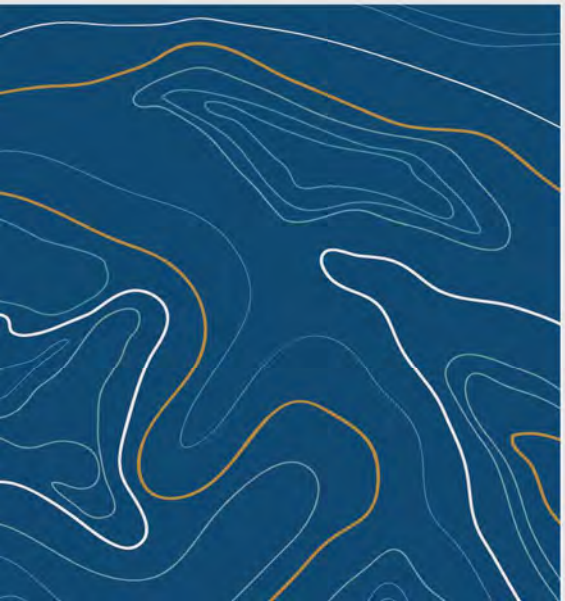
4-SC-26-C / 4-E-26-DP
TIS Version 2
3/23/2026

GRAY HENDRIX ROAD
TRAFFIC IMPACT STUDY

GRAY HENDRIX ROAD
KNOX COUNTY, TN

ARDURRA PROJECT NO. 01830-0000.000



PREPARED FOR:
Trellis Properties
Knoxville, TN

SUBMITTED BY
Ardurra
10025 Investment Drive, Ste 120
Knoxville, TN 37932
865.670.8555

REVISION 1
MARCH 23
2026

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1 EXECUTIVE SUMMARY

This report provides a summary of a traffic impact study that was performed for a proposed residential development to be located along Oak Ridge Highway (S.R. 62) within the Karns community of Knox County, TN. The project site is located south of Oak Ridge Highway (S.R. 62) between Gray Hendrix Road and Padgett Hill Lane. The conceptual plan for this project proposes a total of 165 Townhomes.

The conceptual plan shows one site access location onto Oak Ridge Highway (S.R. 62), approximately 600 feet west of Padget Hill Lane. The proposed site access, Road "A", will tie into Oak Ridge Highway (S.R. 62) utilizing the existing Tiger Wash Driveway.

The purpose of this study was the evaluation of the traffic operational and safety impacts of the proposed residential development upon roadways in the vicinity of the site. Of particular interest in this study is the proposed development access onto Oak Ridge Highway (S.R. 62) as mentioned above. Appropriate intersection evaluations were conducted at these locations in order to determine the anticipated impacts and to establish recommended measures to mitigate these impacts. These evaluations included trip generation, trip distribution, capacity analyses, turn lane warrant analyses and sight distance assessments.

The primary conclusion of this study is that traffic generated from the proposed residential development will have minor impacts on the study intersection. The study intersection at proposed site accesses was found to operate at a LOS "D" and will impact current side street delay.

The following list is a summary of the improvements that are recommended to be implemented with the construction of this project:

1. Install STOP sign at unsignalized Proposed Road "A" at Oak Ridge Highway (S.R. 62).

2. Add an eastbound flared right turn approach at unsignalized Proposed Road "A" at Oak Ridge Highway (S.R. 62).

2 INTRODUCTION & PURPOSE OF STUDY

This report provides a summary of a traffic impact study that was performed for a proposed residential development to be located along Oak Ridge Highway (S.R. 62) within the community of Karns in Knox County, TN. The project site is located south of Oak Ridge Highway (S.R. 62) between Gray Hendrix Road and Padgett Hill Lane. FIGURE 1 is a location map identifying the major roadways in the vicinity of the site.

FIGURE 1
LOCATION MAP

The conceptual plan for this project proposes a residential development with 165 Townhomes. The project is to have one site access location, Road "A" onto Oak Ridge Highway (S.R. 62), approximately 600 feet west of Padgett Hill Lane. The proposed roadway (Road "A") will tie into Oak Ridge Highway (S.R. 62) utilizing the existing Tiger Wash Driveway. FIGURE 2 is a Conceptual Site Plan which details the proposed site configuration.

The purpose of this study was the evaluation of the traffic operational and safety impacts of the proposed residential development upon roadways in the vicinity of the site. Of particular interest in this study are the proposed development access mentioned above. Appropriate intersection evaluations were conducted at these locations to determine the anticipated impacts and to establish recommended measures to mitigate these impacts. These evaluations included trip generation, trip distribution, capacity analyses, turn lane warrant analyses and a sight distance assessment.

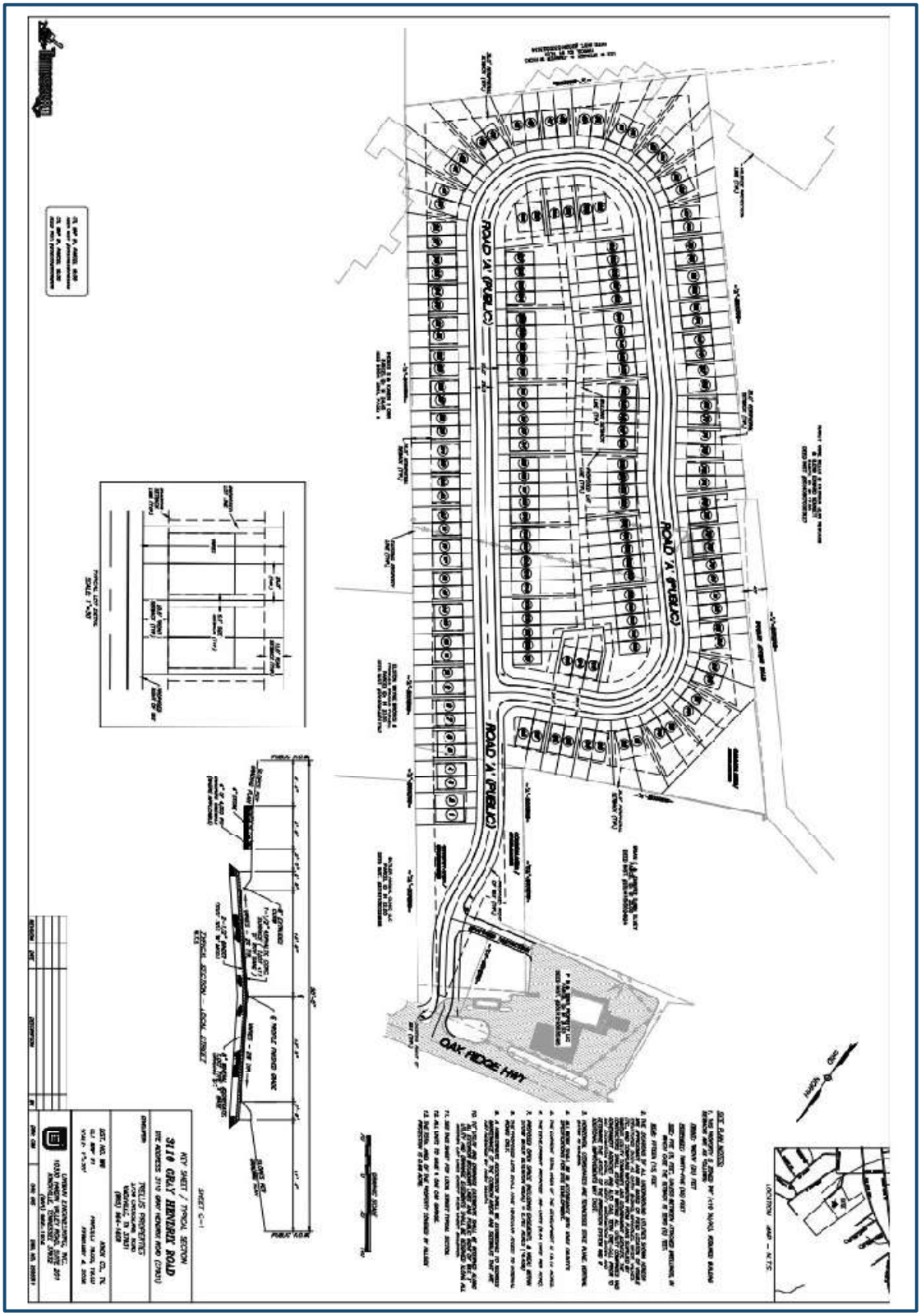


FIGURE 2
CONCEPTUAL SITE PLAN

3 EXISTING CONDITIONS

EXISTING ROADWAY CONDITIONS

According to the TDOT Roadway Functional Classification Map, Oak Ridge Highway (S.R. 62) is classified as a Principal Arterial between Pellissippi Parkway (S.R. 162) and Schaad Road that provides east-west access for the Karns community in Knox County. Oak Ridge Highway (S.R. 62) carries traffic to and from both residential and agricultural areas. In the vicinity of the proposed development, the roadway consists of two 11-foot through travel lanes in each direction separated by a 11' two-way left-turn lane. Shoulders exist on either side of the roadway, but no sidewalks are present. The speed limit on Oak Ridge Highway (S.R. 62) is posted as 45 mph. The 2024 ADT on Oak Ridge Highway (S.R. 62) was 16,237 vpd.

EXISTING SITE CONDITIONS

The total site acreage for this project consists of approximately 18.3 acres located south of Oak Ridge Highway (S.R. 62). The site is primarily bordered by general agricultural and residential land uses.

FIGURE 3
EXISTING SITE CONDITIONS

EXISTING TRAFFIC DATA

Existing traffic data was gathered for this study. Annual average daily traffic data (AADT) collected by TDOT and the Knoxville Regional Transportation Planning Organization (TPO) on roadways in the area of the proposed development were utilized. Two count stations, one located on Oak Ridge Highway (S.R. 62) west of Weaver Road and one located on Oak Ridge Highway (S.R. 62) east of Byington-Beaver Ridge Road were felt to have relevance for this study. The most currently available data from these count stations is contained in TABLE 1.

In addition to the available AADT data, intersection turning movement traffic counts were performed to determine the current AM and PM peak hour operating volumes at the intersection of Oak Ridge Highway (S.R. 62) and the existing Tiger Wash driveway. The traffic count was conducted during January 2026. The 2026 peak hour volumes from the existing traffic data are shown in FIGURE 4, and the raw data traffic count summary sheets are contained in APPENDIX A.

TABLE 1
ANNUAL AVERAGE DAILY TRAFFIC COUNT SUMMARY

COUNT YEAR	TDOT COUNT STATION 47000262 OAK RIDGE HIGHWAY WEST OF WEAVER ROAD	KNOX TPO COUNT STATION 093M064 OAK RIDGE HWY (S.R. 62) EAST OF BYINGTON BEAVER RIDGE ROAD
2024	16,237	-
2023	14,798	16,410
2022	14,837	17,230
2021	15,134	-
2020	13,594	14,700
2019	15,374	17,700
2018	13,847	-
2017	14,793	16,290
2016	14,647	15,690
2015	14,118	16,350
2014	14,729	15,870
2013	14,490	14,250
2012	15,509	14,770
2011	14,876	15,570

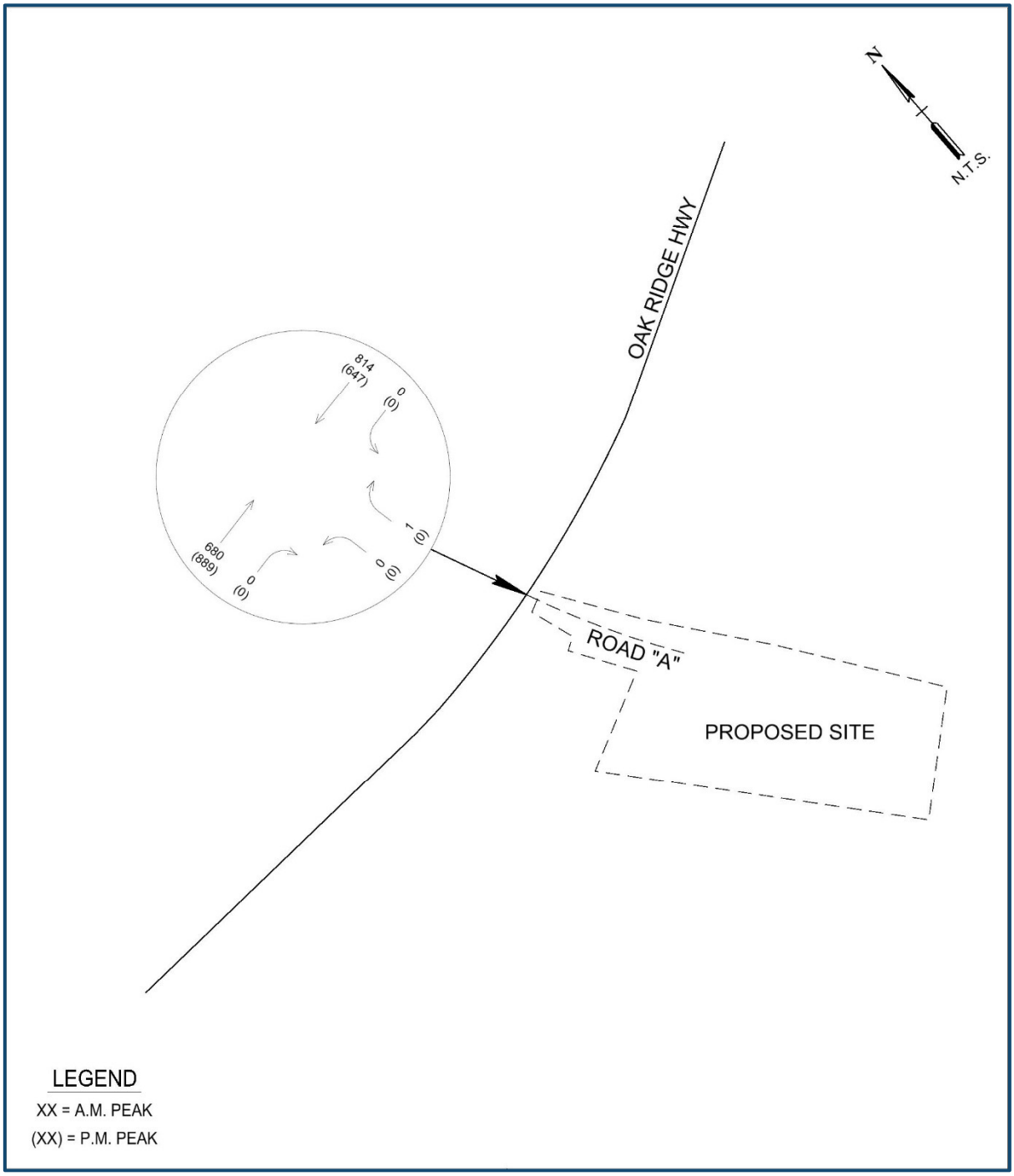


FIGURE 4
2026 EXISTING TRAFFIC VOLUMES

EXISTING CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses employing the methods of the Highway Capacity Manual (7th Edition) were conducted for the existing study intersection. The analyses were performed with the 2026 existing traffic volumes and existing intersection traffic control and lane configurations. The intersection of Oak Ridge Highway (S.R. 62) and Proposed Road "A" was found to operate at a Level-of-Service (LOS) "B" during the AM peak hour and a LOS "A" in the PM peak hour with an approach delay of 14.1 seconds and 0 seconds, respectively. An approach delay of 0 seconds was established during the PM peak hour due to no traffic utilizing the existing Tiger Wash driveway.

The EVALUATIONS section of this report may be referenced for tabular summaries and discussion of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C.

4 BACKGROUND CONDITIONS

BACKGROUND TRAFFIC GROWTH

Due to Oak Ridge Highway (S.R. 62) being a TDOT maintained roadway facility, the year 2031 was established as the study horizon. To determine traffic volumes resulting solely from background traffic growth to year 2031, it was necessary to establish an annual growth rate for existing traffic. The ADT values previously discussed, as well as knowledge of the area, were used to determine an approximate annual growth rate. Based on the available data, a background annual growth rate of 2.0% was assumed. Existing volumes from the intersection of the Tiger Wash driveway at Oak Ridge Highway (S.R. 62) were grown by 2.0% every year from the year 2026, when the counts were conducted, to the year 2031.

The background traffic volumes shown on FIGURE 5 represent the full build out of the proposed residential development and the Year 2031 background growth conditions without traffic related to the proposed development.

BACKGROUND CAPACITY ANALYSES / LEVELS-OF-SERVICE

Appropriate capacity analyses as described in the Existing Conditions section of this report were conducted utilizing the Year 2031 background volumes shown in FIGURE 5. Under Year 2031 background conditions, without traffic related to the development, the intersection of the proposed roadway “Road A” and Oak Ridge Highway (S.R. 62) was found to operate at a Level-of-Service (LOS) “C” during the AM peak hour and at a LOS “A” in the PM peak hour with approach delays of 15.1 seconds and 0 seconds, respectively. An approach delay of 0 seconds was established during the PM peak hour due to existing traffic not utilizing the Tiger Wash driveway.

The EVALUATIONS section of this report may be referenced for tabular summaries and discussion of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C.

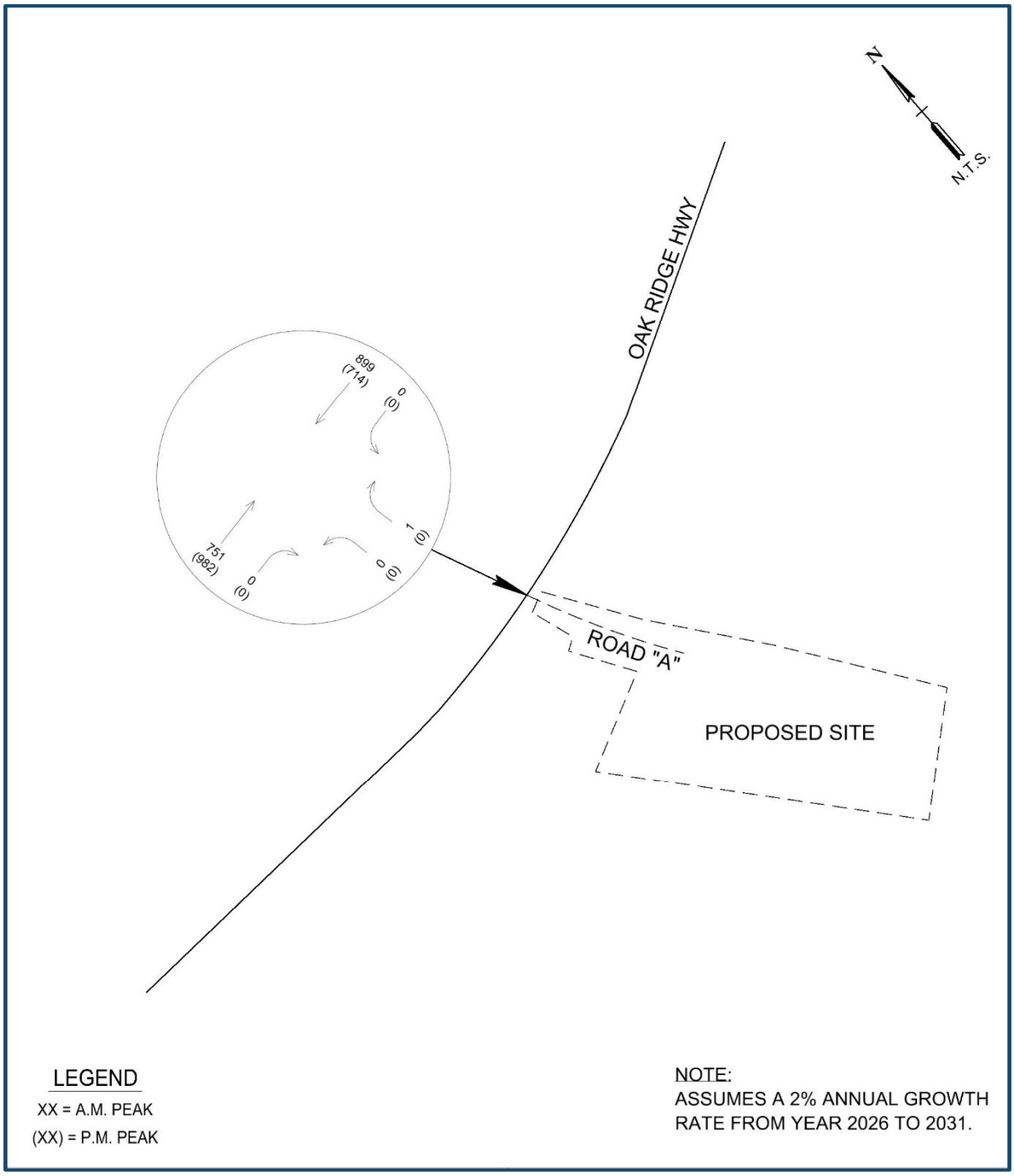


FIGURE 5
2031 BACKGROUND TRAFFIC VOLUMES

5 FUTURE CONDITIONS

TRIP GENERATION

In order to estimate the expected traffic volumes to be generated by the proposed development, the procedures recommended by the Institute of Transportation Engineers were utilized. Trip generation rates developed by the Institute of Transportation Engineers (Trip Generation, 11th Edition) were utilized to generate the estimated trips for the proposed development. The generated traffic volumes were determined based on the data for the weekday, AM peak hour and PM peak hour. Fitted curves were used for the trip generation calculations. Based on standard practices, if the "R-squared" value is 0.75 or greater the fitted curve equation is used for trip generation, otherwise the average rate is used. TABLE 2 provides a summary of the expected newly generated traffic for the development. More detailed information is contained in APPENDIX B.

TABLE 2
TRIP GENERATION SUMMARY

LAND USE	ITE CODE	SIZE	WEEKDAY (TRIPS/DAY)	AM PEAK HOUR (TRIPS/HR)	PM PEAK HOUR (TRIPS/HR)
Single-Family Attached	215	165 D.U.			
Entering Trips			603	20	56
Exiting Trips			604	60	39
Total			1,207	80	95

TRIP DISTRIBUTION AND ASSIGNMENT

FIGURE 6 provides a summary of the trip distribution patterns assumed for this study. These patterns were based on the existing traffic patterns derived from the traffic counts and knowledge of the area. FIGURE 7 provides a summary of the anticipated trips associated with the proposed development as assigned to the study intersection utilizing the trip generation data from TABLE 2 and the distribution patterns shown on FIGURE 6.

FUTURE CAPACITY ANALYSES / LEVELS-OF-SERVICE

Capacity analyses as described in the Existing Conditions section of this report were conducted for 2031, full build-out conditions utilizing the Year 2031 combined volumes shown in FIGURE 8.

Under 2031 combined conditions, the intersection of Oak Ridge Highway (S.R. 62) and the proposed roadway (Road "A") was found to operate at a LOS "D" during both the AM and PM peak hours with an approach delay of 25.3 seconds.

The EVALUATIONS section of this report may be referenced for tabular summaries and discussion of these analyses, while more detailed summaries are presented on the computer printouts contained in APPENDIX C.

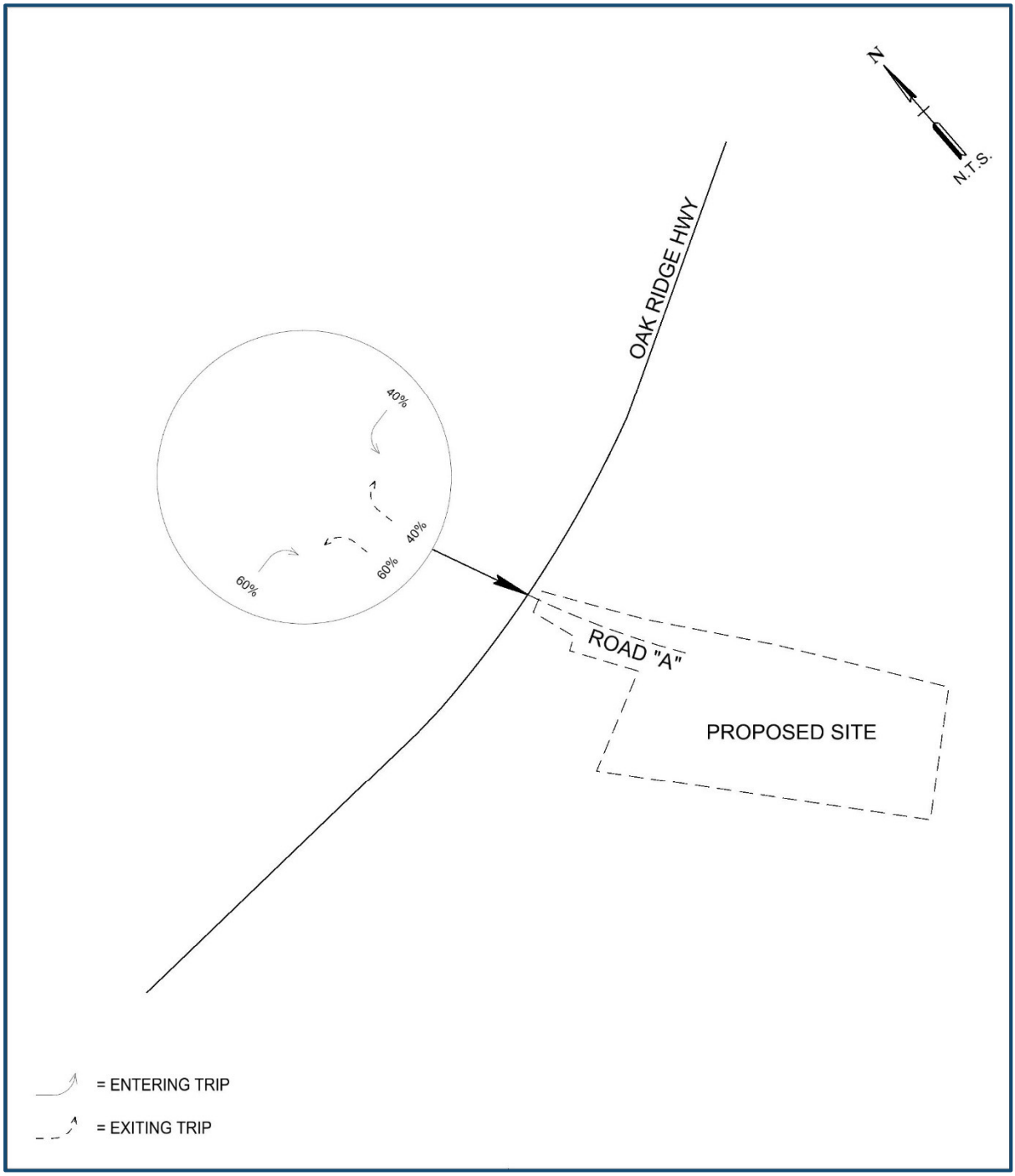


FIGURE 6
TRIP DISTRIBUTION PATTERNS

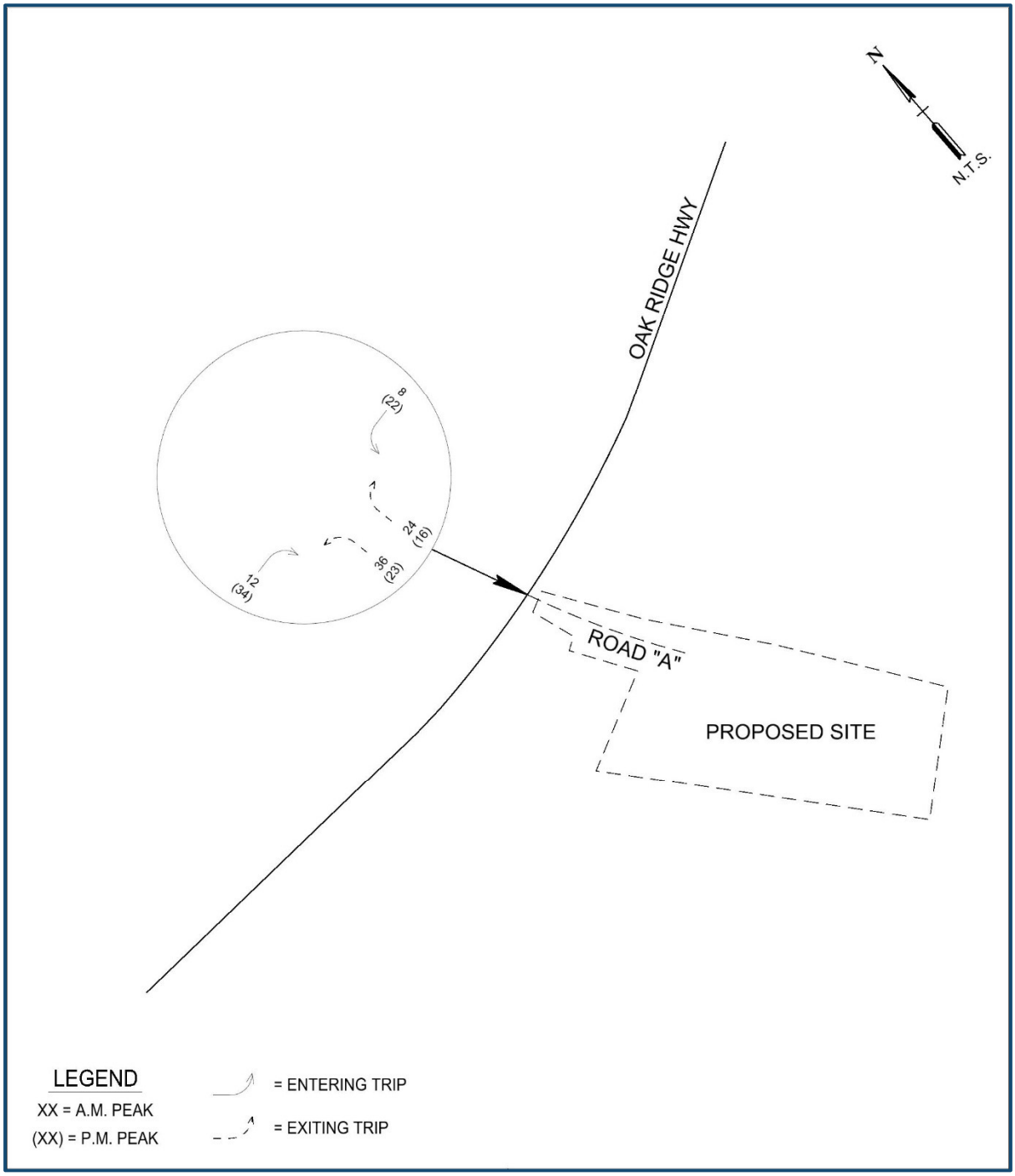


FIGURE 7
TRIP ASSIGNMENT

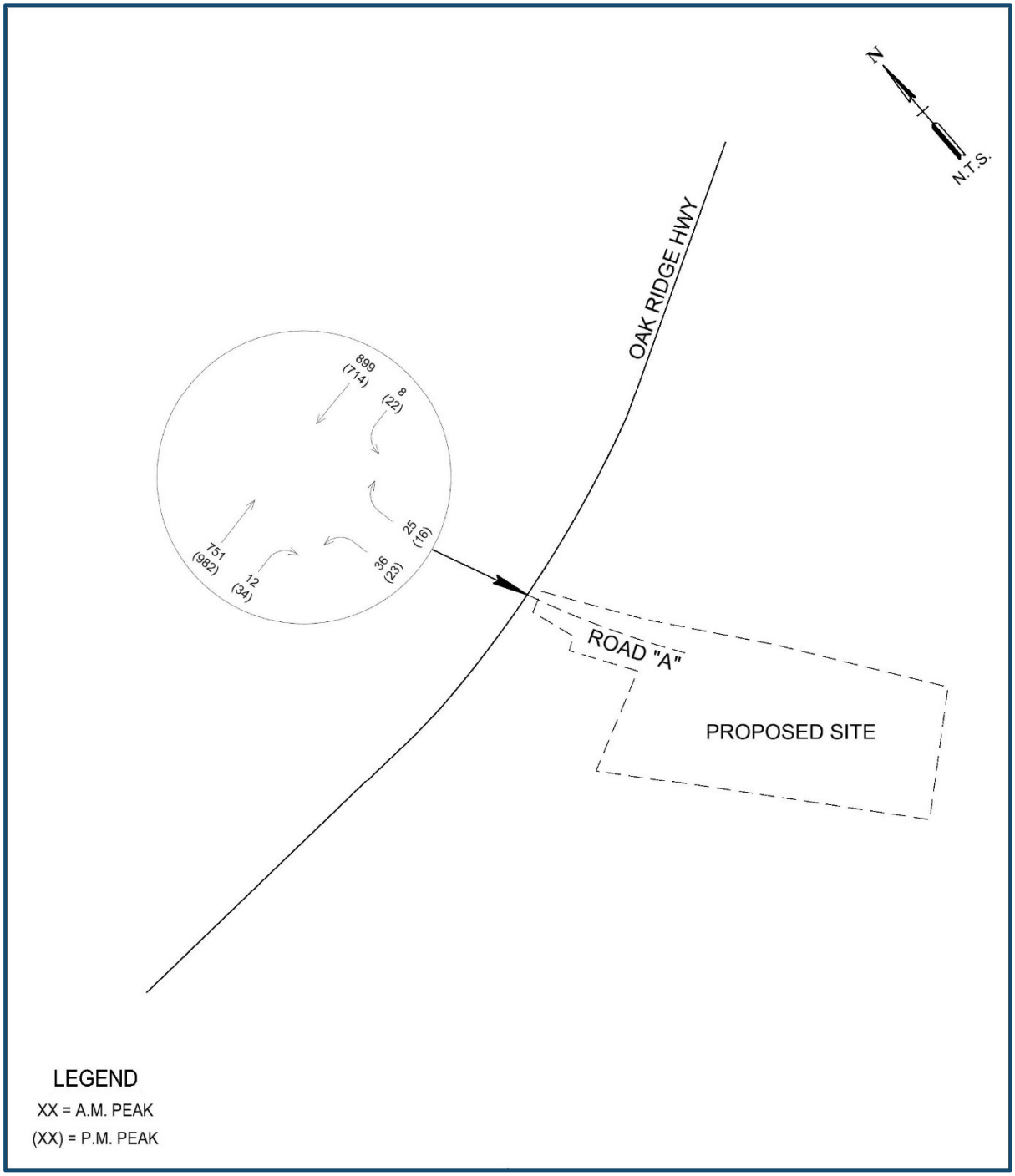


FIGURE 8
2031 COMBINED TRAFFIC VOLUMES

6 EVALUATIONS

INTERSECTION CAPACITY ANALYSES

TABLE 3
CAPACITY ANALYSIS SUMMARY

INTERSECTION	TIME PERIOD	YEAR 2026 EXISTING (LOS/DELAY)	YEAR 2031 BACKGROUND (LOS/DELAY)	YEAR 2031 COMBINED (LOS/DELAY)
Oak Ridge Highway (S.R. 62) at Proposed Roadway (Road "A") (SIDE STREET STOP)[1]	A.M. P.M.	B 14.1 *A 0.0	C 15.1 *A 0.0	D 25.3 D 25.3

[1]SIDE STREET STOP CONTROL – Level-of-Service and Average Vehicular Delay (seconds) for side street approach utilizing HCM methodology.
*Approach delay due to no traffic being present along the side street approach.

The results summarized in TABLE 3 indicate that a LOS "D" can be anticipated at the study intersection under the evaluated conditions. The anticipated delay for the intersection of the proposed roadway (Road "A") at Oak Ridge Highway (S.R. 62) will be approximately 25.3 seconds during both the AM and PM peak hours.

TURN LANE ASSESSMENT

The studied intersection was evaluated for a right-turn lane warrant utilizing the Knox County Access Control and Driveway Design Policy turn lane volume thresholds for the intersection of Oak Ridge Highway (S.R. 62) and the proposed roadway (Road "A"). Since a two-way left-turn lane is already present at the proposed intersection, a left-turn lane warrant was not conducted. Combined conditions were evaluated as part of this assessment with the following results:

- Build-out Traffic
    - Proposed Roadway (Road "A") at Oak Ridge Hwy (S.R. 62)
        - Right Turn Warrant – AM Peak: Not Met / PM Peak: **Met**

Knox County recommends that turn lanes be installed when turn lane warrants are met during either the AM or PM peak hours at existing and proposed intersections. As indicated above, a right-turn lane is warranted at the proposed intersection. The turn lane warrant analysis worksheet is in APPENDIX D.

SIGHT DISTANCE ASSESSMENT

Since Oak Ridge Highway (S.R. 62) is a TDOT maintained facility, AASHTO sight distance requirements were utilized to determine proper intersection sight distance. Based on the AASHTO sight distance requirements for a 45-mph facility, 530 feet of sight distance is required to make a left turn, and 430 feet of sight distance is required to make a right turn from a side street stop-controlled scenario.

Intersection sight distance was assessed via field measurements at the proposed roadway (Road "A") to Oak Ridge Highway (S.R. 62) in February 2026. The measurements were taken looking left and right from a point 15 feet from the edge of the major road and measured with a driver eye height of 3.5 feet and an object height of 3.5 feet above the driving surface of the major road.

The sight distance was found to be greater than the required sight distance for both right and left-turning vehicles. The sight distance observed from the field measurements can be seen in FIGURE 9.

Looking left along Oak Ridge Highway (S.R. 62) from the proposed site access.
A**pprox. sight distance: greater than 430 ft.**

Looking right along Oak Ridge Highway (S.R. 62) from the proposed site access.
Approx. sight distance: greater than 530 ft.

FIGURE 9
SIGHT DISTANCE ASSESSMENT

7 CONCLUSIONS & RECOMMENDATIONS

The primary conclusion of this study is that traffic generated from the proposed residential development will have minor impacts on the study intersections. The study intersection was found to operate at a LOS “D” and will impact current side street delay.

The following list is a summary of the improvements that are recommended to be implemented with the construction of this project:

1. Install STOP sign at the unsignalized intersection of Proposed Roadway Road “A” at Oak Ridge Highway (S.R. 62).

2. Add an eastbound flared right turn approach at unsignalized Proposed Road “A” at Oak Ridge Highway (S.R. 62).

APPENDIX A | TRAFFIC DATA
APPENDIX B | TRIP GENERATION
APPENDIX C | CAPACITY ANALYSES
APPENDIX D | TURN LANE WARRANT EVALUATIONS

APPENDIX A | TRAFFIC DATA

Prepared by National Data & Surveying Services

Tiger Wash Dwy & SR 62/Oak Ridge Hwy

Peak Hour Turning Movement Count

ID: 26-190003-001
City: Knoxville

Day: Wednesday
Date: 1/21/2026

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	7:00 AM - 09:00 AM
NONE	NONE
03:45 PM - 04:45 PM	2:00 PM - 06:00 PM

CONTROL: No Control

	AM	NOON	PM
TEV	1495	0	1536
PHF	0.89		0.92

SOUTHBOUND (Tiger Wash Dwy)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND (SR 62/Oak Ridge Hwy)

AM	NOON	PM	
814	0	647	⇦
0	0	0	↶ 0
0	0	0	↱ 0
680	0	889	→ 1
0	0	0	↷ 0
AM	NOON	PM	

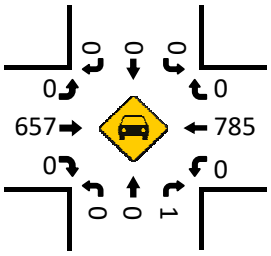
WESTBOUND (SR 62/Oak Ridge Hwy)

PM	NOON	AM	
0	0	0	↶ 0
647	0	814	← 1
0	0	0	↱ 0
0	0	0	↷ 0
889	0	681	⇨
PM	NOON	AM	

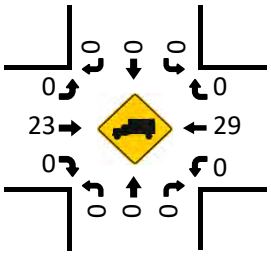
NORTHBOUND (Tiger Wash Dwy)

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	1	AM

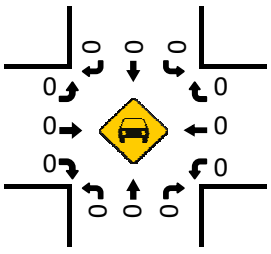
Cars (AM)



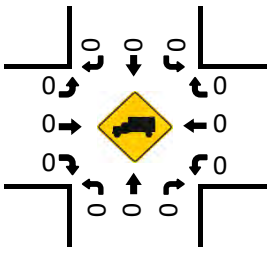
HT (AM)



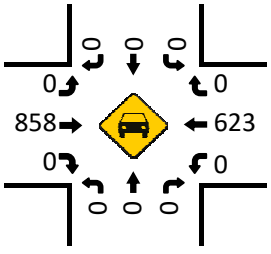
Cars (NOON)



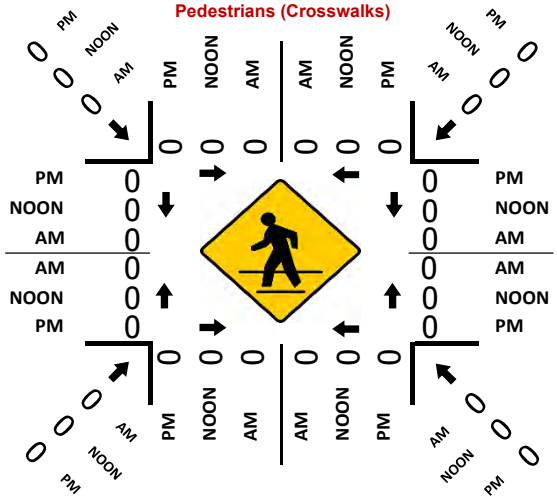
HT (NOON)



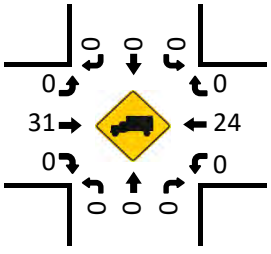
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Tiger Wash Dwy & SR 62/Oak Ridge Hwy
City: Knoxville
Control: No Control

Project ID: 26-190003-001
Date: 1/21/2026

Data - Total

NS/EW Streets:	Tiger Wash Dwy				Tiger Wash Dwy				SR 62/Oak Ridge Hwy				SR 62/Oak Ridge Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	133	0	0	0	124	0	0	257
7:15 AM	0	0	0	0	0	0	0	0	0	128	0	0	0	189	0	0	317
7:30 AM	0	0	1	0	0	0	0	0	0	214	0	0	0	179	0	0	394
7:45 AM	0	0	0	0	0	0	0	0	0	190	0	0	0	231	0	0	421
8:00 AM	0	0	0	0	0	0	0	0	0	148	0	0	0	215	0	0	363
8:15 AM	0	0	0	0	0	0	0	0	0	139	0	0	0	138	0	0	277
8:30 AM	0	0	0	0	0	0	0	0	0	91	0	0	0	130	0	0	221
8:45 AM	0	0	1	0	0	0	0	0	0	105	0	0	0	108	0	0	214
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	2	0	0	0	0	0	0	1148	0	0	0	1314	0	0	2464
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	1	0	0	0	0	0	0	680	0	0	0	814	0	0	1495
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.794	0.000	0.000	0.000	0.881	0.000	0.000	0.888
			0.250							0.794				0.881			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
2:00 PM	1	0	0	0	0	0	0	0	0	129	0	0	0	185	0	0	315
2:15 PM	0	0	0	0	0	0	0	0	0	123	0	0	0	152	0	0	275
2:30 PM	0	0	0	0	0	0	0	0	0	126	0	0	0	157	0	0	283
2:45 PM	0	0	0	0	0	0	0	0	0	167	0	0	0	150	0	0	317
3:00 PM	0	0	1	0	0	0	0	0	0	153	0	0	0	164	0	0	318
3:15 PM	0	0	0	0	0	0	0	0	0	161	0	0	0	163	0	0	324
3:30 PM	0	0	0	0	0	0	0	0	0	175	0	0	0	155	0	0	330
3:45 PM	0	0	0	0	0	0	0	0	0	265	0	0	0	153	0	0	418
4:00 PM	0	0	0	0	0	0	0	0	0	210	0	0	0	148	0	0	358
4:15 PM	0	0	0	0	0	0	0	0	0	214	0	0	0	174	0	0	388
4:30 PM	0	0	0	0	0	0	0	0	0	200	0	0	0	172	0	0	372
4:45 PM	0	0	1	0	0	0	0	0	0	176	1	0	0	181	0	0	359
5:00 PM	1	0	1	0	0	0	0	0	0	231	0	0	0	180	0	0	413
5:15 PM	0	0	0	0	0	0	0	0	0	203	0	0	0	186	0	0	389
5:30 PM	0	0	0	0	0	0	0	0	0	188	0	0	0	183	0	0	371
5:45 PM	0	0	0	0	0	0	0	0	0	171	0	0	1	162	0	0	334
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	3	0	0	0	0	0	0	2892	1	0	1	2665	0	0	5564
APPROACH %'s :	40.00%	0.00%	60.00%	0.00%					0.00%	99.97%	0.03%	0.00%	0.04%	99.96%	0.00%	0.00%	
PEAK HR :	03:45 PM - 04:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	889	0	0	0	647	0	0	1536
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.839	0.000	0.000	0.000	0.930	0.000	0.000	0.919
										0.839				0.930			

APPENDIX B | TRIP GENERATION

Land Use: 215
Single-Family Attached Housing

Description

Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.

Additional Data

The database for this land use includes duplexes (defined as a single structure with two distinct dwelling units, typically joined side-by-side and each with at least one outside entrance) and townhouses/rowhouses (defined as a single structure with three or more distinct dwelling units, joined side-by-side in a row and each with an outside entrance).

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Utah, Virginia, and Wisconsin.

Source Numbers

168, 204, 211, 237, 305, 306, 319, 321, 357, 390, 418, 525, 571, 583, 638, 735, 868, 869, 870, 896, 912, 959, 1009, 1046, 1056, 1058, 1077

Single-Family Attached Housing
(215)

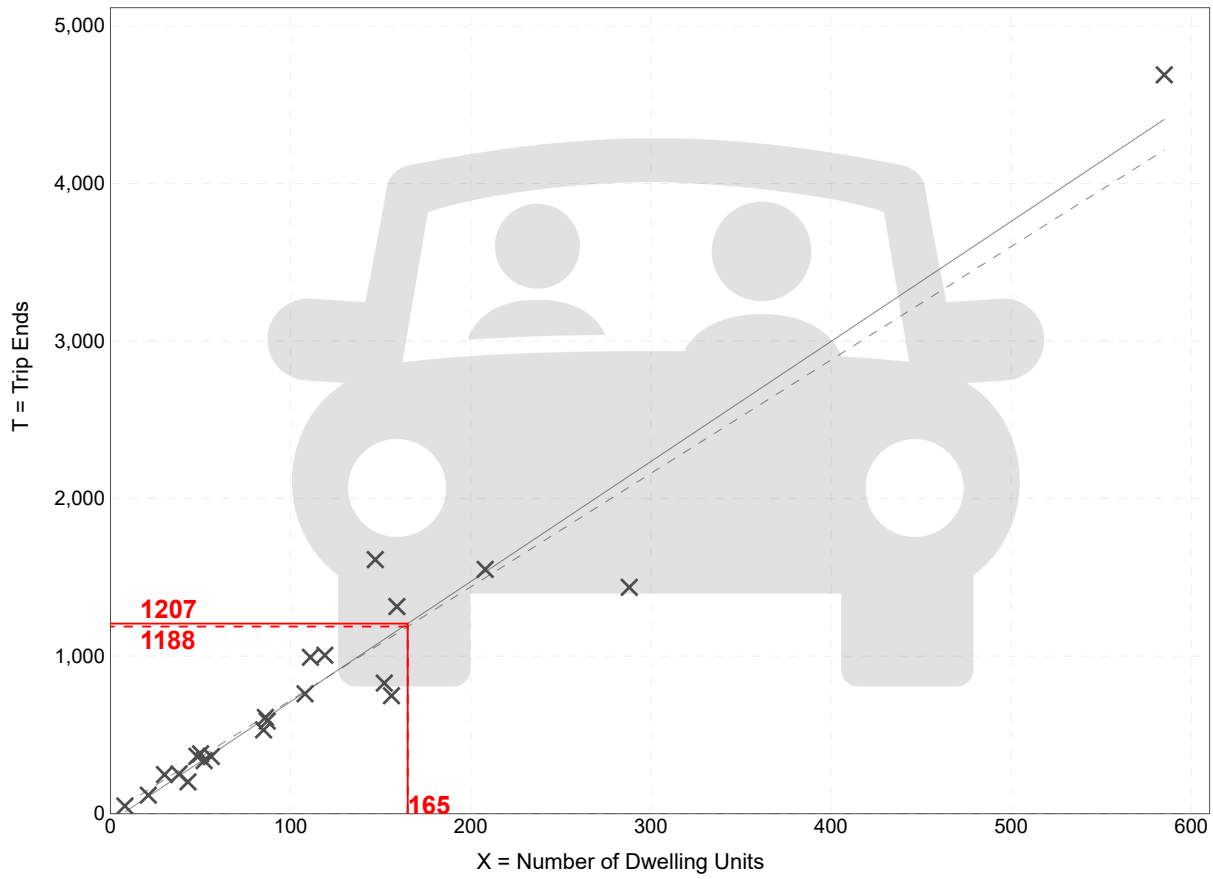
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Fitted Curve Equation: T = 7.62(X) - 50.48

R^2= 0.94

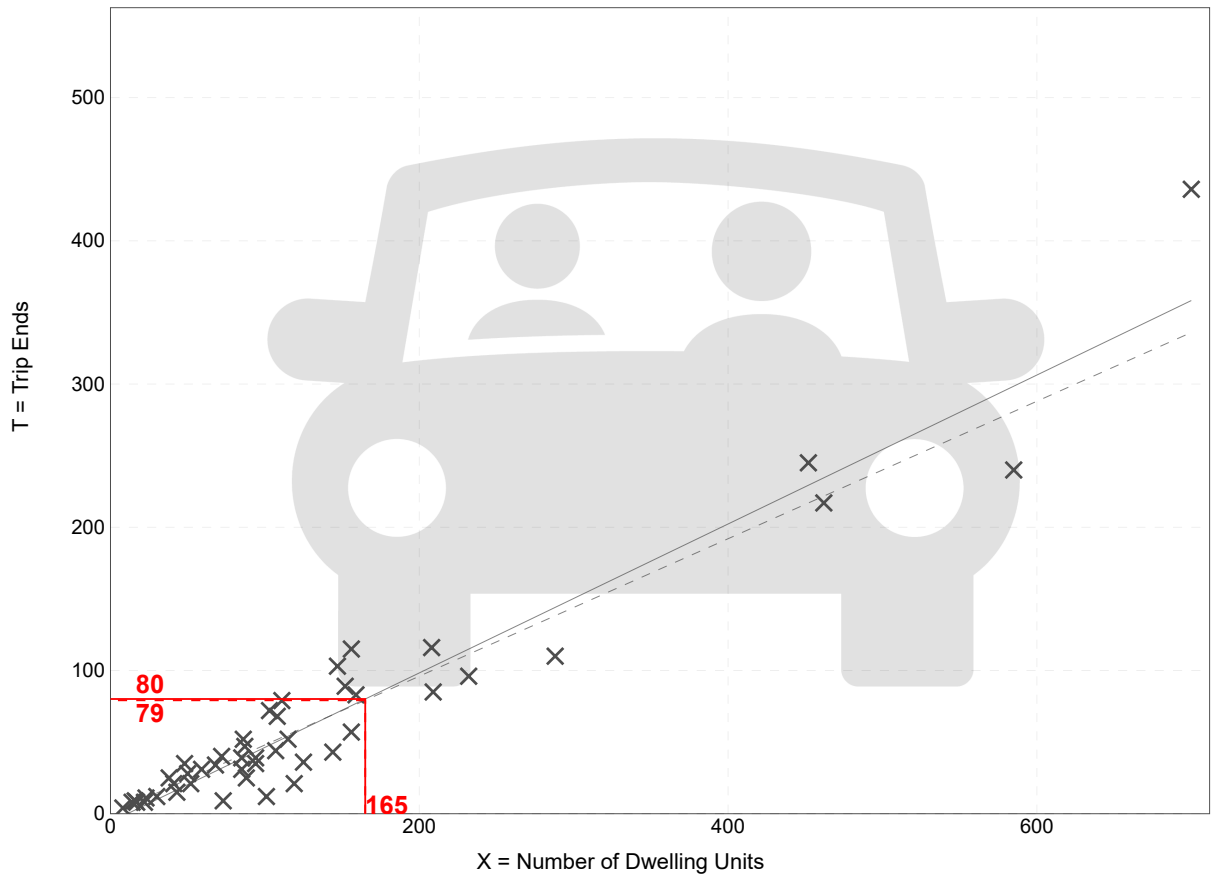
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	46
Avg. Num. of Dwelling Units:	135
Directional Distribution:	25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Fitted Curve Equation: T = 0.52(X) - 5.70

R^2= 0.92

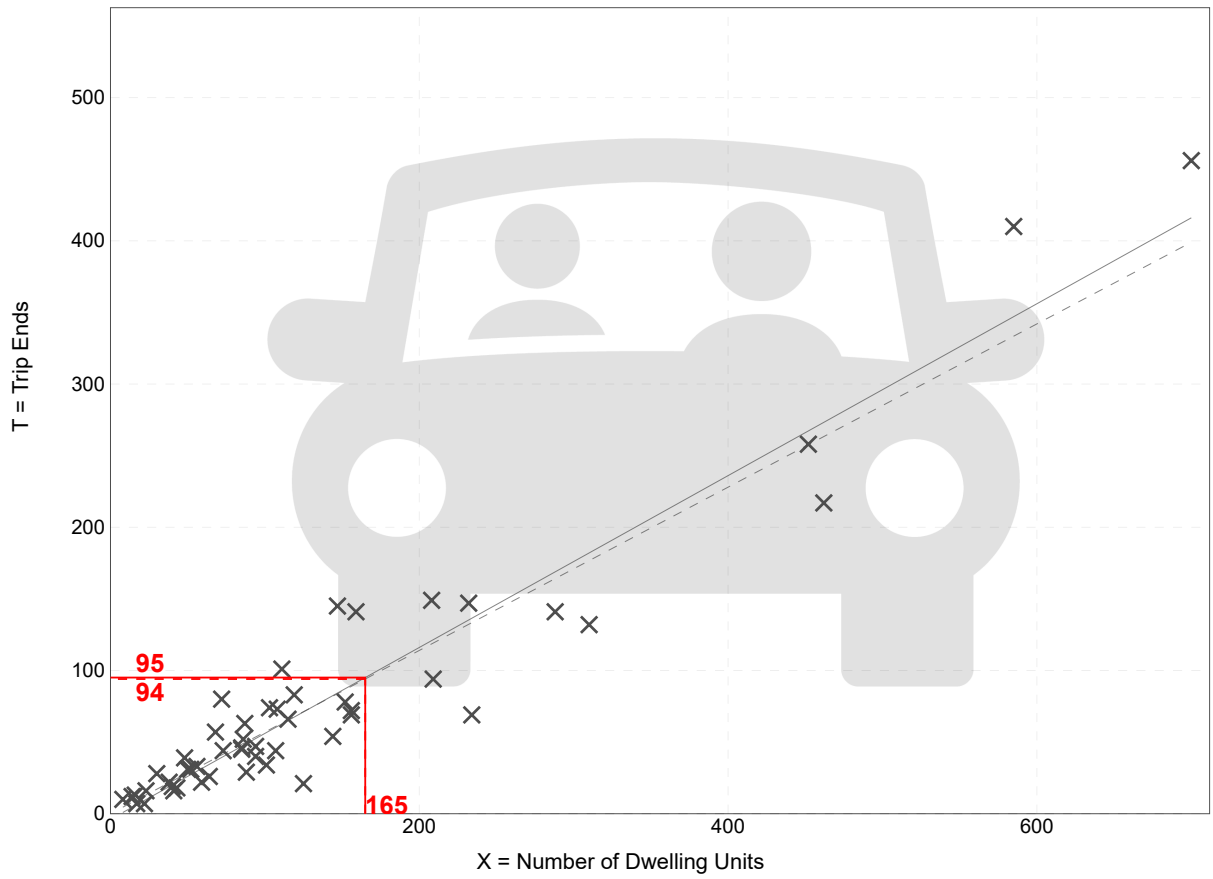
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. Num. of Dwelling Units:	136
Directional Distribution:	59% entering, 41% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) - 3.93

R^2= 0.91

APPENDIX C | CAPACITY ANALYSES

HCS Two-Way Stop-Control Report

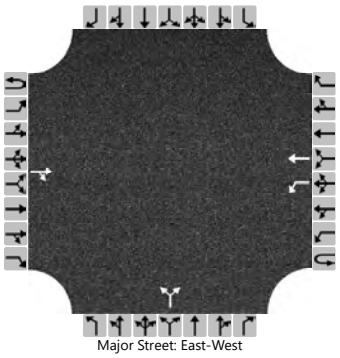
General Information

Analyst	KNB
Agency/Co.	Ardurra, Inc.
Date Performed	1/30/2026
Analysis Year	2026
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Oak Ridge Highway at Tiger Wash Driveway
Jurisdiction	Knox County
East/West Street	Oak Ridge Highway
North/South Street	Tiger Wash Driveway
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			680	0		0	814			0		1				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					1					
Capacity, c (veh/h)						838					398					
v/c Ratio						0.00					0.00					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)						0.0					0.0					
Control Delay (s/veh)						9.3					14.1					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.0				14.1							
Approach LOS					A				B							

HCS Two-Way Stop-Control Report

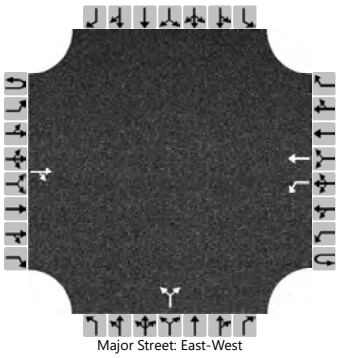
General Information

Analyst	KNB
Agency/Co.	Ardurra, Inc.
Date Performed	1/30/2026
Analysis Year	2026
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	

Site Information

Intersection	Oak Ridge Highway at Driveway
Jurisdiction	Knox County
East/West Street	Oak Ridge Highway
North/South Street	Tiger Wash Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			889	0		0	647			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage			Left Only							1						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						709					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
95% Queue Length, Q_{95} (ft)						0.0										
Control Delay (s/veh)						10.1										
Level of Service (LOS)						B										
Approach Delay (s/veh)						0.0										
Approach LOS						A										

HCS Two-Way Stop-Control Report

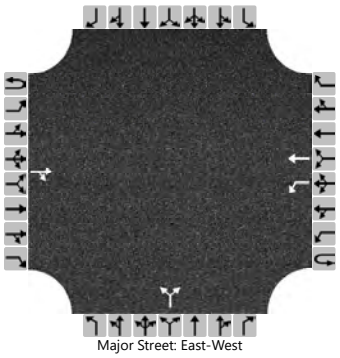
General Information

Analyst	KNB
Agency/Co.	Ardurra, Inc.
Date Performed	1/30/2026
Analysis Year	2031
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	Background

Site Information

Intersection	Oak Ridge Highway at Driveway
Jurisdiction	Knox County
East/West Street	Oak Ridge Highway
North/South Street	Tiger Wash Driveway
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			751	0		0	899			0		1				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage			Left Only							1						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					1					
Capacity, c (veh/h)						782					357					
v/c Ratio						0.00					0.00					
95% Queue Length, Q_{95} (veh)						0.0					0.0					
95% Queue Length, Q_{95} (ft)						0.0					0.0					
Control Delay (s/veh)						9.6					15.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.0				15.1						
Approach LOS						A				C						

HCS Two-Way Stop-Control Report

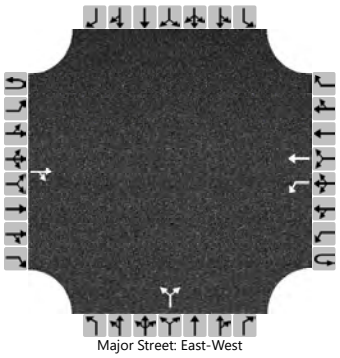
General Information

Analyst	KNB
Agency/Co.	Ardurra, Inc.
Date Performed	1/30/2026
Analysis Year	2031
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	Background

Site Information

Intersection	Oak Ridge Highway at Driveway
Jurisdiction	Knox County
East/West Street	Oak Ridge Highway
North/South Street	Tiger Wash Driveway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			982	0		0	714			0		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						0					0					
Capacity, c (veh/h)						649					0					
v/c Ratio						0.00										
95% Queue Length, Q_{95} (veh)						0.0										
95% Queue Length, Q_{95} (ft)						0.0										
Control Delay (s/veh)						10.5										
Level of Service (LOS)						B										
Approach Delay (s/veh)					0.0											
Approach LOS					A											

HCS Two-Way Stop-Control Report

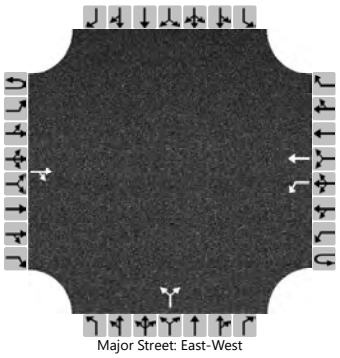
General Information

Analyst	KNB
Agency/Co.	Ardurra, Inc.
Date Performed	2/6/2026
Analysis Year	2031
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	Combined

Site Information

Intersection	Oak Ridge Highway at Driveway
Jurisdiction	Knox County
East/West Street	Oak Ridge Highway
North/South Street	Road A
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			751	12		8	899			36		25				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						9					69					
Capacity, c (veh/h)						772					246					
v/c Ratio						0.01					0.28					
95% Queue Length, Q_{95} (veh)						0.0					1.1					
95% Queue Length, Q_{95} (ft)						0.0					28.2					
Control Delay (s/veh)						9.7					25.3					
Level of Service (LOS)						A					D					
Approach Delay (s/veh)					0.1				25.3							
Approach LOS					A				D							

HCS Two-Way Stop-Control Report

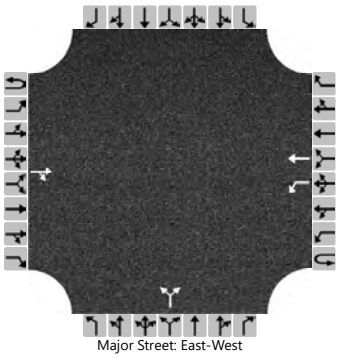
General Information

Analyst	KNB
Agency/Co.	Ardurra, Inc.
Date Performed	2/6/2026
Analysis Year	2031
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	Combined

Site Information

Intersection	Oak Ridge Highway at Driveway
Jurisdiction	Knox County
East/West Street	Oak Ridge Highway
North/South Street	Road A
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			982	34		22	714			23		16				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage			Left Only							1						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.13				6.43		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						24					42					
Capacity, c (veh/h)						628					220					
v/c Ratio						0.04					0.19					
95% Queue Length, Q_{95} (veh)						0.1					0.7					
95% Queue Length, Q_{95} (ft)						2.6					17.9					
Control Delay (s/veh)						11.0					25.3					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)						0.3				25.3						
Approach LOS						A				D						

APPENDIX D | TURN LANE WARRANT EVALUATIONS

TABLE 5B KNOX COUNTY RIGHT-TURN LANE VOLUME THRESHOLDS FOR 2-LANE ROADWAYS WITH A PREVAILING SPEED OF 36 TO 45 MPH	Project No: 01830-0000.000 Project Name: Gray Hendrix Road TIS Notes:

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME *					
	< 100	100 - 199	200 - 249	250 - 299	300 - 349	350 - 399
Fewer Than 25						
25 - 49						
50 - 99						
100 - 149						
150 - 199						
200 - 249						Yes
250 - 299					Yes	Yes
300 - 349				Yes	Yes	Yes
350 - 399			Yes	Yes	Yes	Yes
400 - 449			Yes	Yes	Yes	Yes
450 - 499		Yes	Yes	Yes	Yes	Yes
500 - 549		Yes	Yes	Yes	Yes	Yes
550 - 599	Yes	Yes	Yes	Yes	Yes	Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

RIGHT-TURN VOLUME	THROUGH VOLUME PLUS LEFT-TURN VOLUME *					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 599	= / > 600
Fewer Than 25						
25 - 49					Yes	Yes
50 - 99				Yes	Yes	Yes
100 - 149			Yes	Yes	Yes	Yes
150 - 199		Yes	Yes	Yes	Yes	Yes
200 - 249	Yes	Yes	Yes	Yes	Yes	Yes
250 - 299	Yes	Yes	Yes	Yes	Yes	Yes
300 - 349	Yes	Yes	Yes	Yes	Yes	Yes
350 - 399	Yes	Yes	Yes	Yes	Yes	Yes
400 - 449	Yes	Yes	Yes	Yes	Yes	Yes
450 - 499	Yes	Yes	Yes	Yes	Yes	Yes
500 - 549	Yes	Yes	Yes	Yes	Yes	Yes
550 - 599	Yes	Yes	Yes	Yes	Yes	Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

* Or through volume only if a left-turn lane exists

Intersection	Time Period	Through Volume	Right-Turn Volume	Right-Turn Lane Warranted (Yes / No)
Hwy 62	AM	751	12	No
Hwy 62	PM	982	34	Yes

Source: Knox County Department of Engineering and Public Works "Access Control and Driveway Design Policy"

ARDURRA

Date: March 23, 2026

To: Mike Conger, Knoxville-Knox County Planning

Subject: TIS for Proposed Gray Hendrix Rd Residential Development (4-SC-26-C / 4-E-26-DP)

Dear Knoxville-Knox County Planning Staff,

The following comment response document is submitted to address comments dated March 6, 2026:

1. **Reviewer Comment:** Modify the traffic study to include an evaluation of the Knox County right-turn lane requirements presented in the Knox County Access Control and Driveway Design Policy (see section 1.30.04 Auxiliary Lanes).

   Response: Added the Knox County Access Control and Driveway Design Right Turn Lane warrant to the report and Appendix.

2. **Reviewer Comment:** The above evaluation will result in a right-turn lane into the site being warranted. Add this lane to the improvement recommendations including the recommended storage and taper length.

   Response: Add the following recommendation to the report. "Add an eastbound flared right turn approach at the unsignalized Proposed Road "A" at Oak Ridge Highway (S.R. 62).

Sincerely,

Addie Kirkham

Addie Kirkham, P.E.