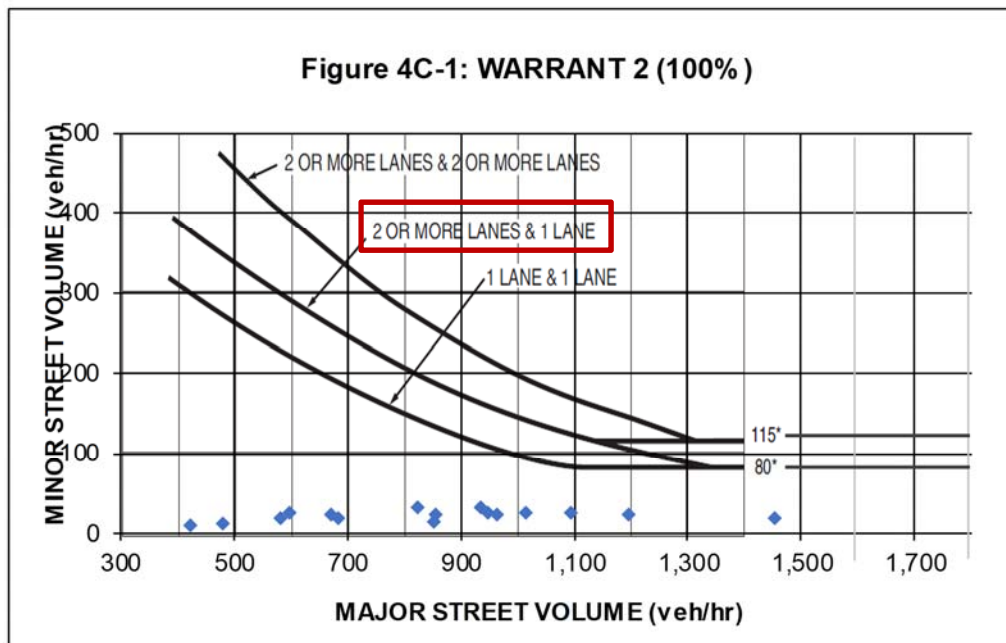
Based on these results and as shown in Table 2, **Warrant 1 is NOT MET for this intersection.**

Warrant 2 – Four-Hour Volumes

Warrant 2 is satisfied when the volumes for any four (4) hours of an average day, when plotted on Figure 4C-1 (or 4C-2 when applicable) of the *Texas MUTCD*, fall above the curve for the appropriate number of lanes. Based on the posted speed limit on Sandy Lake Road (40 mph) and the population of the City of Coppell (41,100), the reduced warrant threshold was not used for this warrant and Figure 4C-1 was used for this analysis. **Figure 2** shows the results of this analysis.

Based on the traffic volumes presented in Table 2 and plotted in Figure 2, no hours of the day fall above the curve for the appropriate number of lanes when plotted on Figure 4C-1 of the *Texas MUTCD* for this intersection. Four (4) hours are required for this warrant condition. Under these circumstances, **Warrant 2 is NOT MET for this intersection.**

Figure 2: Four-Hour Vehicular Volume Warrant (Warrant 2) – Sandy Lake Road and Winding Hollow Lane



Warrant 3 – Peak Hour Volume

Warrant 3 is intended for application when traffic conditions are such that for at least one (1) hour of the day, the minor street traffic experiences undue delays entering or crossing the major street. Warrant 3 is satisfied when either of the following conditions is met:

1. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:
 - a. The delay experienced by the traffic on the minor-street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach, and
 - b. The volume on the same minor-street approach equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes, and
 - c. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.
2. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 (or Figure 4C-4) for the existing combination of approach lanes.

As further specified in the *Texas MUTCD*:

“This signal warrant shall be applied only in unusual cases such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.”

Traffic characteristics at this intersection do not fall under the unusual cases identified above. Therefore, **Warrant 3 is NOT APPLICABLE for this intersection and was not evaluated.**

Warrant 4 – Minimum Pedestrian Volume

Warrant 4 applies to conditions where the major street traffic is so heavy that pedestrians experience excessive delay in crossing the major street. It is intended for application at an intersection or midblock location and requires that one (1) of the following conditions be met:

1. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) fall above the curve in Figure 4C-5 (or Figure 4C-6 for speeds greater than 35 mph); or
2. For one (1) hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) fall above the curve in Figure 4C-7 (or Figure 4C-8 for speeds greater than 35 mph).

This warrant applies only to those locations where the nearest traffic signal along the major street is greater than 300 feet away and where a new traffic signal at the study intersection would not unduly restrict platooned flow of traffic.

Based on the pedestrian volumes crossing Sandy Lake Road, as shown in Table 1, very few pedestrians cross the major roadway, and the threshold volumes are not met. **Warrant 4 was NOT MET at this intersection.**

Warrant 5 – School Crossing

This warrant applies at an established school crossing where a traffic engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of school children at the school crossing shows that the number of adequate gaps in the traffic during the period when the children are using the crossing is less than the number of minutes in the same period.

Since this intersection is not an established school crossing, **Warrant 5 was NOT APPLICABLE.**

Warrant 6 – Coordinated Signal System

Progressive movement control sometimes requires traffic signal installations at intersections where they would not otherwise be warranted in order to maintain proper platooning of vehicles and effectively regulate group speed. This warrant is met when one (1) of the following requirements are met:

1. On a one-way street or a street which has predominantly unidirectional traffic, the adjacent signals are so far apart that they do not provide the required degree of platooning.
2. On a two-way street, adjacent signals do not provide the necessary degree of platooning and the proposed and adjacent signals could constitute a progressive signal system.

This warrant should not be applied where the ultimate signal spacing would be less than 1,000 feet. The nearest signalized intersections along Sandy Lake Road are located approximately 865 feet to the east and approximately 925 feet to the west. Due to the existing spacing of traffic signals, **Warrant 6 is NOT APPLICABLE at this intersection.**

Warrant 7 – Crash Experience

The warrant is satisfied when:

1. Adequate trial of less restrictive remedies with satisfactory observance and enforcement has failed to reduce the crash frequency; and
2. Five or more reported crashes, of types susceptible to correction by traffic signal control, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and

3. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1, or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours. If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

The City of Coppell Police Department provided Lee Engineering with crash reports that have occurred at this intersection during the previous three-year period. There was a total of three (3) reported crashes in the vicinity of this intersection over a 36-month period with only one (1) of these crashes susceptible to correction by traffic signal control. Based on the crash data provided, **Warrant 7 is NOT MET at this intersection.** In addition, vehicular volumes do not meet the threshold volumes in the 80 percent columns in Table 4C-1 for Condition A or Condition B for any hours of the day.

It should be noted that one of the crashes that occurred at this intersection resulted in a fatality. However, based on the provided crash report, this crash does not appear to be susceptible to correction by traffic signal control.

Warrant 8 – Roadway Network

The systems warrant is intended to encourage concentration and organization of traffic flow networks. This warrant is applicable when the common intersection of two major routes:

1. Has a total existing, or immediately projected, entering volume of at least 1,000 vehicles during the peak hour of a typical weekday and has five-year projected traffic volumes, based on an engineering study, which meet one or more of Warrants 1, 2, and 3 during an average weekday; or
2. Has a total existing or immediately projected entering volume of at least 1,000 vehicles for each of any five hours of a Saturday and/or Sunday.

A major route as used in this signal warrant shall have one or more of the following characteristics:

1. It is part of the street or highway system that serves as the principal roadway network for through traffic flow; or
2. It includes rural or suburban highways outside, entering or traversing a City; or
3. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study; or
4. It connects areas of principal traffic generation; or
5. It has street freeway or expressway ramp terminals.

In the City of Coppell *Thoroughfare Plan*, Sandy Lake Road is classified as a Boulevard. However, Winding Hollow Lane is considered a local street in the thoroughfare plan, and cannot be considered a major route. In addition, neither Warrants 1, 2, or 3 are currently met. Therefore, **Warrant 8 is NOT MET at this intersection.**

Warrant 9 – Intersection Near a Grade Crossing

This signal warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:

1. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and
2. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13 of the Texas MUTCD.

A railroad grade crossing is not located within 140 feet of this intersection. **Warrant 9 is NOT APPLICABLE for this intersection.**

SIGHT DISTANCE EVALUATION

As part of this study, the stopping sight distance for vehicles on Sandy Lake Road was assessed. Motorists traveling along the road should have adequate time to react and bring their vehicle to a stop after they see a vehicle enter the roadway from the minor street. The recommended stopping sight distance for a design speed of 40 mph is 305 feet, based on the 2011 edition of *A Policy on Geometric Design of Highways and Streets* published by the American Association of State Highway and Transportation Officials (AASHTO). **Table 4** presents the available stopping sight distance for motorists on Sandy Lake Road.

Table 3: Stopping Sight Distance Evaluation

Major Roadway	Sandy Lake Road	
Posted Speed Limit	40 mph	
Minor Roadway	Winding Hollow Lane	
Approach	Eastbound	Westbound
Recommended Stopping Sight Distance	305 feet	
Available Stopping Sight Distance	>400 feet	>450 feet
Sight Distance Available > Recommended	Yes	Yes

As shown in Table 3 and based on the field investigation results, available stopping sight distance is greater than the minimum recommended for a design speed of 40 mph. Thus, a vehicle traveling on Sandy Lake Road at 40 mph should be able to stop if a vehicle enters the roadway from Winding Hollow Lane, assuming typical perception-reaction time and deceleration.

In addition, sight distance on the minor street (Winding Hollow Lane) approaches to the intersection was assessed. On the stop-controlled approaches, the motorist should be able to see if and when adequate gaps exist to perform their desired maneuver.

The intersection sight distance required for the stop-controlled approaches was estimated using the procedures developed by the American Association of State Highway and Transportation Officials (AASHTO) and published in the 2011 edition of *A Policy on Geometric Design of Highways and Streets*. **Table 4** presents the required and available sight distance for vehicles turning onto Sandy Lake Road at Winding Hollow Lane.

Table 4: Intersection Sight Distance Evaluation

Major Roadway	Sandy Lake Road	
Posted Speed Limit	40 mph	
Minor Roadway	Winding Hollow Lane	
Approach	Northbound	Southbound
Required Intersection Sight Distance	515 feet	
Available Sight Distance to the Left	325 feet	437 feet
Available Sight Distance to the Right	491 feet	525 feet ¹
Sight Distance Available > Required		
To the Left	NO	NO
To the Right	NO	Yes

¹ Sight distance temporarily obstructed by plants in median when vehicle is 337 feet away and 454 feet away. Sight distance does not appear to exceed 525 feet due to the vertical curve on Sandy Lake Road.

As shown in Table 4 and based on a comparison of the field investigation results of the available sight distance to the required sight distance, intersection sight distance for the minor street is less than required. On the northbound approach of Winding Hollow Lane sight distance to the left is obstructed by the retaining wall on the southwest corner of the intersection, as shown in **Figure 3** and **Figure 4**. Sight distance to the right is less than required due to vegetation in the median on Sandy Lake Road, as shown in **Figure 5** and **Figure 6**. On the southbound approach of Winding Hollow Lane sight distance to the left is obstructed by the bridge and horizontal curvature to the east on Sandy Lake Road, as shown in **Figure 7** and **Figure 8**. For reference, the sight distance to the right on the southbound approach of Winding Hollow Lane is shown in **Figure 9**.

It should be noted that adequate sight distance appears to be available for vehicles turning left from Sandy Lake Road to Winding Hollow Lane in both directions, based on conditions at the time of the field visit.

In order to improve intersection sight distance, it is recommended to remove or trim the trees and bushes in the median along Sandy Lake Road. The City could consider installing ‘Intersection Ahead’ signs on the eastbound and westbound approaches of Sandy Lake Road. Flashing beacons could be added for additional emphasis.

Figure 3: Sight Distance to the Left on Northbound Winding Hollow Lane at Sandy Lake Road

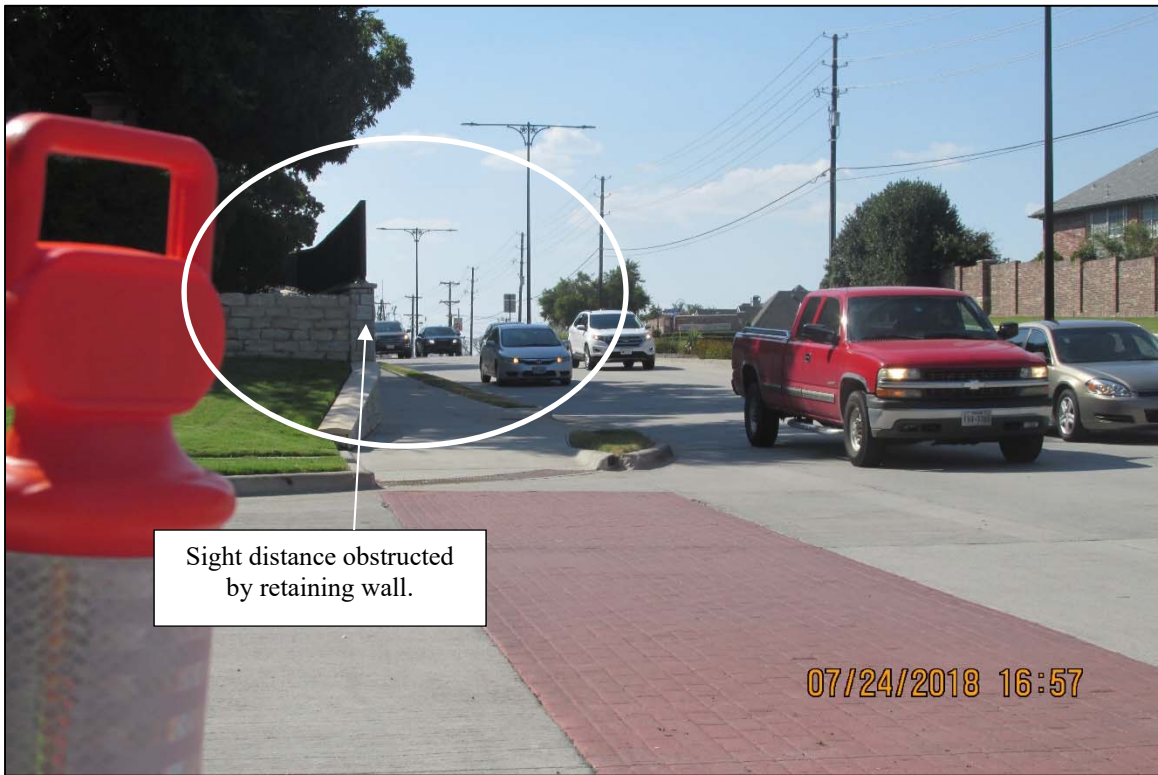


Figure 4: Eastbound Sandy Lake Road Approaching Northbound Winding Hollow Lane



Figure 5: Sight Distance to the Right on Northbound Winding Hollow Lane at Sandy Lake Road

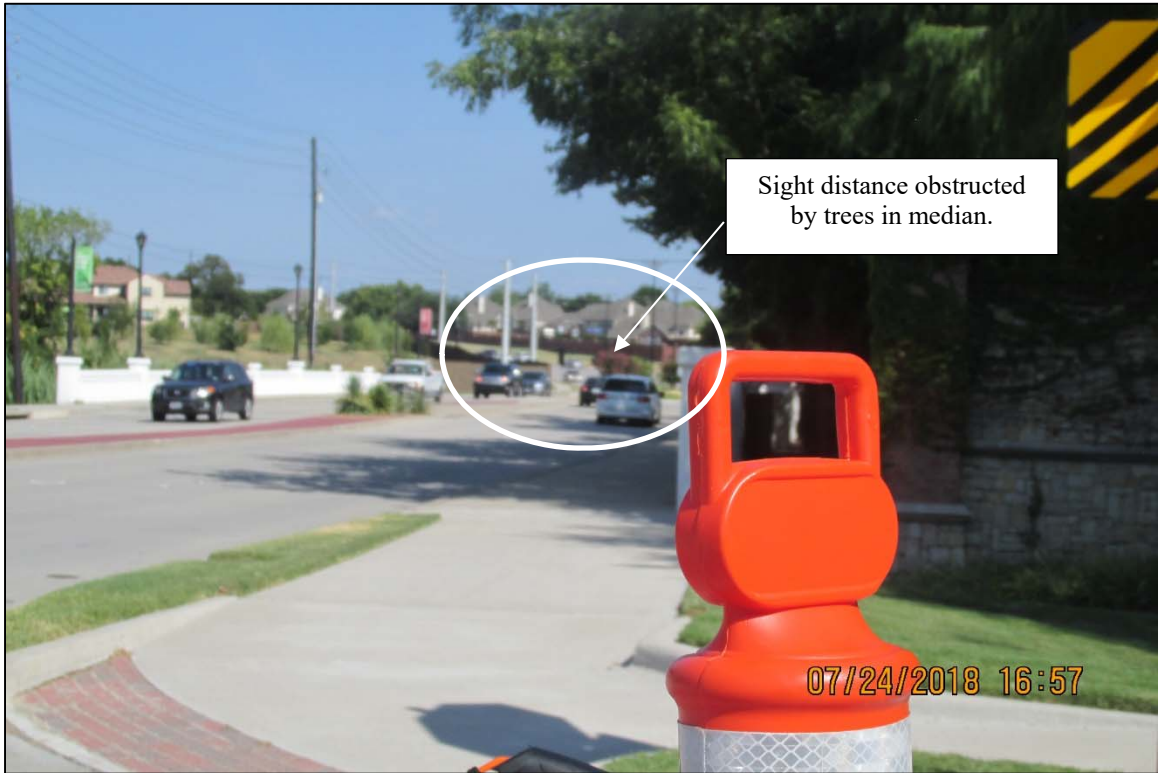


Figure 6: Westbound Sandy Lake Road Approaching Northbound Winding Hollow Lane



Figure 7: Sight Distance to the Left on Southbound Winding Hollow Lane at Sandy Lake Road



Figure 8: Westbound Sandy Lake Road Approaching Southbound Winding Hollow Lane



Figure 9: Sight Distance to the Right on Southbound Winding Hollow Lane at Sandy Lake Road



CONCLUSION

Based on the existing traffic volumes and this traffic signal warrant analysis, traffic signal warrants are not satisfied for the intersection of Sandy Lake Road and Winding Hollow Lane. A summary of the traffic signal warrants is provided in **Table 5**.

Table 5: Warrant Summary – Sandy Lake Road and Winding Hollow Lane

Warrant	Warrant Met?	Notes
1 – Eight-Hour Vehicular Volume	NO	Condition A – 0 hours met (8 required)
		Condition B – 0 hours met (8 required)
		Combination – 0 hours met (8 required)
2 – Four-Hour Vehicular Volume	NO	0 hours met (4 required)
3 – Peak Hour	N/A	Not a “special generator”
4 – Pedestrian Volume	NO	0 hours met for 4-hour and peak hour
5 – School Crossing	N/A	Not an established school crossing
6 – Coordinated Signal System	N/A	Spacing of adjacent signals less than 1,000’
7 – Crash Experience	NO	Crash history does not meet warrants
8 – Roadway Network	NO	Not an intersection of two major routes
9 – Near a Grade Crossing	N/A	Not adjacent to a grade crossing

Based on the results of this traffic signal warrant analysis, the installation of a traffic signal is not recommended at this intersection at this time.

It should be noted that it is likely that the 85th percentile speed along Sandy Lake Road exceeds 40 mph. However, traffic volume warrants are still not met even when evaluated for high-speed conditions (reduces 70% warrant thresholds).

In order to improve sight distance, it is recommended to remove or trim the trees and bushes in the median along Sandy Lake Road. The City could consider installing ‘Intersection Ahead’ signs on the eastbound and westbound approaches of Sandy Lake Road. Flashing beacons could be added for additional emphasis.

If you have any comments or questions regarding this study, please feel free to contact us at your convenience.

APPENDIX

GRAM Traffic NTX Inc.
1120 W. Lovers Lane

Arlington, Texas, United States 76013
817.265.8968 john@gramtx.com

Count Name: SANDY LAKE RD @ WINDING HOLLOW LN
Site Code:
Start Date: 07/18/2018
Page No: 1

Turning Movement Data

Start Time	WINDING HOLLOW LN Southbound						SANDY LAKE RD Westbound						WINDING HOLLOW LN Northbound						SANDY LAKE RD Eastbound							
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Int. Total	
12:00 AM	0	0	0	0	1	0	1	26	0	0	0	27	1	0	0	0	0	0	1	0	9	2	0	0	11	39
12:15 AM	0	0	0	0	0	0	0	11	0	0	0	11	4	0	0	0	0	4	0	2	0	0	0	2	17	
12:30 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	5	0	0	0	5	9	
12:45 AM	0	0	1	0	0	1	1	1	0	0	0	2	0	0	0	0	0	0	1	5	2	0	0	8	11	
Hourly Total	0	0	1	0	1	1	2	42	0	0	0	44	5	0	0	0	0	5	1	21	4	0	0	26	76	
1:00 AM	0	0	0	0	0	0	1	11	0	0	0	12	0	0	1	0	0	1	0	1	0	0	0	1	14	
1:15 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	2	4	0	0	0	6	11	
1:30 AM	0	0	0	0	0	0	1	6	0	0	0	7	0	0	0	0	0	0	0	6	0	0	0	6	13	
1:45 AM	0	0	0	0	0	0	1	7	0	0	0	8	0	0	1	0	0	1	0	2	0	0	0	2	11	
Hourly Total	0	0	0	0	0	0	3	29	0	0	0	32	0	0	2	0	0	2	2	13	0	0	0	15	49	
2:00 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	4	0	0	0	4	10	
2:15 AM	0	0	0	0	0	0	0	3	0	0	0	3	1	0	0	0	0	1	0	1	0	0	0	1	5	
2:30 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	3	
2:45 AM	0	0	0	0	0	0	0	3	0	1	0	4	0	0	0	0	0	0	0	3	0	0	0	3	7	
Hourly Total	0	0	0	0	0	0	0	14	0	1	0	15	1	0	0	0	0	1	0	9	0	0	0	9	25	
3:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	3	
3:15 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	2	0	0	0	2	5	
3:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	7	
3:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	7	0	0	0	7	8	
Hourly Total	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	16	0	0	0	16	23	
4:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	5	0	0	0	5	9	
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	14	
4:30 AM	1	0	0	0	0	1	1	5	0	0	0	6	0	1	1	0	0	2	0	17	0	0	0	17	26	
4:45 AM	0	0	0	0	0	0	0	15	0	0	0	15	1	0	0	0	0	1	0	33	0	0	0	33	49	
Hourly Total	1	0	0	0	0	1	1	24	0	0	0	25	1	1	1	0	0	3	0	69	0	0	0	69	98	
5:00 AM	0	0	0	2	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	24	0	0	0	24	29	
5:15 AM	0	0	1	0	2	1	0	11	0	0	0	11	0	0	0	0	0	0	0	36	0	0	0	36	48	
5:30 AM	0	0	0	0	0	0	0	18	0	0	0	18	2	0	0	0	0	2	0	72	0	0	0	72	92	
5:45 AM	1	0	0	0	0	1	0	27	0	0	0	27	0	0	0	0	1	0	2	80	2	0	0	84	112	
Hourly Total	1	0	1	0	4	2	0	61	0	0	0	61	2	0	0	0	1	2	2	212	2	0	0	216	281	
6:00 AM	0	0	0	0	2	0	0	37	1	0	0	38	0	0	1	0	3	1	0	41	0	0	0	41	80	
6:15 AM	0	0	0	0	0	0	0	35	0	0	0	35	4	0	1	0	0	5	0	60	0	0	0	60	100	
6:30 AM	1	0	0	0	1	1	0	56	0	0	0	56	1	0	1	0	1	2	0	73	1	0	1	74	133	
6:45 AM	0	1	1	0	0	2	0	76	0	0	1	76	4	0	1	0	0	5	0	100	1	0	1	101	184	
Hourly Total	1	1	1	0	2	3	0	204	1	0	1	205	9	0	4	0	4	13	0	274	2	0	2	276	497	
7:00 AM	2	0	0	0	3	2	0	74	0	0	0	74	6	0	3	0	0	9	0	85	2	0	0	87	172	
7:15 AM	0	0	1	0	3	1	0	84	1	0	0	85	3	0	1	0	0	4	1	94	1	0	0	96	186	
7:30 AM	3	0	3	0	1	6	0	102	0	0	0	102	8	0	2	0	2	10	1	134	1	0	0	136	254	
7:45 AM	3	0	4	0	2	7	0	112	0	0	0	112	3	0	6	0	0	9	4	124	5	0	0	133	261	
Hourly Total	8	0	8	0	9	16	0	372	1	0	0	373	20	0	12	0	2	32	6	437	9	0	0	452	873	

8:00 AM	2	0	4	0	1	6	1	112	1	0	0	114	7	0	2	0	12	9	1	108	1	0	0	110	239
8:15 AM	3	0	5	0	0	8	1	118	2	0	0	121	5	0	0	0	0	5	1	134	3	0	0	138	272
8:30 AM	1	0	3	0	0	4	1	104	2	0	0	107	7	0	3	0	1	10	0	122	2	1	1	125	246
8:45 AM	2	0	6	0	2	8	0	100	0	0	0	100	3	1	5	0	1	9	2	115	2	0	0	119	236
Hourly Total	8	0	18	0	3	26	3	434	5	0	0	442	22	1	10	0	14	33	4	479	8	1	1	492	993
9:00 AM	0	0	5	0	2	5	0	82	0	0	0	82	1	0	1	0	1	2	3	100	4	0	0	107	196
9:15 AM	1	0	0	0	0	1	2	88	1	0	0	91	7	0	1	0	0	8	5	96	3	0	0	104	204
9:30 AM	3	0	2	0	1	5	0	67	1	0	0	68	2	0	1	0	0	3	2	79	3	1	0	85	161
9:45 AM	5	0	3	0	0	8	0	71	2	0	0	73	3	0	0	0	0	3	3	66	4	0	0	73	157
Hourly Total	9	0	10	0	3	19	2	308	4	0	0	314	13	0	3	0	1	16	13	341	14	1	0	369	718
10:00 AM	3	0	1	0	1	4	1	71	0	0	0	72	3	0	1	0	0	4	2	92	3	0	0	97	177
10:15 AM	3	0	2	0	0	5	2	42	2	0	0	46	6	0	3	0	0	9	1	77	3	0	0	81	141
10:30 AM	2	0	2	0	0	4	0	54	1	0	0	55	6	1	1	0	0	8	3	73	5	1	0	82	149
10:45 AM	0	1	5	0	0	6	2	72	2	0	0	76	4	0	1	0	0	5	3	80	6	0	0	89	176
Hourly Total	8	1	10	0	1	19	5	239	5	0	0	249	19	1	6	0	0	26	9	322	17	1	0	349	643
11:00 AM	3	0	2	0	0	5	2	139	2	0	0	143	6	1	4	0	0	11	3	93	2	0	0	98	257
11:15 AM	2	0	3	0	0	5	1	93	2	0	0	96	2	0	2	0	0	4	1	88	3	0	0	92	197
11:30 AM	3	1	0	0	0	4	0	137	1	0	0	138	6	0	1	0	1	7	2	100	4	0	0	106	255
11:45 AM	0	0	2	0	1	2	2	154	2	0	0	158	2	0	2	0	0	4	2	110	5	0	0	117	281
Hourly Total	8	1	7	0	1	16	5	523	7	0	0	535	16	1	9	0	1	26	8	391	14	0	0	413	990
12:00 PM	3	0	1	0	0	4	0	166	2	0	0	168	3	0	1	0	0	4	0	132	3	0	0	135	311
12:15 PM	3	0	0	0	0	3	2	119	3	0	0	124	3	0	2	0	0	5	1	124	4	0	0	129	261
12:30 PM	0	0	2	0	2	2	0	134	3	0	0	137	2	0	5	0	0	7	3	140	2	0	0	145	291
12:45 PM	1	0	6	0	0	7	3	102	2	0	0	107	4	0	6	0	0	10	4	141	2	0	0	147	271
Hourly Total	7	0	9	0	2	16	5	521	10	0	0	536	12	0	14	0	0	26	8	537	11	0	0	556	1134
1:00 PM	2	1	6	0	0	9	0	139	1	0	0	140	3	0	1	0	0	4	2	115	7	0	0	124	277
1:15 PM	2	0	2	0	0	4	1	98	2	0	0	101	8	0	2	0	0	10	3	127	4	0	0	134	249
1:30 PM	1	0	1	0	1	2	1	112	1	0	0	114	3	0	2	0	0	5	1	119	11	0	0	131	252
1:45 PM	5	0	3	0	0	8	1	98	3	0	0	102	4	0	1	0	0	5	1	108	7	0	0	116	231
Hourly Total	10	1	12	0	1	23	3	447	7	0	0	457	18	0	6	0	0	24	7	469	29	0	0	505	1009
2:00 PM	0	1	2	0	0	3	2	105	2	0	0	109	2	0	1	0	0	3	5	92	6	0	0	103	218
2:15 PM	1	0	1	0	1	2	0	87	2	0	0	89	6	0	3	0	0	9	2	91	5	0	0	98	198
2:30 PM	0	0	3	0	0	3	2	87	1	0	0	90	7	1	0	0	0	8	1	113	6	0	0	120	221
2:45 PM	1	0	4	0	0	5	2	115	0	1	0	118	2	0	1	0	0	3	3	122	3	0	0	128	254
Hourly Total	2	1	10	0	1	13	6	394	5	1	0	406	17	1	5	0	0	23	11	418	20	0	0	449	891
3:00 PM	2	0	2	0	0	4	0	104	1	0	0	105	3	0	1	0	0	4	0	88	2	0	0	90	203
3:15 PM	2	0	0	0	0	2	1	105	0	0	0	106	5	0	0	0	0	5	4	102	4	0	0	110	223
3:30 PM	2	0	1	0	0	3	0	126	1	0	0	127	2	1	0	0	0	3	7	100	2	0	0	109	242
3:45 PM	3	0	1	0	0	4	1	100	1	0	0	102	3	0	1	0	0	4	2	90	9	1	0	102	212
Hourly Total	9	0	4	0	0	13	2	435	3	0	0	440	13	1	2	0	0	16	13	380	17	1	0	411	880
4:00 PM	1	0	2	0	0	3	1	138	1	0	1	140	6	0	1	0	1	7	4	117	4	1	0	126	276
4:15 PM	2	0	1	0	0	3	0	108	1	0	0	109	6	0	0	0	0	6	2	145	8	1	0	156	274
4:30 PM	0	0	3	0	0	3	1	141	2	0	0	144	2	0	2	0	0	4	3	165	8	0	0	176	327
4:45 PM	2	0	2	0	0	4	2	150	2	0	0	154	5	0	1	0	0	6	3	176	10	0	0	189	353
Hourly Total	5	0	8	0	0	13	4	537	6	0	1	547	19	0	4	0	1	23	12	603	30	2	0	647	1230
5:00 PM	3	0	1	0	0	4	2	156	0	0	0	158	3	0	0	0	0	3	2	201	8	0	0	211	376
5:15 PM	0	0	3	0	0	3	3	157	2	0	0	162	1	0	0	0	1	1	2	172	12	0	0	186	352
5:30 PM	1	0	4	0	0	5	2	173	2	0	0	177	4	0	0	0	0	4	8	213	8	0	0	229	415
5:45 PM	1	0	4	2	0	7	0	151	2	0	0	153	6	1	0	0	1	7	5	163	10	0	0	178	345
Hourly Total	5	0	12	2	0	19	7	637	6	0	0	650	14	1	0	0	2	15	17	749	38	0	0	804	1488
6:00 PM	2	0	4	0	0	6	5	123	2	0	0	130	7	0	2	0	0	9	5	147	11	0	0	163	308
6:15 PM	1	0	1	0	0	2	3	113	1	0	0	117	1	0	2	0	0	3	1	125	8	0	0	134	256

6:30 PM	2	0	2	0	0	4	2	109	5	0	0	116	3	0	3	0	0	0	6	5	140	5	0	0	150	276
6:45 PM	1	0	2	0	0	3	2	94	2	0	0	98	7	1	1	0	1	9	1	1	100	6	0	0	107	217
Hourly Total	6	0	9	0	0	15	12	439	10	0	0	461	18	1	8	0	1	27	12	512	30	0	0	554	1057	
7:00 PM	0	0	7	0	2	7	1	110	0	0	0	111	5	0	0	0	0	5	4	84	5	0	0	93	216	
7:15 PM	0	0	2	0	0	2	1	84	4	0	0	89	2	0	2	0	0	4	2	84	7	0	0	93	188	
7:30 PM	2	1	2	0	0	5	0	76	1	0	0	77	5	0	2	0	1	7	4	61	13	0	0	78	167	
7:45 PM	3	1	3	0	2	7	0	64	4	1	0	69	6	0	1	0	0	7	1	58	3	0	0	62	145	
Hourly Total	5	2	14	0	4	21	2	334	9	1	0	346	18	0	5	0	1	23	11	287	28	0	0	326	716	
8:00 PM	1	1	4	0	1	6	1	76	0	0	0	77	4	0	1	0	0	5	2	62	5	0	0	69	157	
8:15 PM	1	0	2	0	0	3	0	63	1	0	0	64	5	0	1	0	0	6	5	63	5	0	0	73	146	
8:30 PM	2	0	2	0	0	4	1	75	3	0	0	79	5	0	1	0	0	6	3	59	5	0	0	67	156	
8:45 PM	1	1	0	0	1	2	2	63	2	0	0	67	0	0	3	0	2	3	3	80	2	0	0	85	157	
Hourly Total	5	2	8	0	2	15	4	277	6	0	0	287	14	0	6	0	2	20	13	264	17	0	0	294	616	
9:00 PM	0	0	0	0	1	0	0	75	0	0	0	75	3	0	3	0	0	6	4	53	6	0	0	63	144	
9:15 PM	0	0	1	0	1	1	1	54	1	0	0	56	1	0	0	0	0	1	0	48	7	0	0	55	113	
9:30 PM	0	0	0	0	0	0	0	41	1	0	0	42	3	0	1	0	0	4	0	49	4	1	0	54	100	
9:45 PM	1	0	1	0	0	2	0	38	2	0	0	40	0	0	0	0	0	0	0	35	4	0	0	39	81	
Hourly Total	1	0	2	0	2	3	1	208	4	0	0	213	7	0	4	0	0	11	4	185	21	1	0	211	438	
10:00 PM	1	0	1	0	0	2	3	39	1	0	0	43	1	0	0	0	0	1	1	26	1	0	0	28	74	
10:15 PM	0	0	1	0	0	1	2	28	0	0	0	30	0	0	2	0	0	2	3	19	1	0	0	23	56	
10:30 PM	0	0	0	0	0	0	0	22	1	0	0	23	1	0	1	0	0	2	0	27	0	0	0	27	52	
10:45 PM	0	0	1	0	0	1	0	24	1	0	0	25	1	0	0	0	0	1	0	15	1	0	0	16	43	
Hourly Total	1	0	3	0	0	4	5	113	3	0	0	121	3	0	3	0	0	6	4	87	3	0	0	94	225	
11:00 PM	0	0	0	0	0	0	0	16	0	0	0	16	0	0	3	0	0	3	0	24	1	0	0	25	44	
11:15 PM	0	0	0	0	0	0	0	15	0	0	0	15	0	0	0	0	0	0	0	19	5	0	0	24	39	
11:30 PM	0	0	0	0	0	0	0	57	1	0	0	58	0	0	0	0	0	0	2	11	1	1	0	15	73	
11:45 PM	0	1	0	0	0	1	1	29	1	0	0	31	0	1	1	0	0	2	0	7	0	0	0	7	41	
Hourly Total	0	1	0	0	0	1	1	117	2	0	0	120	0	1	4	0	0	5	2	61	7	1	0	71	197	
Grand Total	100	10	147	2	36	259	73	6716	94	3	2	6886	261	9	108	0	30	378	159	7136	321	8	3	7624	15147	
Approach %	38.6	3.9	56.8	0.8	-	-	1.1	97.5	1.4	0.0	-	-	69.0	2.4	28.6	0.0	-	-	2.1	93.6	4.2	0.1	-	-	-	
Total %	0.7	0.1	1.0	0.0	-	1.7	0.5	44.3	0.6	0.0	-	45.5	1.7	0.1	0.7	0.0	-	2.5	1.0	47.1	2.1	0.1	-	50.3	-	
Lights	98	8	141	2	-	249	71	6621	89	3	-	6784	257	9	107	0	-	373	155	7022	315	8	-	7500	14906	
% Lights	98.0	80.0	95.9	100.0	-	96.1	97.3	98.6	94.7	100.0	-	98.5	98.5	100.0	99.1	-	-	98.7	97.5	98.4	98.1	100.0	-	98.4	98.4	
Mediums	1	2	6	0	-	9	2	73	5	0	-	80	4	0	1	0	-	5	3	88	6	0	-	97	191	
% Mediums	1.0	20.0	4.1	0.0	-	3.5	2.7	1.1	5.3	0.0	-	1.2	1.5	0.0	0.9	-	-	1.3	1.9	1.2	1.9	0.0	-	1.3	1.3	
Articulated Trucks	1	0	0	0	-	1	0	22	0	0	0	22	0	0	0	0	-	0	1	26	0	0	-	27	50	
% Articulated Trucks	1.0	0.0	0.0	0.0	-	0.4	0.0	0.3	0.0	0.0	-	0.3	0.0	0.0	0.0	-	-	0.0	0.6	0.4	0.0	0.0	-	0.4	0.3	
Bicycles on Crosswalk	-	-	-	-	11	-	-	-	-	-	1	-	-	-	-	-	12	-	-	-	-	-	3	-	-	
% Bicycles on Crosswalk	-	-	-	-	30.6	-	-	-	-	-	50.0	-	-	-	-	40.0	-	-	-	-	-	-	100.0	-	-	
Pedestrians	-	-	-	-	25	-	-	-	-	-	1	-	-	-	-	18	-	-	-	-	-	-	0	-	-	
% Pedestrians	-	-	-	-	69.4	-	-	-	-	-	50.0	-	-	-	-	60.0	-	-	-	-	-	-	0.0	-	-	

GRAM Traffic NTX Inc.
 1120 W. Lovers Lane
 Arlington, Texas, United States 76013
 817.265.8968 john@gramtx.com

Count Name: SANDY LAKE RD @ WINDING HOLLOW LN
 Site Code:
 Start Date: 07/18/2018
 Page No: 5

Turning Movement Peak Hour Data (7:30 AM)

Start Time	WINDING HOLLOW LN Southbound						SANDY LAKE RD Westbound						WINDING HOLLOW LN Northbound						SANDY LAKE RD Eastbound					
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total
	7:30 AM	3	0	3	0	1	6	0	102	0	0	0	102	8	0	2	0	2	10	1	134	1	0	0
7:45 AM	3	0	4	0	2	7	0	112	0	0	0	112	3	0	6	0	9	4	124	5	0	0	133	
8:00 AM	2	0	4	0	1	6	1	112	1	0	0	114	7	0	2	0	12	1	108	1	0	0	110	
8:15 AM	3	0	5	0	0	8	1	118	2	0	0	121	5	0	0	0	5	1	134	3	0	0	138	
Total	11	0	16	0	4	27	2	444	3	0	0	449	23	0	10	0	33	7	500	10	0	0	517	
Approach %	40.7	0.0	59.3	0.0	-	-	0.4	98.9	0.7	0.0	-	-	69.7	0.0	30.3	0.0	-	1.4	96.7	1.9	0.0	-	-	
Total %	1.1	0.0	1.6	0.0	-	2.6	0.2	43.3	0.3	0.0	-	43.8	2.2	0.0	1.0	0.0	-	0.7	48.7	1.0	0.0	-	50.4	
PHF	0.917	0.000	0.800	0.000	-	0.844	0.500	0.941	0.375	0.000	-	0.928	0.719	0.000	0.417	0.000	-	0.438	0.933	0.500	0.000	-	0.937	
Lights	11	0	16	0	-	27	2	429	3	0	-	434	23	0	10	0	33	7	493	9	0	-	509	
% Lights	100.0	-	100.0	-	-	100.0	100.0	96.6	100.0	-	-	96.7	100.0	-	100.0	-	100.0	100.0	98.6	90.0	-	-	98.5	
Mediums	0	0	0	0	-	0	0	10	0	0	-	10	0	0	0	0	0	0	5	1	0	-	6	
% Mediums	0.0	-	0.0	-	-	0.0	0.0	2.3	0.0	-	-	2.2	0.0	-	0.0	-	0.0	0.0	1.0	10.0	-	-	1.2	
Articulated Trucks	0	0	0	0	-	0	0	5	0	0	-	5	0	0	0	0	0	0	2	0	0	-	2	
% Articulated Trucks	0.0	-	0.0	-	-	0.0	0.0	1.1	0.0	-	-	1.1	0.0	-	0.0	-	0.0	0.0	0.4	0.0	-	-	0.4	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	0	-	
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	-	
Pedestrians	-	-	-	-	4	-	-	-	-	-	14	-	-	-	-	-	14	-	-	-	-	0	-	
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	

GRAM Traffic NTX Inc.
1120 W. Lovers Lane

Arlington, Texas, United States 76013
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Count Name: SANDY LAKE RD @ WINDING HOLLOW LN
Site Code:
Start Date: 07/18/2018
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Turning Movement Peak Hour Data (4:45 PM)

Start Time	WINDING HOLLOW LN Southbound						SANDY LAKE RD Westbound						WINDING HOLLOW LN Northbound						SANDY LAKE RD Eastbound					
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total
4:45 PM	2	0	2	0	0	4	2	150	2	0	0	154	5	0	1	0	0	6	3	176	10	0	0	189
5:00 PM	3	0	1	0	0	4	2	156	0	0	0	158	3	0	0	0	0	3	2	201	8	0	0	211
5:15 PM	0	0	3	0	0	3	3	157	2	0	0	162	1	0	0	0	1	1	2	172	12	0	0	186
5:30 PM	1	0	4	0	0	5	2	173	2	0	0	177	4	0	0	0	0	4	8	213	8	0	0	229
Total	6	0	10	0	0	16	9	636	6	0	0	651	13	0	1	0	1	14	15	762	38	0	0	815
Approach %	37.5	0.0	62.5	0.0	-	-	1.4	97.7	0.9	0.0	-	92.9	0.0	0.0	7.1	0.0	-	-	1.8	93.5	4.7	0.0	-	-
Total %	0.4	0.0	0.7	0.0	-	1.1	0.6	42.5	0.4	0.0	-	43.5	0.0	0.0	0.1	0.0	-	0.9	1.0	50.9	2.5	0.0	-	54.5
PHF	0.500	0.000	0.625	0.000	-	0.800	0.750	0.919	0.750	0.000	-	0.919	0.650	0.000	0.250	0.000	-	0.583	0.469	0.894	0.792	0.000	-	0.890
Lights	6	0	10	0	0	16	8	635	6	0	0	649	12	0	1	0	0	13	15	751	37	0	0	803
% Lights	100.0	-	100.0	-	-	100.0	88.9	99.8	100.0	-	-	99.7	92.3	-	100.0	-	-	92.9	100.0	98.6	97.4	-	-	98.5
Mediums	0	0	0	0	0	0	1	1	0	0	0	2	1	0	0	0	0	1	0	10	1	0	0	11
% Mediums	0.0	-	0.0	-	-	0.0	11.1	0.2	0.0	-	-	0.3	7.7	-	0.0	-	-	7.1	0.0	1.3	2.6	-	-	1.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
% Articulated Trucks	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-