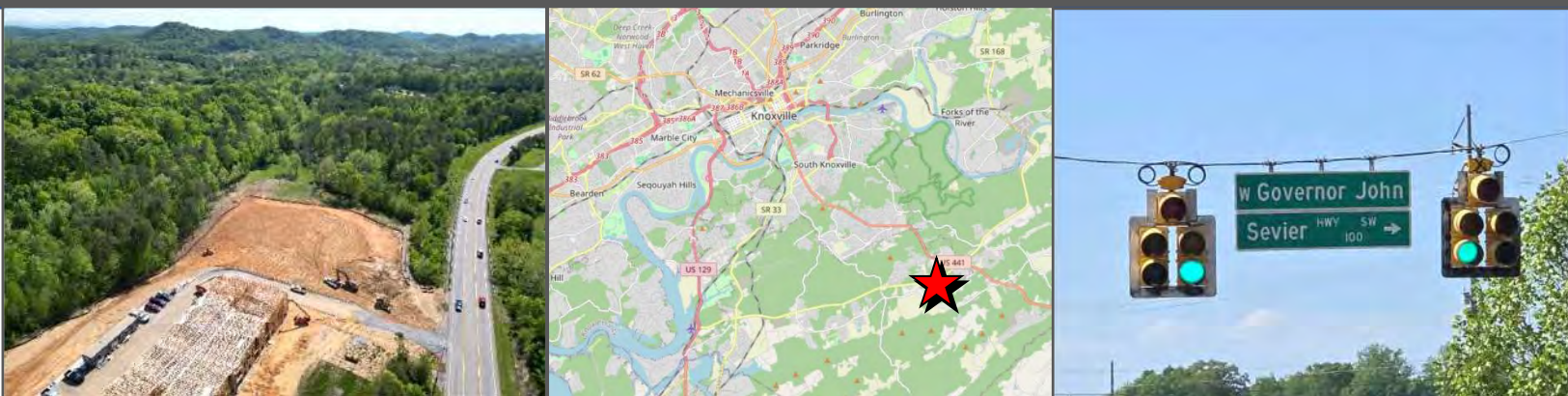




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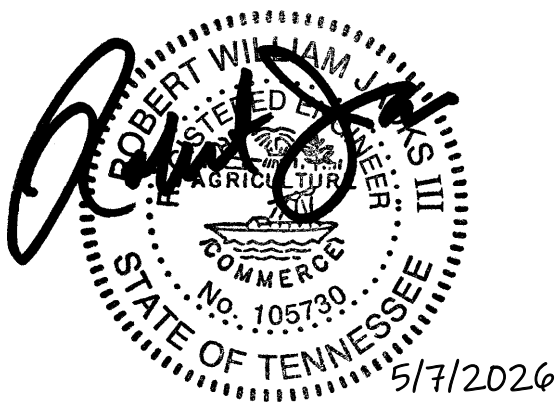
John Sevier Townhomes

Knox County, Tennessee



May 2026

Prepared for:
DGA Residential
6305 Kingston Pike
Knoxville, TN 37919



10-C-26-DP
TIL Version 1
8/17/2026

▪ **EXECUTIVE SUMMARY**

Preface:

DGA Residential proposes a residential development at 400 W Governor John Sevier Highway in South Knox County, TN. The proposed development will include the construction of 80 single-family attached townhomes on 13.03 +/- acres. It is referred to in this report as “John Sevier Townhomes” because a formal name has not yet been chosen. The residences will be provided with a main access entrance to W Governor John Sevier Highway via an adjacent apartment development driveway that is under construction. John Sevier Townhomes is anticipated to be fully built and occupied by 2028.

This Transportation Impact Letter (TIL), as requested by Knox County Engineering and Public Works, includes an analysis of an entrance at W Governor John Sevier Highway that will serve both the adjacent apartment development, Ascend at South Knoxville, and the proposed John Sevier Townhomes. This entrance at W Governor John Sevier Highway is the proposed western entrance for the Ascend at South Knoxville development. This entrance will be the primary access point for the proposed John Sevier Townhomes. Ascend at South Knoxville is currently under construction, and its entrance to W Governor John Sevier Highway is referred to in its plans and in the TIL as the Proposed West Entrance. A secondary entrance to the proposed John Sevier Townhomes will be constructed at the southern end of the development property at W Marine Road, but it is not included in this TIL because it is expected to be minimally used.

Report Results:

The significant findings of this report include the following:

- The proposed John Sevier Townhomes, with 80 single-family attached units, is estimated to generate 526 vehicle trips at full build-out and occupancy on an average weekday. Of these daily trips, 32 are estimated to occur during the AM peak hour and 38 in the PM peak hour in 2028.
- The Proposed West Entrance intersection at W Governor John Sevier Highway that will be shared by the Ascend at South Knoxville and the John Sevier Townhomes development is calculated to operate with acceptable vehicle delays but relatively long exiting vehicle queues in the projected 2028 peak hour conditions.
- The volume thresholds for requiring a separate eastbound right-turn lane on W Governor John Sevier Highway at the Proposed West Entrance serving both

developments are calculated to be nearly met in the 2028 AM peak hour and fully met in the 2028 PM peak hour.

- The northbound exiting vehicle queues at the Proposed West Entrance on W Governor John Sevier Highway are expected to occasionally block vehicles exiting the John Sevier Townhomes development access tie-in point during peak periods, particularly during the AM peak hour, due to the delays caused by the large conflicting volumes traveling on W Governor John Sevier Highway.

Recommendations:

The following recommendations are offered based on the analyses to minimize the impacts of the proposed developments on the adjacent transportation system while attempting to achieve an acceptable traffic flow and improved safety.

W Governor John Sevier Highway at Proposed West Entrance:

- To accommodate both the proposed John Sevier Townhomes and the under-construction Ascend at South Knoxville developments, it is recommended that an eastbound exclusive right-turn lane be constructed on W Governor John Sevier Highway at the Proposed West Entrance. This right-turn lane is recommended to have a minimum storage/deceleration length of 100 feet and a taper length of 150 feet, with pavement markings delineating the lane, as shown in TDOT Standard Drawing T-M-4.
- The John Sevier Townhomes' access tie-in point to the Proposed West Entrance for the Ascend at South Knoxville is shown in the preliminary plan, approximately 160 feet from the edge of W Governor John Sevier Highway. Due to the potential for northbound exiting vehicles to form substantial, lengthy queues, it is recommended that this spacing distance be maintained and not shortened to reduce the risk of exiting vehicles at W Governor John Sevier Highway blocking the vehicles exiting the John Sevier Townhomes development to the Proposed West Entrance.
- Due to the potential of queueing vehicles from W Governor John Sevier Highway at the Proposed West Entrance blocking exiting vehicles from the John Sevier Townhomes development, it is recommended that a "Do Not Block Intersection" Sign (R10-7) be posted for the northbound travel lane in the Ascend at South Knoxville development adjacent to the proposed access tie-in point for the John Sevier Townhomes.

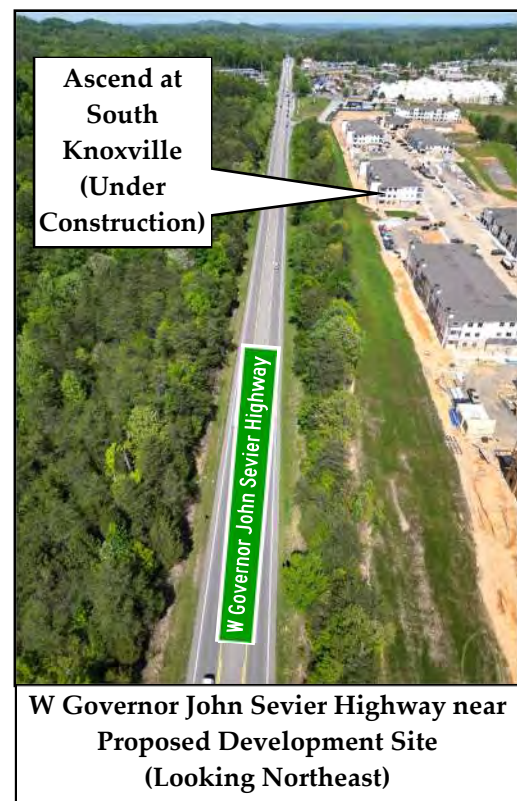
▪ **INTRODUCTION AND ACCESS ROADWAY DESCRIPTIONS**

The location of the proposed new residential development, John Sevier Townhomes, is shown in Figure 1. This proposed development will be located on the south side of W Governor John Sevier Highway, 3,000 feet southwest of Chapman Highway in South Knox County, TN. The development property is located between W Governor John Sevier Highway and S Marine Road, southwest of and adjacent to the Ascend at South Knoxville apartment development, which is currently under construction.

The proposed development property has only 250 feet of road frontage along W Governor John Sevier Highway, and access to the highway within this frontage is hindered by steep slopes, an unnamed watercourse, guardrail, and a box culvert. As such, access for the John Sevier Townhomes residents to the highway will be provided via the adjacent property under construction for the Ascend at South Knoxville apartment development. A private easement has been obtained to allow the main access for the John Sevier Townhomes to connect near the Proposed West Entrance for the Ascend at South Knoxville development. This access tie-in point for the John Sevier Townhomes will be approximately 160 feet south of the edge of W Governor John Sevier Highway.

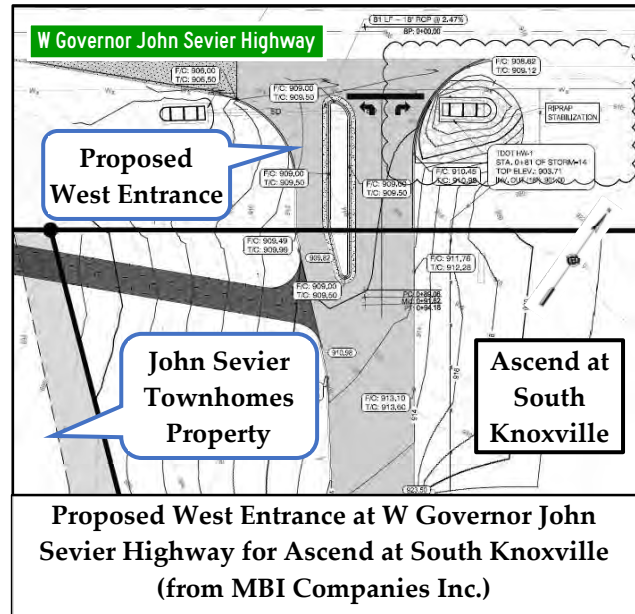
W Governor John Sevier Highway at the development site runs generally southwest-northeast and is depicted as west-east in this report. W Governor John Sevier Highway at the project site currently consists of a 3-lane pavement section with a continuous center two-way left-turn lane (TWLTL). The pavement surface is approximately 46 feet wide. The lanes are 12 feet wide with a 5-foot paved surface outside the white edge lines. Grass side slopes are located immediately outside of the 5-foot paved shoulders. At the project site, utility streetlights are not provided along W Governor John Sevier Highway, and the posted speed limit is 50 mph. Skip-rumble strips delineate the white edge lines of the highway.

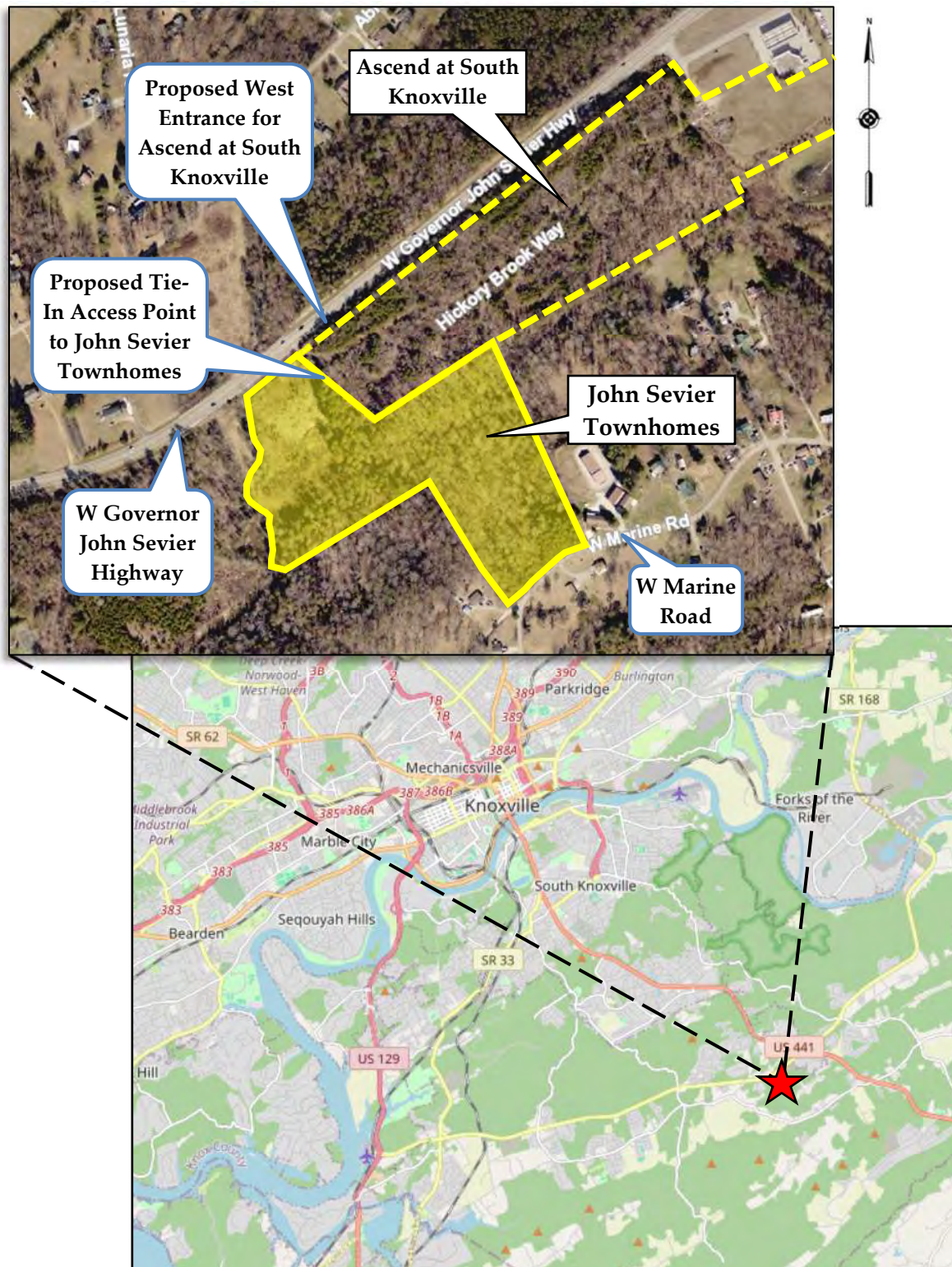
The proposed development property is in a quasi-rural area that is gradually being transformed into a more



suburbanized area due to increased development along Chapman Highway to the east and increased residential development in the surrounding area. The adjacent apartment complex, Ascend at South Knoxville, is under construction and will include 286 units, with entrances at both its east and west ends. The Proposed West Entrance for the Ascend at South Knoxville will be shared with the John Sevier Townhomes development, which is currently under design.

The Proposed West Entrance for the Ascend at South Knoxville was designed with two exit lanes, allowing separate left- and right-turn movements onto W Governor John Sevier Highway. A center raised median is also proposed to separate entering and exiting vehicles. Right-entering turns from W Governor John Sevier Highway are shown in the design plan and approved by TDOT to operate with a flared right-turn entrance. The Proposed West Entrance is currently roughly graded with gravel and is being used as a construction entrance for the Ascend at South Knoxville.





▪ **PROJECT DESCRIPTION:**

The John Sevier Townhomes development will include a main entrance to W Governor John Sevier Highway via a private easement to access the Ascend at South Knoxville's Proposed West Entrance. A secondary entrance to the John Sevier Townhomes will be provided on the south side at W Marine Road. However, this secondary entrance is expected to be minimally used.

John Sevier Townhomes is projected to be fully built and occupied by residents by 2028. The residential development will include 80 single-family townhomes on a 13.03-acre, jig-saw-shaped parcel. The existing development parcel is mostly wooded and is occupied by unnamed branches of Stock Creek.

Access to the individual townhomes will be provided by an internal main S-shaped road, 26 feet wide and nearly 1,500 feet long. This main internal road will cross an unnamed east-west branch, and the crossing will include a span bridge with wing walls. Two crossroads south of the span bridge will be provided, intersecting the main roadway for access to additional townhomes. The internal roads will be private. Due to the steep terrain on the southern portion of the property, several retaining walls will also be constructed. The development may have sidewalks; aside from a clubhouse and playground for residents, it will not provide any other amenities. The clubhouse will be constructed with a parking lot containing 12 parking spaces.

The townhome composition will consist of 58 4-bedroom units and 22 3-bedroom units. The townhomes will have under-unit garages, and a total of 172 parking spaces will be provided.

The proposed preliminary site layout from Catalyst Design Group is shown in Figure 2, illustrating the internal roads, townhome lots, and their proposed access to W Governor John Sevier Highway via the private easement to the Ascend of South Knoxville's Proposed West Entrance. Figure 3 shows the location of the development property at W Governor John Sevier Highway, the traffic count location conducted for the study, the adjacent Ascend at South Knoxville, and the current traffic signage along W Governor John Sevier Highway near the development site.

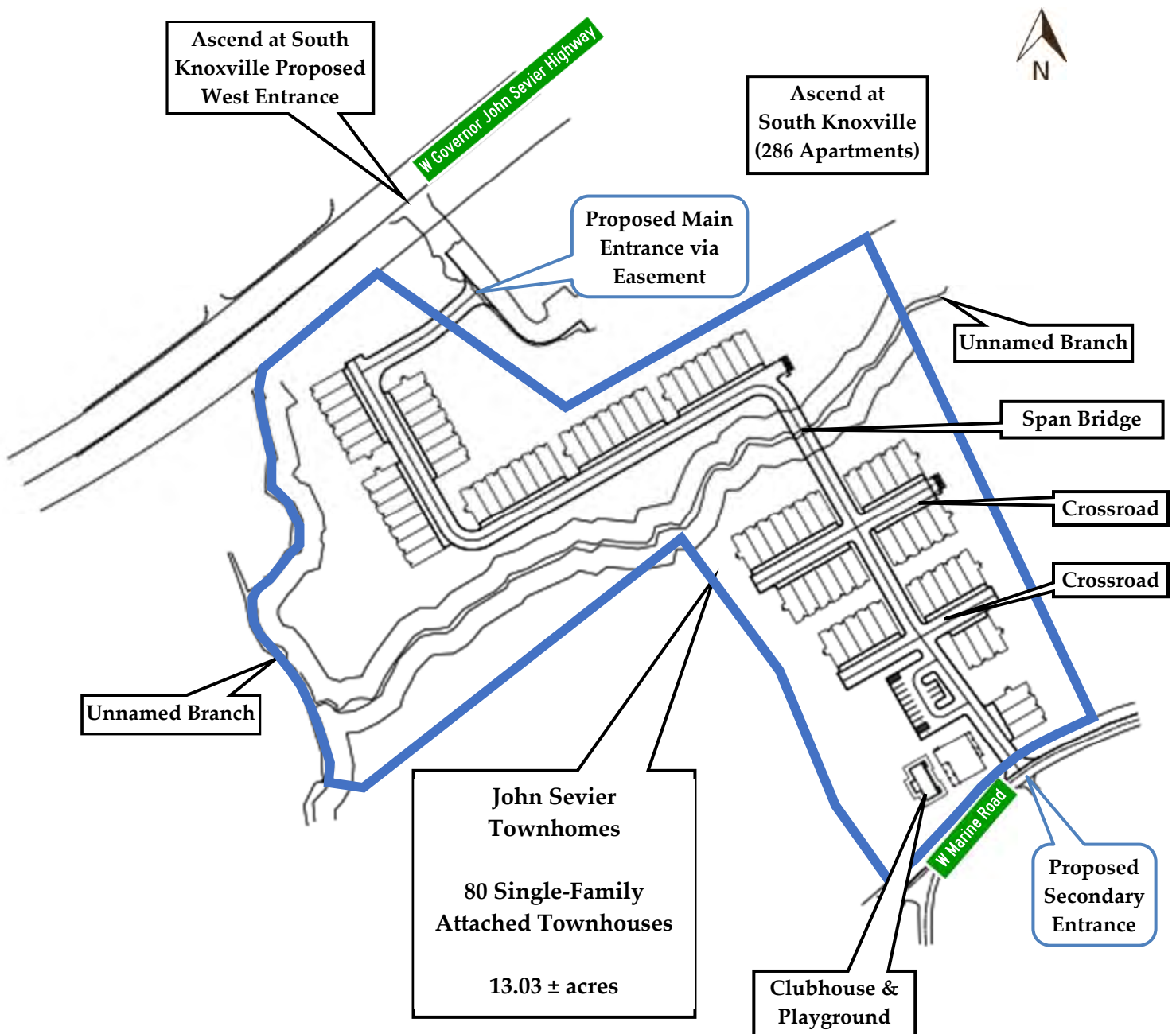
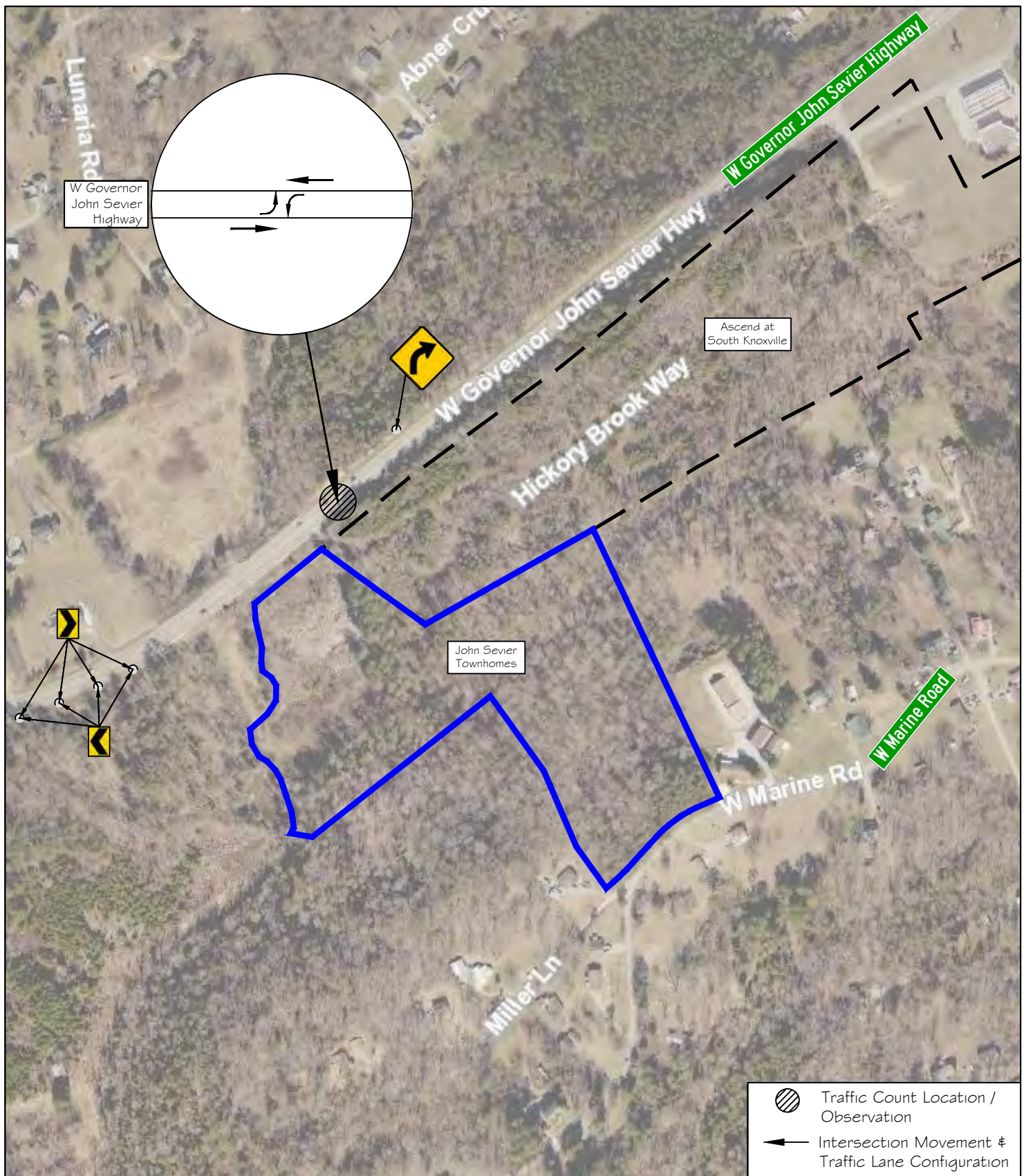


Figure 2
Proposed Plan Layout
John Sevier Townhomes

Not to Scale –
Annotated by Ajax
Engineering for
Display Purposes



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FIGURE 3

John Sevier Townhomes

Traffic Count Location, Traffic Signage & Existing Lane Configurations

▪ **EXISTING TRAFFIC CONDITIONS**

For this report, a 6-hour traffic count was conducted on W Governor John Sevier Highway at the Proposed West Entrance location for the Ascend at South Knoxville. This entrance is currently being used for construction and is roughly graded with gravel. The traffic count was conducted on Wednesday, April 22nd, 2026. Local public schools were in session when the traffic count was conducted. Based on the collected traffic volumes, the AM and PM peak hours were observed to be 7:30 – 8:30 am and 4:30 – 5:30 pm. The manual tabulated peak AM and PM traffic counts for the roadway are shown in Figure 4, and the Appendix contains the full traffic count results.

Overall, the thru movements on W Governor John Sevier Highway showed predominant westbound flows in the AM peak hour and eastbound flows in the PM peak hour. Several construction vehicles were observed entering and exiting the existing construction entrance, but were not tabulated.

The existing traffic composition included mostly passenger vehicles, but also included school buses, several semi-tractor-trailer trucks, and many dump trucks and construction-related vehicles. Furthermore, during the afternoon, slowdowns and backups occurred on eastbound W Governor John Sevier Highway at the Proposed West Entrance location starting at 3:45 pm. These occurrences were not sustained; however, they were observed at 3:50 – 4:00 pm, 4:11 pm, 4:27-4:31 pm, 4:35 pm, and 4:40 pm. These occurred due to heavy inflows towards and at the signalized intersection of W Governor John Sevier Highway at Mountain Grove Drive/W Norton Road, approximately 2,100 feet to the northeast.



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FIGURE 4

John Sevier Townhomes

2026 Peak Hour Traffic Volumes -
Existing Traffic Conditions

▪ **PROJECTED TRAFFIC CONDITIONS WITHOUT THE PROJECT**

Horizon year traffic conditions represent the projected traffic volumes in the study area, assuming the proposed project is not developed (no-build option). This proposed residential development's build-out and full occupancy are assumed to occur by 2028. The adjacent development, Ascend at South Knoxville, is expected to be fully built out before the John Sevier Townhomes.

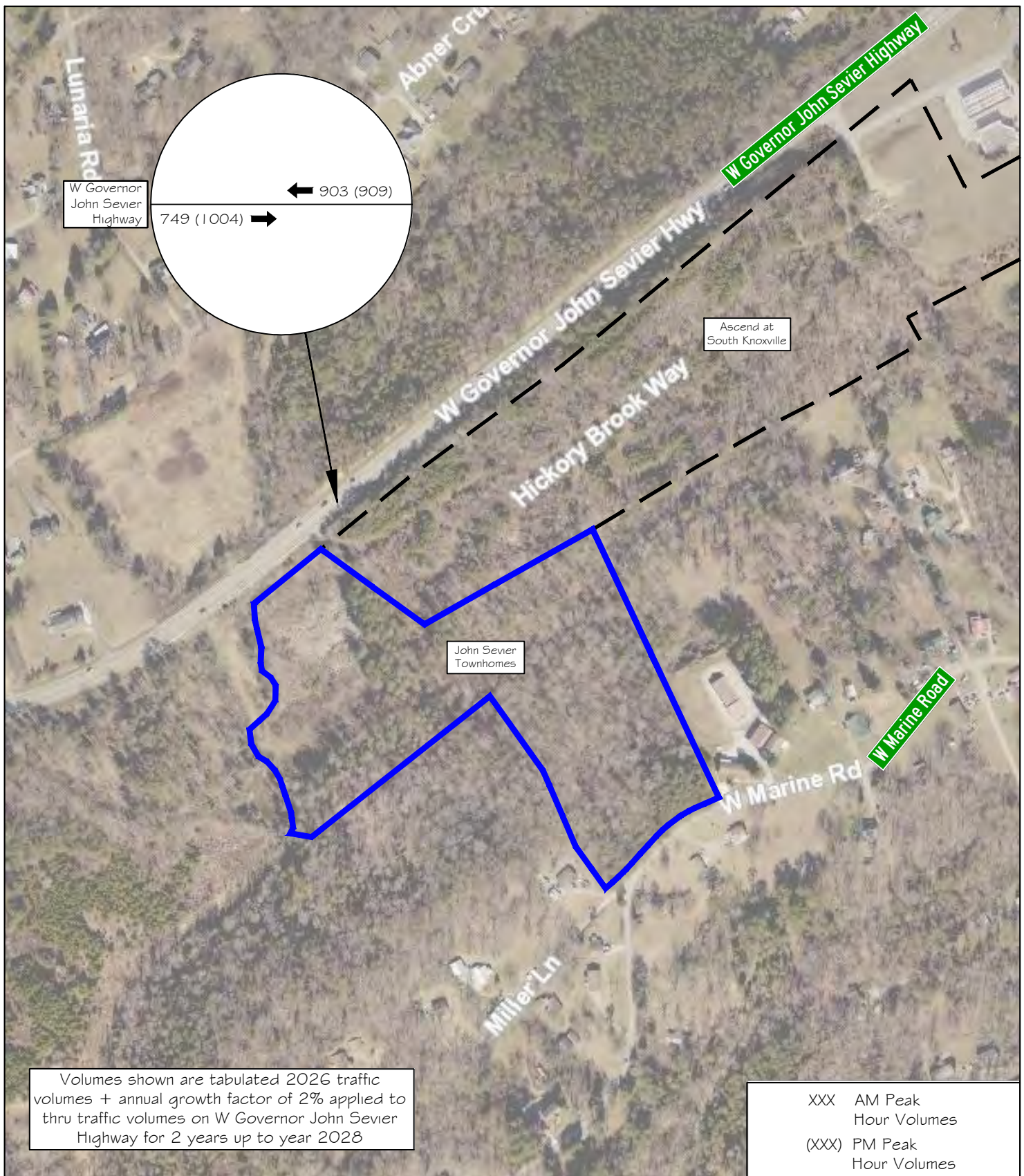
There is only one annual vehicular traffic count location in the near vicinity, and the Tennessee Department of Transportation (TDOT) conducts it. The count location data is the following and can be viewed with further details in the Appendix:

- Existing vehicular roadway traffic:

TDOT reported the following Average Annual Daily Traffic (AADT):

- ▀ W Governor John Sevier Highway, east of Martin Mill Pike and west of the development site, recorded 17,206 vehicles per day in 2025. Between 2015 and 2025, this count station has reported an average annual growth rate of 1.4%.

Thus, for this report, an annual growth rate of 2% was assumed to ensure a conservative result. This growth factor was applied to the existing thru volumes tabulated on W Governor John Sevier Highway to estimate future volumes for the horizon year of 2028, excluding the proposed development traffic, and to account for potential traffic growth in the study area. The future trips generated by the residents in Ascend at South Knoxville are included and accounted for later in the analysis. Figure 5 shows the projected 2028 horizon year traffic volumes during the AM and PM peak hours on W Governor John Sevier Highway at the Proposed West Entrance for Ascend at South Knoxville, which will provide the main access for the proposed John Sevier Townhomes.



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FIGURE 5

John Sevier Townhomes

2028 Peak Hour Traffic Volumes -
Projected Traffic Conditions
Without the Project

▪ **TRIP GENERATION**

A generated trip is a single, one-direction vehicle movement that enters or exits the study site. The estimated traffic generated by the proposed 80 units in the John Sevier Townhomes development was calculated using rates and equations from the Trip Generation Manual, 12th Edition, an Institute of Transportation Engineers (ITE) publication.

The data and calculations for the proposed land use are shown in the Appendix. A summary of this information is presented in Table 1a:

TABLE 1a
TRIP GENERATION FOR JOHN SEVIER TOWNHOMES
80 Attached Townhomes

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	WEEKDAY GENERATED TRAFFIC	WEEKDAY GENERATED TRAFFIC AM PEAK HOUR			WEEKDAY GENERATED TRAFFIC PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
#215	Single-Family Attached Housing	80	526	25%	75%		57%	43%	
				8	24	32	22	16	38
Total New Volume Site Trips			526	8	24	32	22	16	38

ITE Trip Generation Manual, 12th Edition
Trips calculated by using Fitted Curve Equations

For the proposed John Sevier Townhomes at full buildout, it is estimated that 8 vehicles will enter and 24 will exit, for a total of 32 trips generated during the AM peak hour in 2028. Similarly, it is estimated that 22 vehicles will enter and 16 will exit, for a total of 38 trips generated during the PM peak hour in 2028. The calculated trips for an average weekday are estimated at 526 vehicles for the proposed development. No vehicle trip reductions were included in the calculations or analysis.

To account for the total potential of new vehicle trips at the Proposed West Entrance in 2028, the trips generated by the Ascend at South Knoxville would need to be included.

Ajax Engineering, LLC, completed a Transportation Impact Study (TIS) for the Ascend at South Knoxville in October 2022. At the time of the previous study, Knoxville/Knox County Planning required calculating trip generation for apartments and townhouses using local trip-rate equations. These equations were developed from a local study to estimate trip generation for

apartments and townhouses in the surrounding area and were published in December 1999. At the time of the 2022 TIS, these local rates were the trip generation rates used for apartments and townhouses in Knox County and for the Ascend at South Knoxville TIS. However, in early 2026, after a long-awaited follow-up and updated study, Planning determined that the previously used local trip rates appeared to overestimate the actual number of trips generated by these residential uses. As such, Planning recommended that future studies utilize the corresponding trip rates published by ITE in the Trip Generation Manual. To account for this change and avoid overestimating the trips calculated in the previous TIS for the Ascend at South Knoxville, revised trip generation calculations were completed for this TIL. Also, Ascend at South Knoxville originally proposed 238 units in the first phase and 68 in the second, for a total of 306 units. Since then, the total amount has been revised to 286 units for both phases, and a summary of the calculated generated trips is presented in Table 1b, utilizing ITE's Trip Generation Manual:

TABLE 1b
TRIP GENERATION FOR ASCEND AT SOUTH KNOXVILLE
286 Apartments (Phase 1 & 2)

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	GENERATED DAILY TRAFFIC	GENERATED TRAFFIC AM PEAK HOUR			GENERATED TRAFFIC PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
#220	Multifamily Housing (Low-Rise)	286	1,731	24%	76%		62%	38%	
				27	86	113	96	49	145
Total New Volume Site Trips			1,731	27	86	113	96	49	145

ITE Trip Generation Manual, 12th Edition

Trips calculated by using Fitted Curve Equations

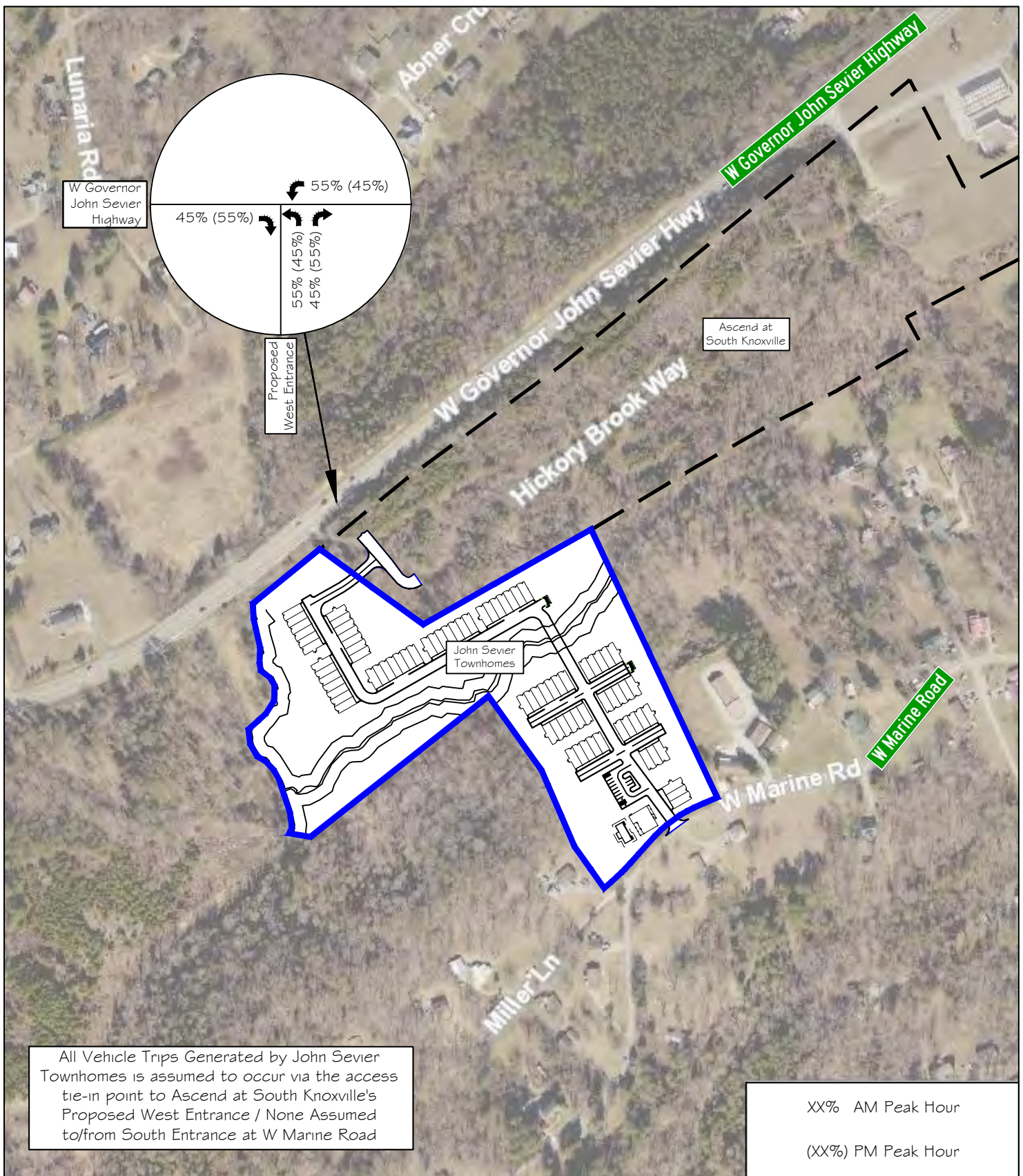
The calculated trips shown in Table 1b represent a fairly noticeable reduction from the original TIS produced for the Ascend at South Knoxville, due to a slight decrease in the number of proposed units and the change from the usage of local trip equations to published ITE trip generation equations with overall lower rates for apartment developments.

▪ **TRIP DISTRIBUTION AND ASSIGNMENT:**

The assumed trip distribution for the John Sevier Townhomes was mostly based on the distribution determined and assumed for the Ascend at South Knoxville TIS produced in 2022. These projected distributed trips for the adjacent development were estimated in the previous TIS using collected traffic counts, US Census Bureau data, zoned public school locations, and the apartment complex's internal layout. The assumed trip distribution figure in the TIS for the Ascend at South Knoxville is shown and included in the Appendix. Overall, the trip distribution for the Ascend at South Knoxville was split between this development's Proposed West and East Entrances, and it assumed 10% would be "lost" due to internal travel to and from the adjacent South Grove shopping center without using the adjacent public roads.

Figure 6a shows the projected distribution of traffic entering and exiting the proposed John Sevier Townhomes development at the Ascend at South Knoxville's Proposed West Entrance. One hundred percent of trips for the John Sevier Townhomes development is assumed to utilize the Proposed West Entrance at W Governor John Sevier Highway to provide a conservative analysis, as none of its trips are assumed to occur to the south via its secondary entrance to W Marine Road or through the adjacent Ascend at South Knoxville internal main east-west drive. Figure 6b shows the projected trip distribution for the Ascend at South Knoxville and reproduces the results from its TIS.

Figure 7a shows the traffic assignment for the computed trips generated by the John Sevier Townhomes, based on the assumed distribution of trips shown in Figure 6a. Figure 7b shows the traffic assignment for the computed trips generated by the Ascend at South Knoxville, based on the assumed distribution of trips shown in Figure 6b, and takes into account the slight decrease in apartment units and the change from the usage of local trip rates to published ITE trip generation rates. Finally, Figure 7c shows the addition of the generated trips from both developments at the Proposed West Entrance and W Governor John Sevier Highway intersection.



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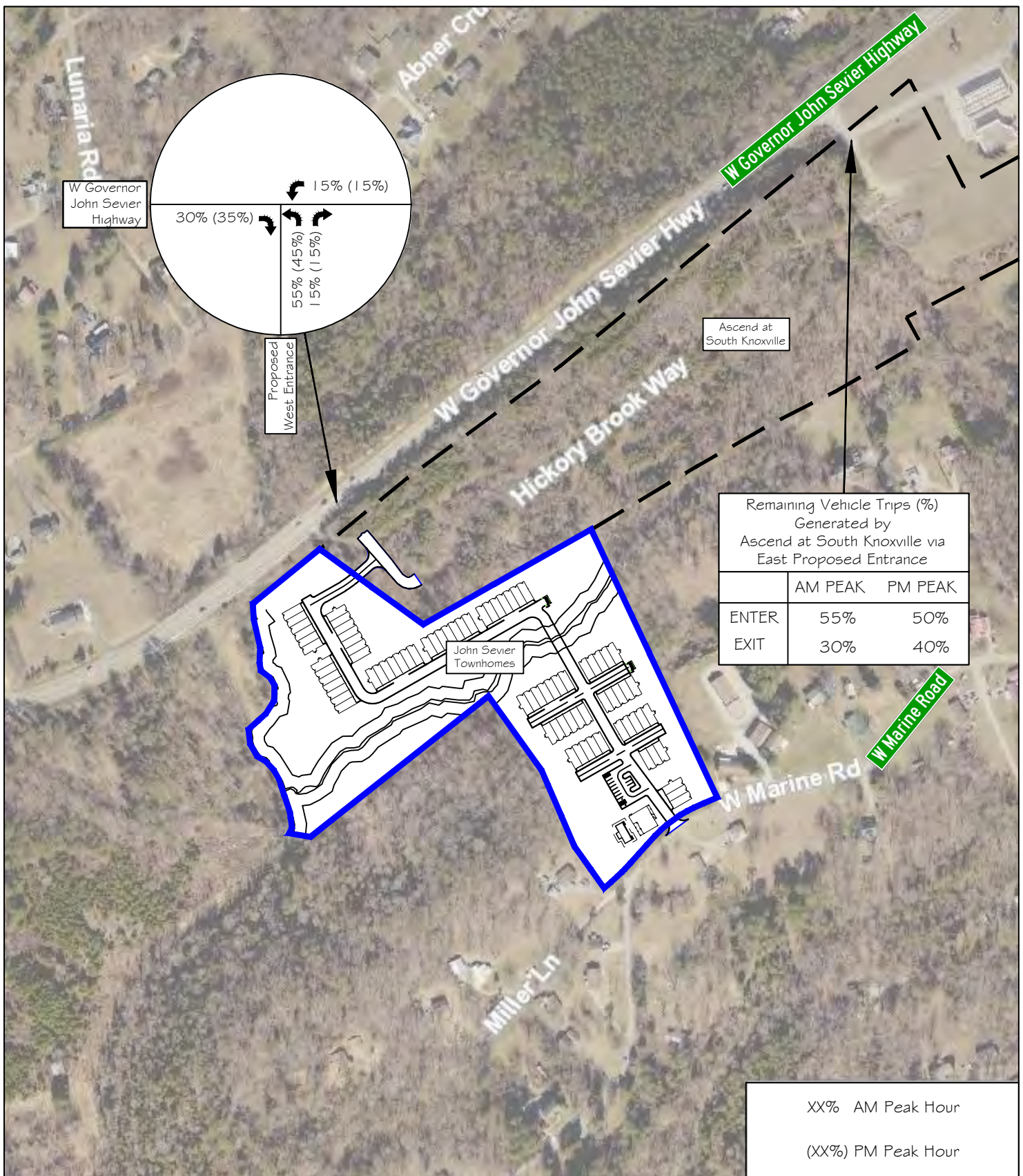
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FIGURE 6a

John Sevier Townhomes

Directional Distribution of Generated Traffic during AM and PM Peak Hour for John Sevier Townhomes



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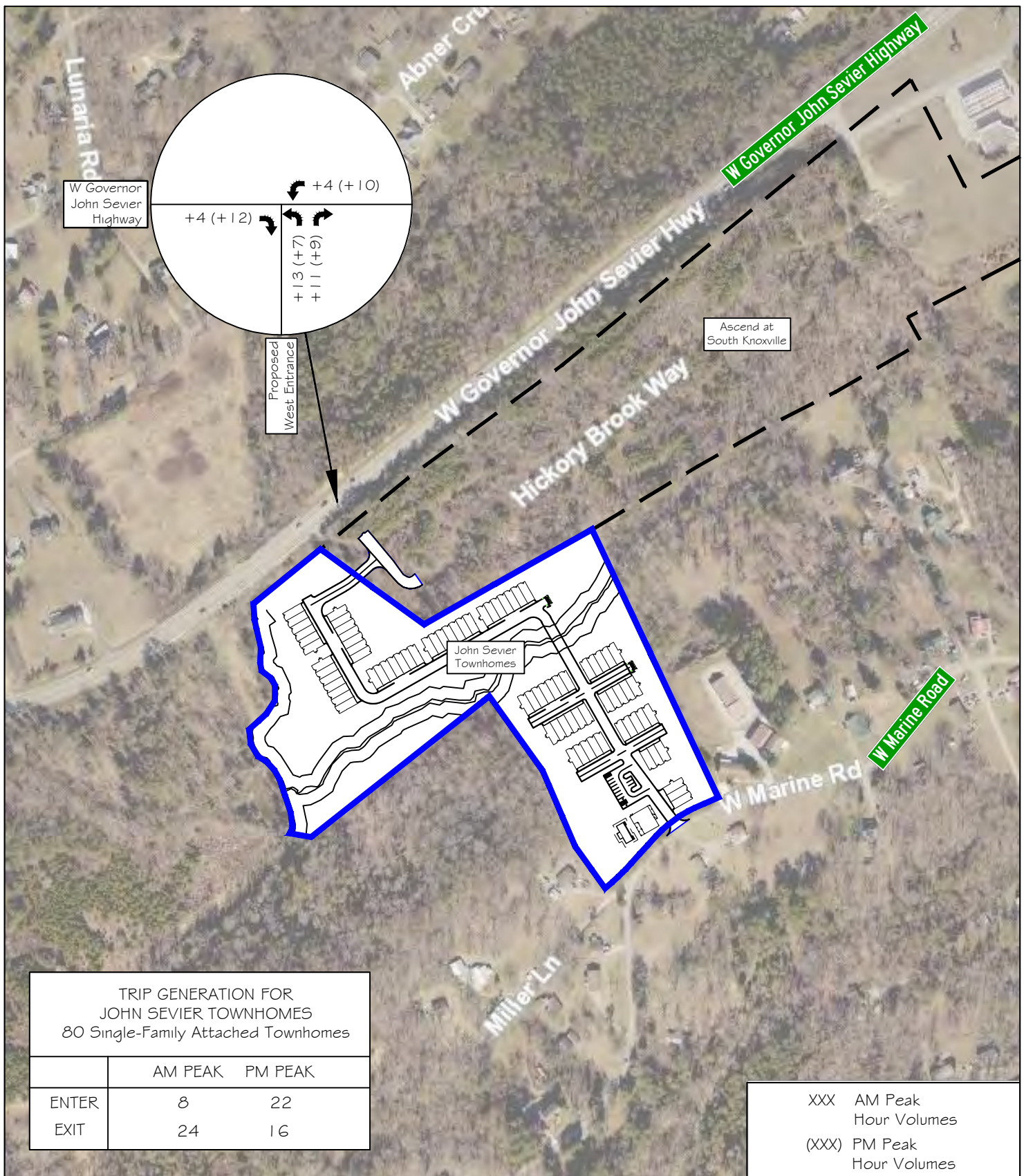
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FIGURE 6b

John Sevier Townhomes

Directional Distribution of Generated Traffic during AM and PM Peak Hour for Ascend at South Knoxville



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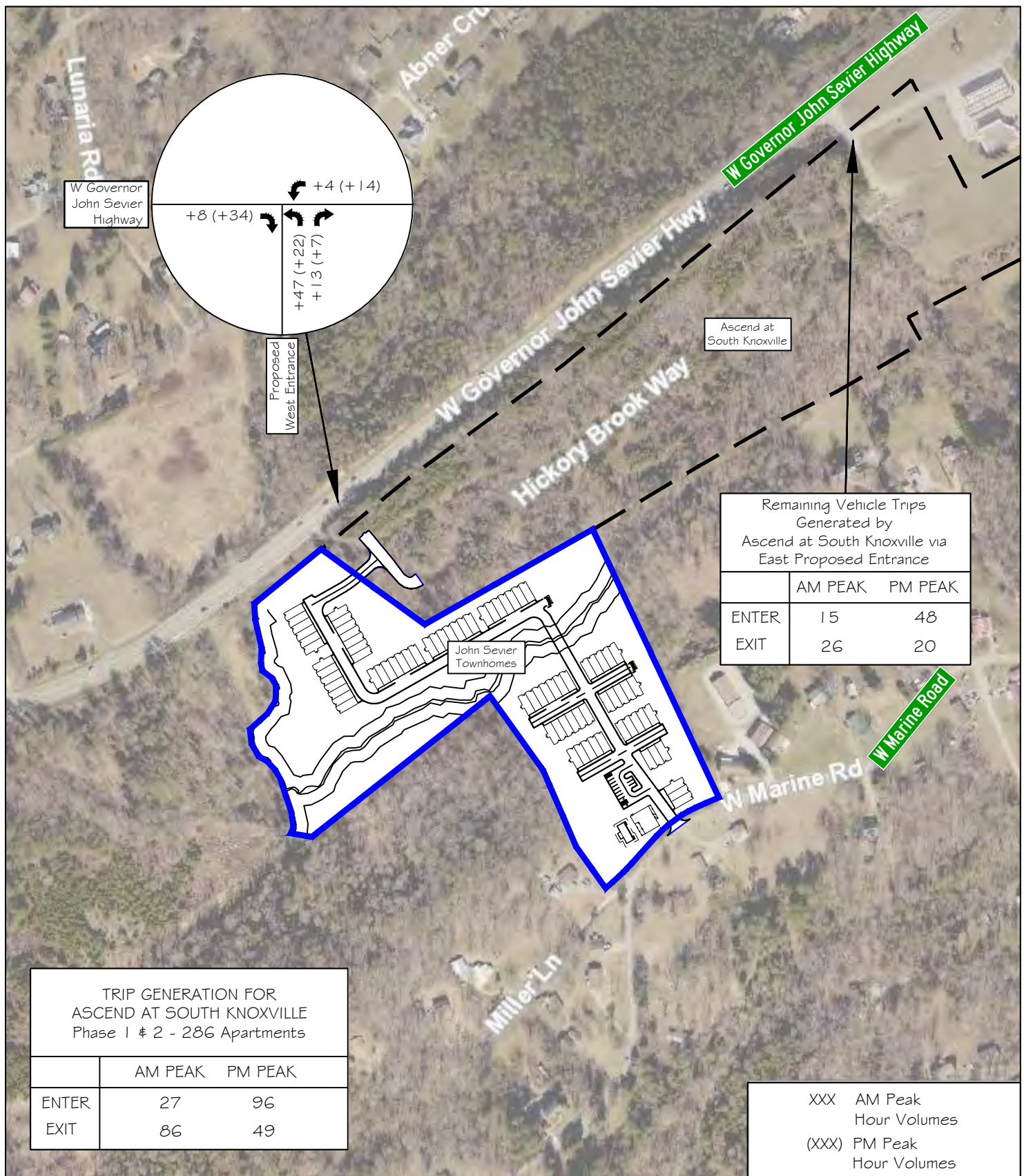
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FIGURE 7a

John Sevier Townhomes

Traffic Assignment of Generated Traffic
during AM and PM Peak Hour for
John Sevier Townhomes



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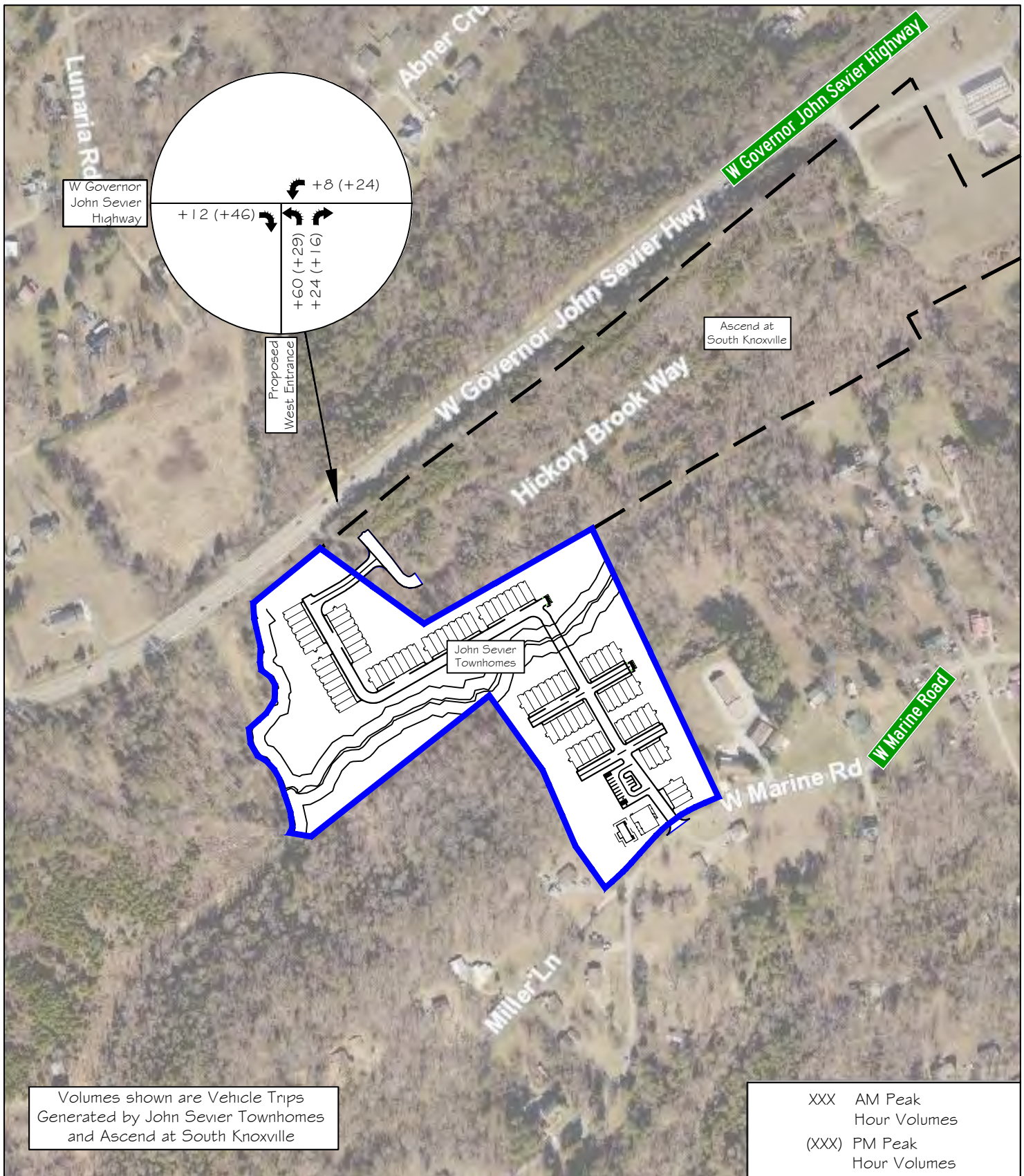
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FIGURE 7b

John Sevier Townhomes

Traffic Assignment of Generated Traffic during AM and PM Peak Hour for Ascend at South Knoxville



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FIGURE 7c

John Sevier Townhomes

Traffic Assignment of Generated Traffic during AM and PM Peak Hour for John Sevier Townhomes & Ascend at South Knoxville

▪ **PROJECTED TRAFFIC CONDITIONS WITH THE PROJECT:**

The calculated peak hour traffic generated by the John Sevier Townhomes and the Ascend at South Knoxville was added to the 2028 horizon year traffic using the predicted trip distributions and assignments. This procedure was completed to obtain the total projected traffic volumes at the Proposed West Entrance and W Governor John Sevier Highway intersection upon full build-out and occupancy in 2028. Figure 8 shows the projected 2028 AM and PM peak hour traffic volumes, including trips generated by both developments.

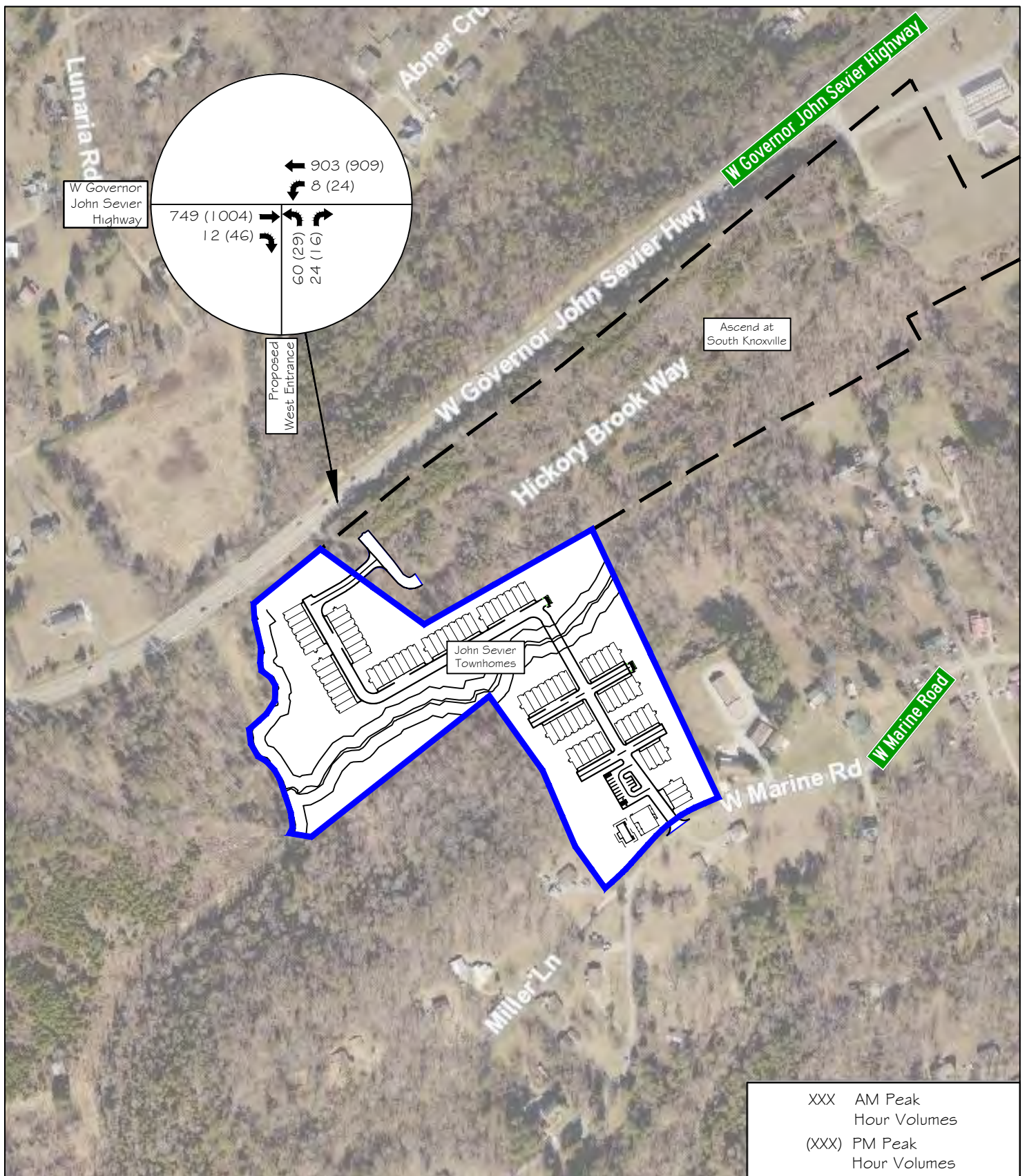
Capacity analyses were conducted to determine the projected Level of Service (LOS) at the Proposed West Entrance with the development traffic in 2028, as shown in Figure 8. The intersection capacity results for the projected 2028 peak hour traffic are shown in Table 2, with the traffic software worksheet results in the Appendix. As shown in Table 2, the intersection is projected to experience acceptable vehicle delays during the 2028 AM and PM peak hours.

TABLE 2
INTERSECTION CAPACITY ANALYSIS RESULTS -
2028 PEAK HOUR PROJECTED TRAFFIC CONDITIONS WITH THE PROJECT

INTERSECTION	TRAFFIC CONTROL	APPROACH/ MOVEMENT	AM PEAK			PM PEAK		
			LOS ^a	DELAY ^b (seconds)	v/c ^c	LOS ^a	DELAY ^b (seconds)	v/c ^c
W Governor John Sevier Highway (WB & EB) at Proposed West Entrance (NB)		Northbound Left	D	30.2	0.320	D	30.9	0.189
		Northbound Right	C	15.4	0.071	C	19.2	0.066
		Westbound Left	A	9.5	0.011	B	10.8	0.041

Note: All analyses were calculated in Synchro 12 software and reported using HCM 7th Edition intersection methodology

^a Level of Service, ^b Average Delay (sec/vehicle), ^c Volume-to-Capacity Ratio



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FIGURE 8

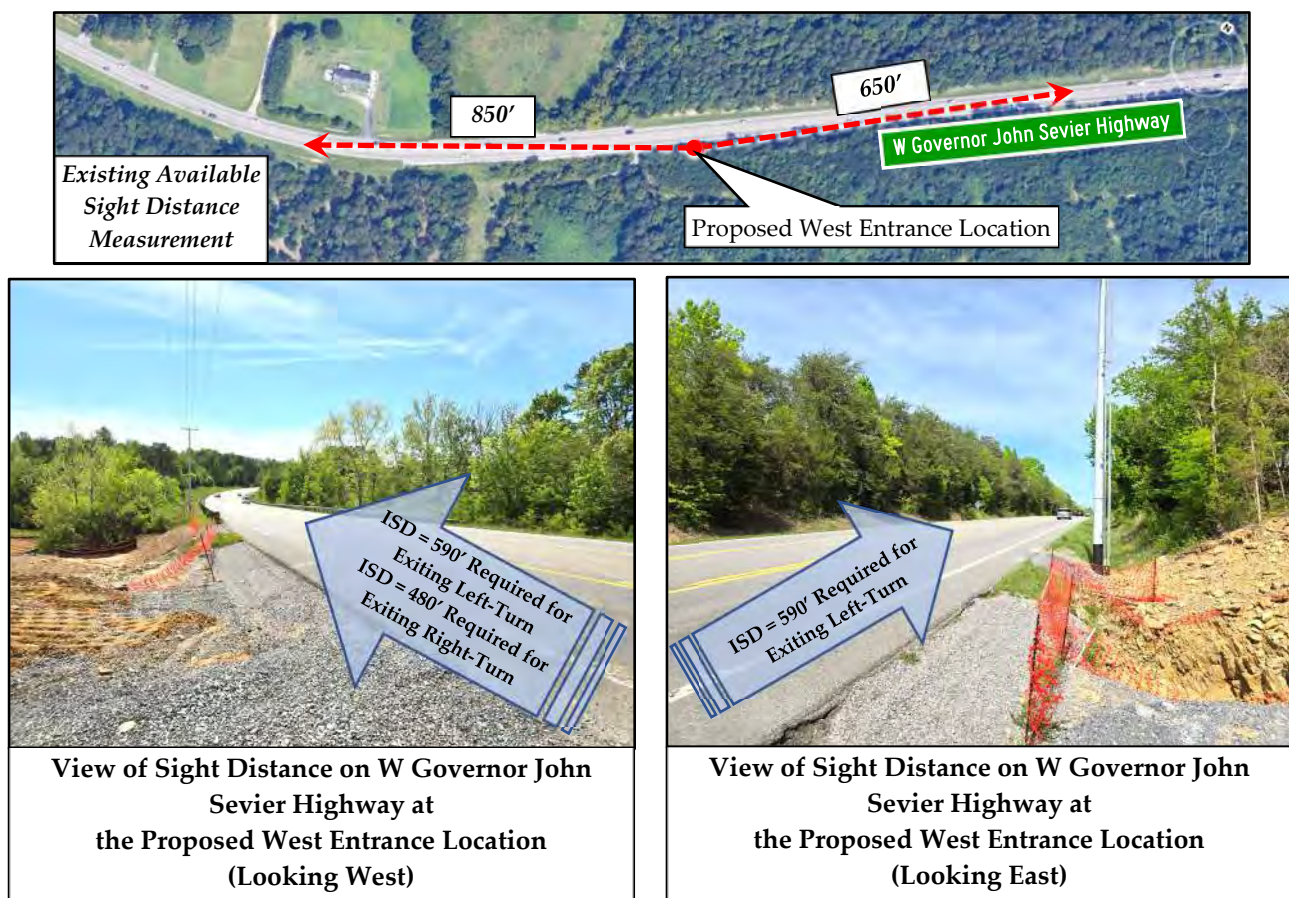
John Sevier Townhomes

2028 Peak Hour Traffic Volumes -
Projected Traffic Conditions
With the Project

■ EVALUATION OF SIGHT DISTANCE

At the Proposed West Entrance location on W Governor John Sevier Highway, where the posted speed limit is 50 mph, the ISD required for left-turn exits is 590 feet and for right-turn exits is 480 feet, calculated based on AASHTO and TDOT guidance. This distance is required for a motorist to exit safely to the left or right at W Governor John Sevier Highway from the Proposed West Entrance.

As a follow-up safety check, visual observations of the existing sight distances at the Proposed West Entrance location on W Governor John Sevier Highway were measured using a Nikon Laser Rangefinder. The available intersection sight distance was visually estimated to be a minimum of 850 feet to the west on W Governor John Sevier Highway, and 650 feet to the east. Based on visual observation, the intersection sight distances from the Proposed West Entrance will be adequate. Images of the existing sight distances at the Proposed West Entrance location are labeled in the following image with the required ISD and the rangefinder-measured sight distances.



▪ **EVALUATION OF TURN LANE THRESHOLDS**

The need for a separate left- or right-turn lane on W Governor John Sevier Highway at the Proposed West Entrance was evaluated using the projected 2028 volumes. At this intersection, only a separate right-turn lane was evaluated since an existing two-way left-turn lane (TWLTL) is already provided in the center of W Governor John Sevier Highway.

The criteria used for these turn lane evaluations were based on TDOT's "Highway Safety Access Manual" procedures. This design policy relates vehicle volume thresholds based on prevailing speeds for two-lane and four-lane roadways. The Proposed West Entrance on W Governor John Sevier Highway is within a 50 mph speed zone; therefore, it was evaluated based on the posted speed limit. The worksheets for these evaluations are provided in the Appendix.

At the Proposed West Entrance intersection, the projected volumes nearly do, but do not fully meet the threshold for a separate eastbound right-turn lane on W Governor John Sevier Highway in the 2028 AM peak hour. However, in the 2028 PM peak hour, the threshold is fully met, warranting a recommendation for a separate eastbound right-turn lane.

According to TDOT procedure, a separate turn lane is typically not fully justified unless it meets both thresholds during AM and PM peak hours. Furthermore, the TIS analysis for the Ascend at South Knoxville produced the same results but nonetheless recommended a separate right-turn lane for the Proposed West Entrance. Subsequently, however, TDOT approved this entrance for the Ascend at South Knoxville, allowing a flared/tapered right-turn configuration instead of a full dedicated right-turn lane. The reason for this, according to Bryan Ortiz, Transportation Engineering Specialist 3 with TDOT, was the following (via email dated 4.10.26):

"Originally, we did want the full turn lane as it would have been warranted for the amount of traffic that would be flowing in. However, most of the turn lane would have been in the neighboring property's frontage, which per our manual (Section 5.8.1), should not be done. So, we asked to have a taper within their property frontage so there would be at least some area for drivers to pull off. With the other entrance already having a turn lane, we found this option to be sufficient for that access."

In the above statement, the "neighboring property's frontage" is a reference to the proposed development property for the John Sevier Townhomes, and the "other entrance" is a reference to

the Ascend at South Knoxville's Proposed East Entrance. To provide further context, the same email discussion from Bryan Ortiz continued with the following:

"I believe during this permit process there was mention of the neighboring property developing as well. The recommendation of having a joint access agreement was brought up so the full turn lane could be installed, but since there was an easement between both properties within the owner's property, they decided to just use the easement for access. If the neighboring property is going to develop similarly, I would expect there to be a full turn lane, or at least a taper as well."

▪ **PROJECTED VEHICLE QUEUES**

An additional software program calculated the projected vehicle queues for the 2028 AM and PM peak hours at the studied intersection. The previously mentioned Synchro Traffic Software includes SimTraffic.

The calculated vehicle queue results were based on the average of outcomes from 10 traffic simulations in the software. The 95th percentile vehicle queue lengths at the studied intersection are shown in Table 3 under the projected 2028 conditions. The vehicle queue worksheet results from the SimTraffic Software (Version 12) are in the Appendix.

Table 3 reports the results and shows short vehicle queues for entering left turns from W Governor John Sevier Highway. However, the northbound exiting movements have fairly substantial vehicle queues for left-turning vehicles. For comparison, one passenger-vehicle length is considered 25 feet when vehicle spacing is included. Thus, the longest calculated vehicle queues are expected in the northbound left-turn lane, at nearly 7 passenger vehicles long in the AM peak hour and just under 6 in the PM peak hour. Northbound right-turn vehicle queues are expected to be approximately 3 passenger vehicles in both peak hours.

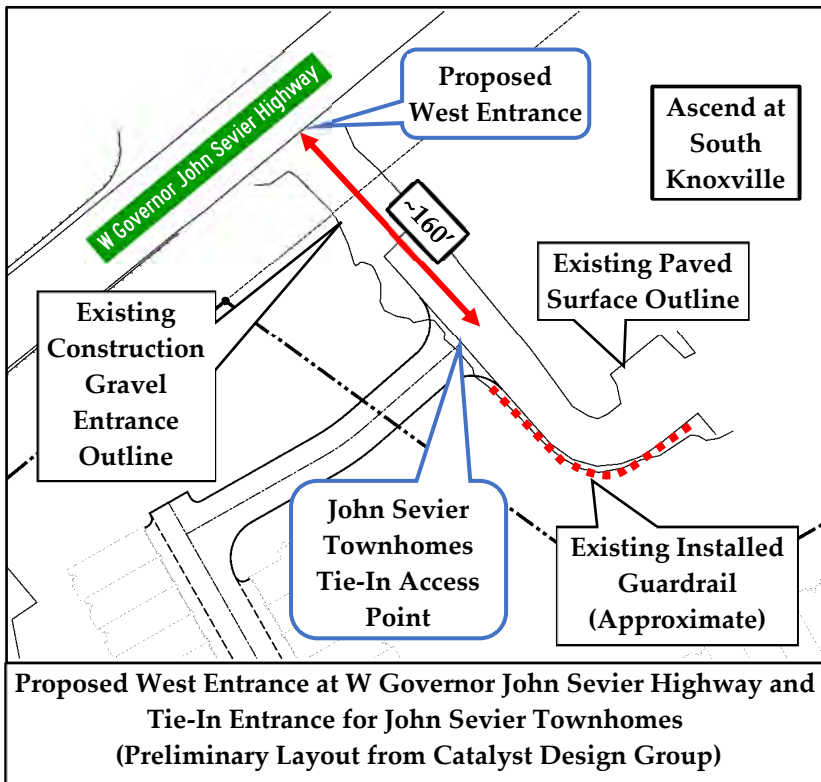
TABLE 3
VEHICLE QUEUE SUMMARY -
2028 PEAK HOUR PROJECTED TRAFFIC CONDITIONS WITH THE PROJECT

INTERSECTION	TRAFFIC CONTROL	APPROACH/ MOVEMENT	95 th PERCENTILE VEHICLE QUEUE LENGTH (ft)	
			AM PEAK HOUR	PM PEAK HOUR
W Governor John Sevier Highway (WB & EB) at Proposed West Entrance (NB)		Northbound Left	172	131
		Northbound Right	82	65
		Westbound Left	22	37

Note: All analyses were calculated in SimTraffic 12 software

The TIS for the Ascend at South Knoxville in 2022 did not include any additional vehicle trips in the analysis for the adjacent property (John Sevier Townhomes) that could be generated and potentially share use of the Proposed West Entrance at W Governor John Sevier Highway. In this previous TIS, the exiting northbound right-turn lane for the Proposed West Entrance was recommended to have a storage length of 75 feet, and the northbound left-turn lane was to consist of and be the continuation of the internal main driveway in the Ascend at South Knoxville to the highway.

The inclusion of John Sevier Townhomes' access to the Proposed West Entrance is shown in the preliminary plan, with a tie-in point approximately 160 feet from the edge of W Governor John Sevier Highway. With a 95th percentile vehicle queue length of 172 feet during the 2028 AM peak hour, it is expected that northbound exiting vehicles at the Proposed West Entrance will occasionally block vehicles exiting the John Sevier Townhomes development at the tie-in access point.



APPENDICES

TRAFFIC COUNT DATA

Major Street: W Governor John Sevier Highway (WB-EB)
 Minor Street: at Proposed West Entrance (Ascend at South Knoxville)
 Traffic Control: n/a

4/22/26 (Wednesday)
 Sunny and Warm
 Conducted by: Ajax Engineering

	W Governor John Sevier Highway	W Governor John Sevier Highway		
TIME	WESTBOUND	EASTBOUND	VEHICLE	PEAK
BEGIN	THRU	THRU	TOTAL	HOUR
7:00 AM	193	115	308	
7:15 AM	231	146	377	
7:30 AM	219	191	410	7:30 AM - 8:30 AM
7:45 AM	222	192	414	
8:00 AM	209	172	381	
8:15 AM	218	165	383	
8:30 AM	143	140	283	
8:45 AM	149	152	301	
TOTAL	1584	1273	2857	
2:00 PM	131	171	302	
2:15 PM	163	149	312	
2:30 PM	167	156	323	
2:45 PM	153	193	346	
3:00 PM	185	171	356	
3:15 PM	200	180	380	
3:30 PM	183	230	413	
3:45 PM	185	243	428	
4:00 PM	204	225	429	
4:15 PM	205	213	418	
4:30 PM	190	267	457	4:30 PM - 5:30 PM
4:45 PM	218	230	448	
5:00 PM	226	228	454	
5:15 PM	240	240	480	
5:30 PM	182	249	431	
5:45 PM	244	222	466	
TOTAL	3076	3367	6443	

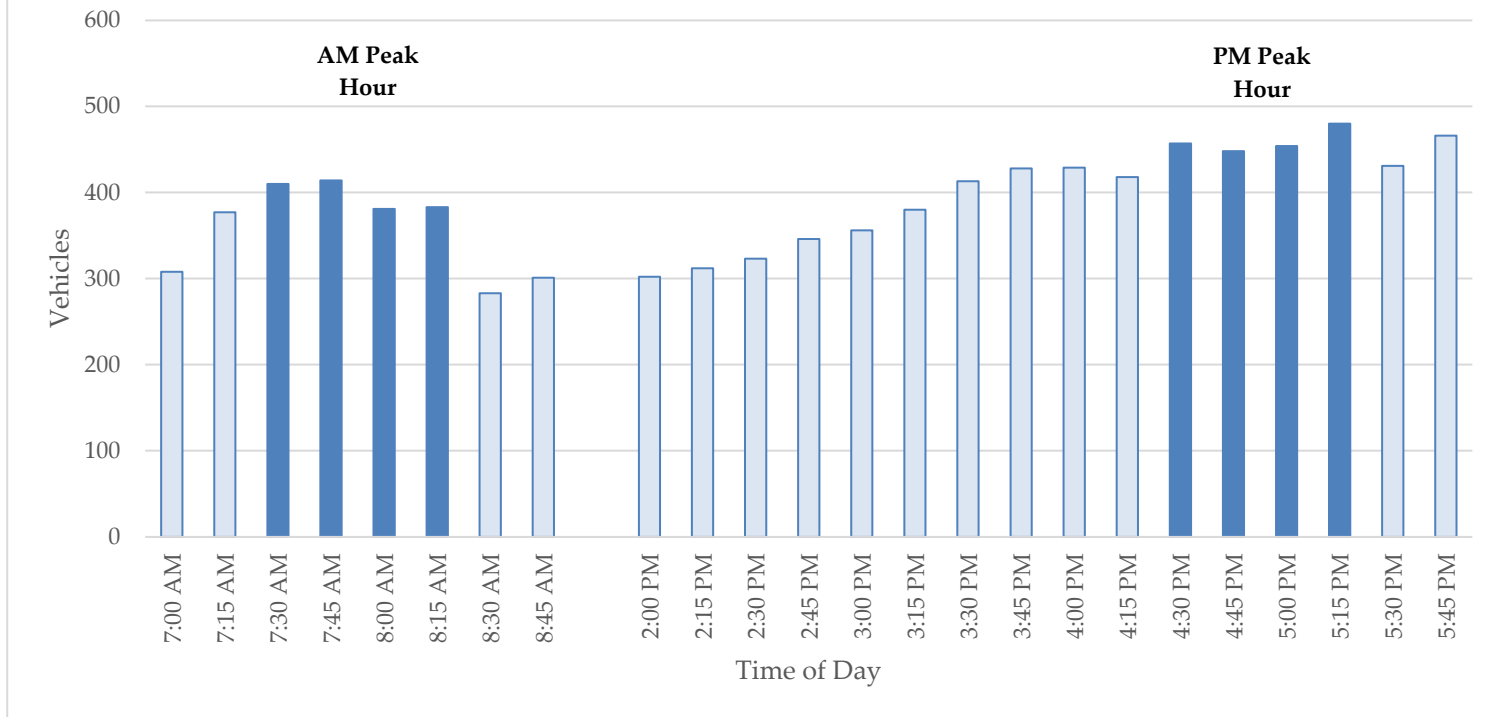
2025 AM Peak Hour 7:30 AM - 8:30 AM

	W Governor John Sevier Highway	W Governor John Sevier Highway
TIME	WESTBOUND	EASTBOUND
BEGIN	THRU	THRU
7:30 AM	219	191
7:45 AM	222	192
8:00 AM	209	172
8:15 AM	218	165
TOTAL	868	720
PHF	0.98	0.94
Truck %	4.8%	4.7%

2025 PM Peak Hour 4:30 PM - 5:30 PM

	W Governor John Sevier Highway	W Governor John Sevier Highway
TIME	WESTBOUND	EASTBOUND
BEGIN	THRU	THRU
4:30 PM	190	267
4:45 PM	218	230
5:00 PM	226	228
5:15 PM	240	240
TOTAL	874	965
PHF	0.91	0.90
Truck %	1.8%	5.1%

**W Governor John Sevier Highway (at Proposed West Entrance
Location - Ascend at South Knoxville)
Traffic Count Totals
4/22/2026**



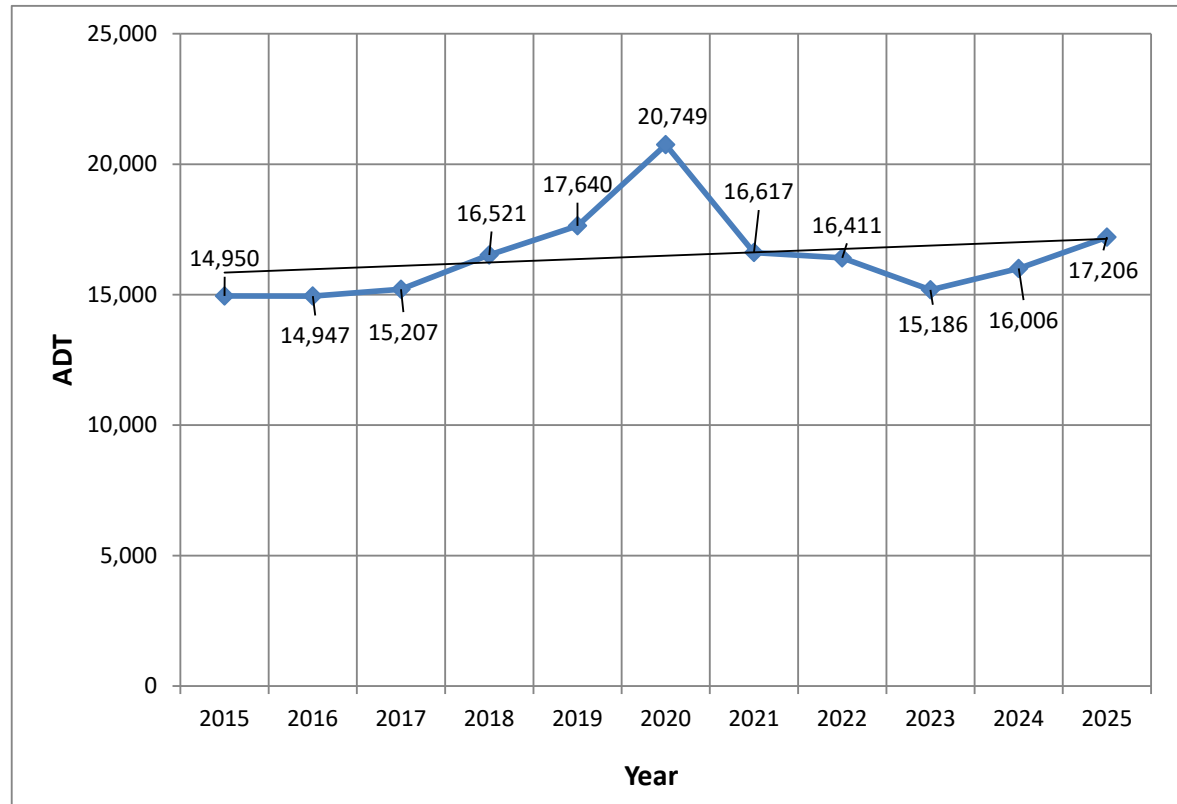
Historical Traffic Counts

Organization: TDOT

Station ID #: 47000290

Location: W Governor John Sevier Highway, east of Martin Mill Pike

YEAR	AADT	
2015	14,950	Trendline ↓
2016	14,947	
2017	15,207	
2018	16,521	
2019	17,640	
2020	20,749	
2021	16,617	
2022	16,411	
2023	15,186	
2024	16,006	
2025	17,206	



2015 - 2025 Growth Rate = 15.1%

Average Annual Growth Rate = 1.4%

TN

TDOT

Tennessee Department of Transportation

Traffic Count (TCDS)

HomeLocateLocate AllEmail ThisAuto-Locate

Disclaimer: Please note that the AADT displayed for the current year is only a preliminary estimate, updated adjustment factors have not yet been applied to the traffic count information to produce a final AADT.

List View

Record7774of 16433Goto Recordgo

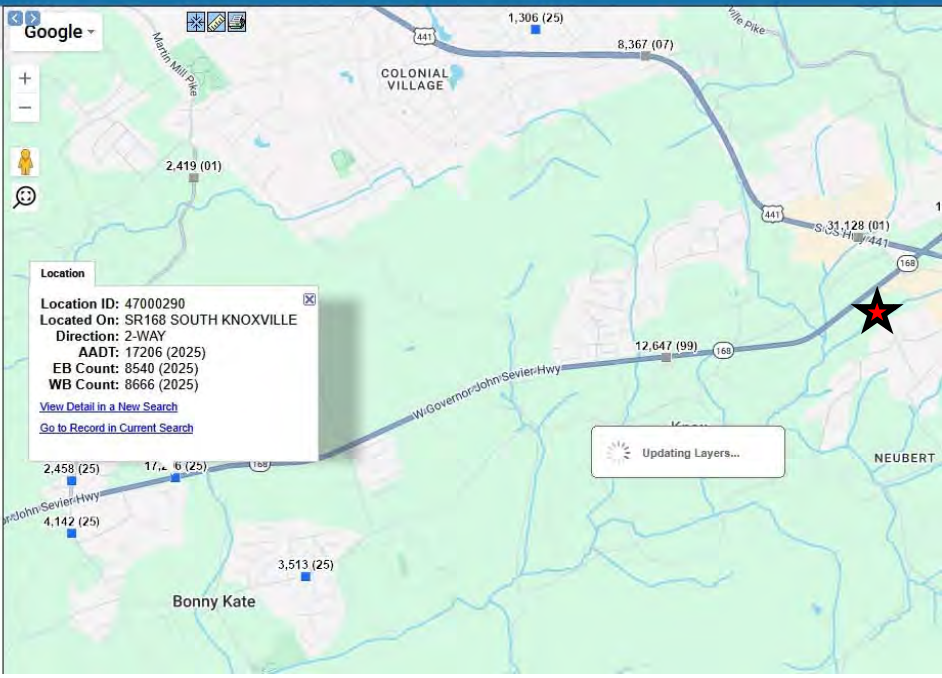
Location ID	47000290	MPO ID	
Type	SPOT	HPMS ID	
On NHS		On HPMS	
LRS ID	475016801N00000	LRS Loc Pt	3.025
SF Group	Urban Minor Arterial (2026)	Route Type	
AF Group	Region 1 Urban Minor Arterial (2026)	Route	
GF Group	Knox (2026)	Active	Yes
Class Dist Grp	Region 1 Urban Minor Arterial (2026)	Category	CC
Seas Class Grp			
WIM Group			
QC Group	Default		
Functl Class	Minor Arterial	Milepost	
Located On	SR168		
Loc On Alias	W. GOV. JOHN SEVIER HWY.		
	SOUTH KNOXVILLE		

More Detail

STATION DATA

Directions: 2-WAYEBWB11

AADT								
	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2025	17,206	1,724	10	56	16,046 (93%)	1,160 (7%)	
	2024	16,006 ³		9	61	15,494 (97%)	512 (3%)	Grown from 2023
	2023	15,186	1,421	9	61	13,725 (90%)	1,461 (10%)	
	2022	16,411	1,500	9	65	15,953 (97%)	458 (3%)	
	2021	16,617	1,400	8	65	16,068 (97%)	549 (3%)	



HCM 7th TWSC

9: Proposed West Entrance & W Governor John Sevier Highway

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	749	12	8	903	60	24
Future Vol, veh/h	749	12	8	903	60	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	0	50
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	4	-	-	-4	0	-
Peak Hour Factor	91	90	90	89	90	90
Heavy Vehicles, %	6	0	0	6	0	0
Mvmt Flow	823	13	9	1015	67	27

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	836
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	806
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	806
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.08	26
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	208	373	-	-	806	-
HCM Lane V/C Ratio	0.32	0.071	-	-	0.011	-
HCM Ctrl Dly (s/v)	30.2	15.4	-	-	9.5	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0	-

HCM 7th TWSC

9: Proposed West Entrance & W Governor John Sevier Highway

Intersection

Int Delay, s/veh 0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1004	46	24	909	29	16
Future Vol, veh/h	1004	46	24	909	29	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	75	-	0	50
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	4	-	-	-4	0	-
Peak Hour Factor	96	90	90	93	90	90
Heavy Vehicles, %	5	0	0	2	0	0
Mvmt Flow	1046	51	27	977	32	18

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1097
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	644
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	644
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0.29	26.75
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	171	271	-	-	644	-
HCM Lane V/C Ratio	0.189	0.066	-	-	0.041	-
HCM Ctrl Dly (s/v)	30.9	19.2	-	-	10.8	-
HCM Lane LOS	D	C	-	-	B	-
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.1	-

TRIP GENERATION FOR JOHN SEVIER TOWNHOMES

80 Attached Townhomes

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	WEEKDAY GENERATED TRAFFIC	WEEKDAY GENERATED TRAFFIC AM PEAK HOUR			WEEKDAY GENERATED TRAFFIC PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
#215	Single-Family Attached Housing	80	526	25%	75%		57%	43%	
				8	24	32	22	16	38
Total New Volume Site Trips			526	8	24	32	22	16	38

ITE Trip Generation Manual, 12th Edition

Trips calculated by using Fitted Curve Equations

TRIP GENERATION FOR JOHN SEVIER TOWNHOMES

80 Attached Townhomes

$$80 \text{ Units} = X$$

Weekday:

Fitted Curve Equation: $T = 6.53(X) + 3.25$

$$T = 6.530 * 80 + 3.25$$

$$T = \underline{\underline{526 \text{ trips}}}$$

Peak Hour of Adjacent Traffic between 7 and 9 am:

Fitted Curve Equation: $T = 0.59(X) - 15.25$

$$T = 0.590 * 80 - 15.25$$

$$T = \underline{\underline{32 \text{ trips}}}$$

Peak Hour of Adjacent Traffic between 4 and 6 pm:

Fitted Curve Equation: $T = 0.57(X) - 7.84$

$$T = 0.570 * 80 - 7.84$$

$$T = \underline{\underline{38 \text{ trips}}}$$

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. 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).

Additional Data

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

Source Numbers

357, 390, 418, 525, 571, 583, 638, 868, 869, 870, 896, 912, 959, 1009, 1046, 1056, 1058, 1077

TRIP GENERATION FOR ASCEND AT SOUTH KNOXVILLE

286 Apartments (Phase 1 & 2)

ITE LAND USE CODE	LAND USE DESCRIPTION	# OF UNITS	GENERATED DAILY TRAFFIC	GENERATED TRAFFIC AM PEAK HOUR			GENERATED TRAFFIC PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
#220	Multifamily Housing (Low-Rise)	286	1,731	24%	76%		62%	38%	
				27	86	113	96	49	145
Total New Volume Site Trips			1,731	27	86	113	96	49	145

ITE Trip Generation Manual, 12th Edition

Trips calculated by using Fitted Curve Equations

TRIP GENERATION FOR ASCEND AT SOUTH KNOXVILLE

286 Apartments

$$286 \text{ Units} = X$$

Weekday:

Fitted Curve Equation: $T = 5.63(X) + 120.45$

$$T = 1610 + 120.45$$

$$T = \underline{\underline{1,731 \text{ trips}}}$$

Peak Hour of Adjacent Traffic between 7 and 9 am:

Fitted Curve Equation: $T = 0.35(X) + 12.93$

$$T = 100 + 12.93$$

$$T = \underline{\underline{113 \text{ trips}}}$$

Peak Hour of Adjacent Traffic between 4 and 6 pm:

Fitted Curve Equation: $T = 0.48(X) + 7.35$

$$T = 137 + 7.35$$

$$T = \underline{\underline{145 \text{ trips}}}$$

Land Use: 220

Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing is a residential building with two or three floors (levels) of residences. Various configurations fit this description, including the following:

- Walk-up apartment or multiplex—access to the individual dwelling units is typically internal to the structure and provided through a shared entry, stairway, and hallway.
- Mansion apartment with several dwelling units within what appears from the outside to be a single-family dwelling unit.
- Stacked townhouse designed to match the external appearance of a townhouse, but which has dwelling units that share both floors and walls and with access through a central entry and stairway.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is ½ mile or less.

Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there was an average of 2.72 residents per occupied dwelling unit.

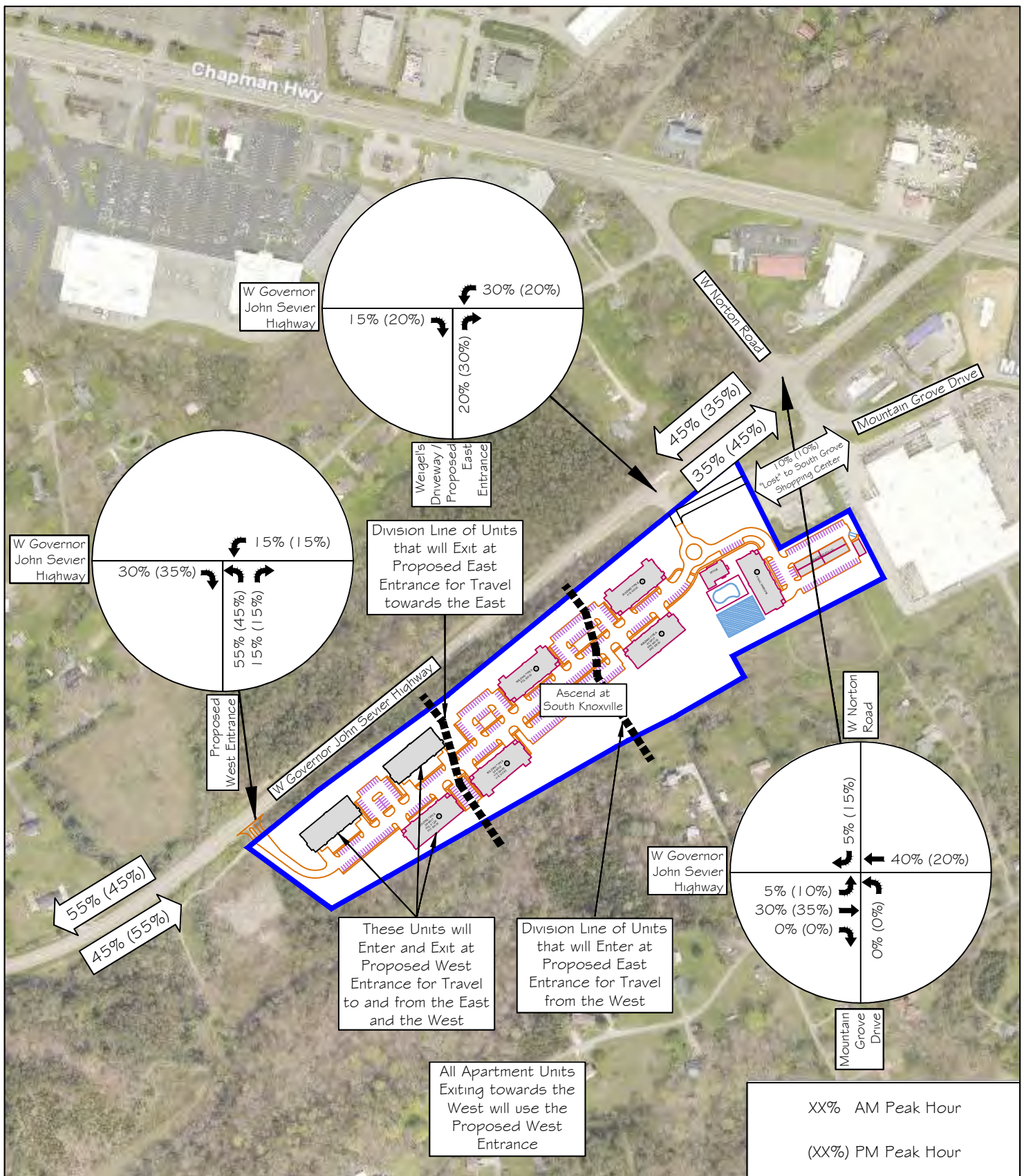
For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1990s, the 2000s, the 2010s, and the 2020s in Arizona, British Columbia (CAN), California, Delaware, Florida, Illinois, Maine, Massachusetts, Minnesota, New Jersey, New York, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, and Washington.

Source Numbers

357, 390, 412, 525, 530, 579, 583, 638, 864, 866, 896, 901, 903, 904, 936, 939, 944, 946, 947, 948, 963, 964, 966, 967, 1012, 1013, 1014, 1036, 1047, 1056, 1071, 1076, 1219, 1236, 1265, 1267



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NOT TO SCALE



FIGURE 6b

Ascend at South Knoxville

Directional Distribution of Generated Traffic during AM and PM Peak Hour for Phase 1 & 2

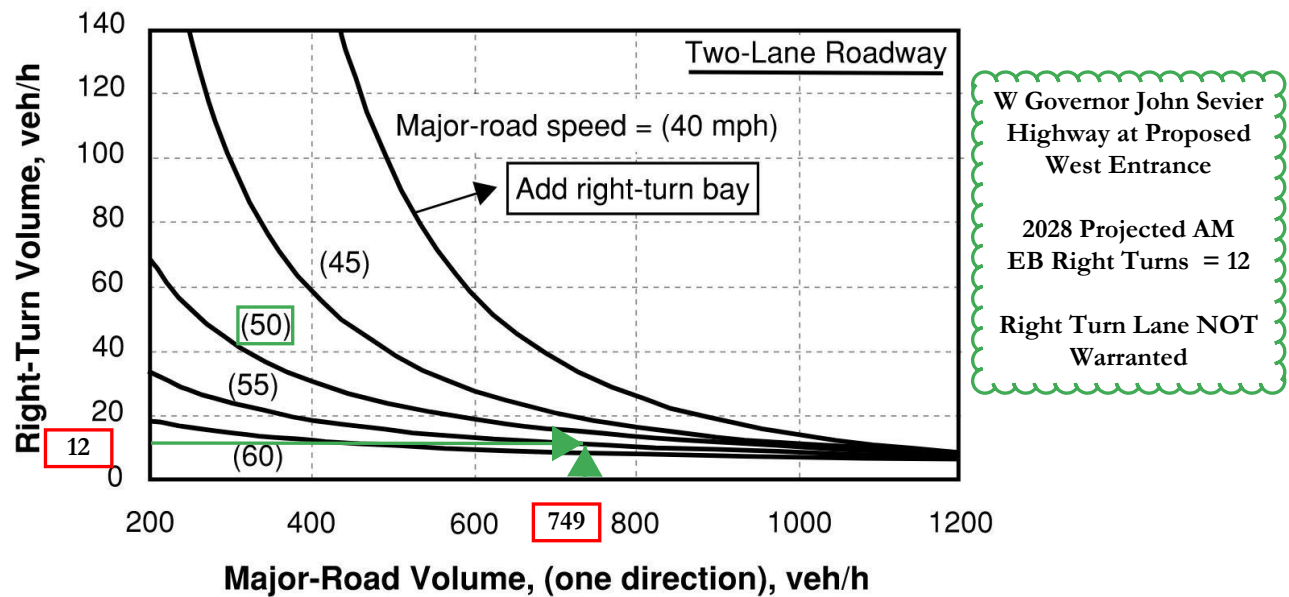


Figure 3-18: Right-Turn Lane Warrant along Two-Lane Roadway (Unsignalized Intersection with Two-Way Stop-Control)²⁴

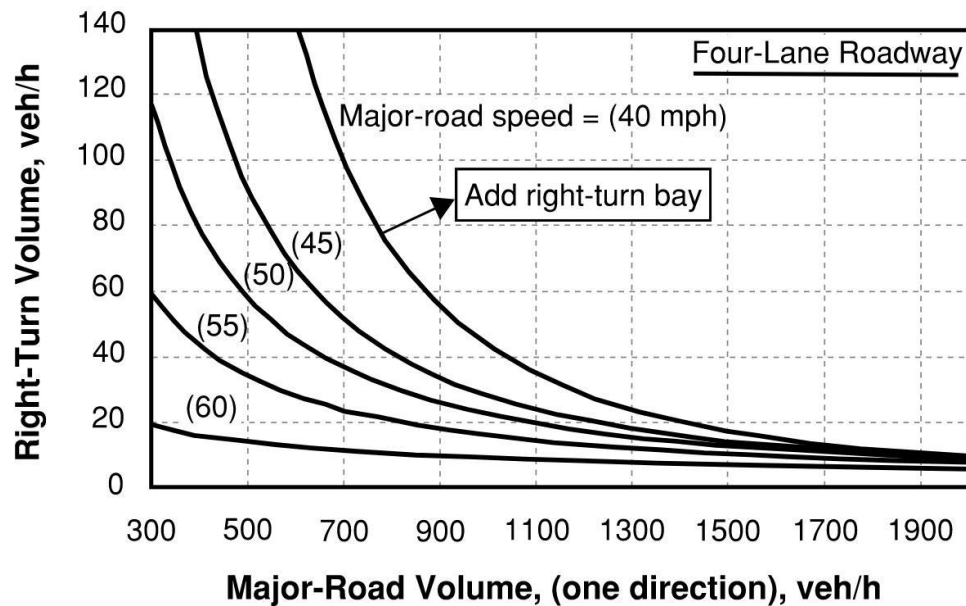


Figure 3-19: Right-Turn Lane Warrant along Four-Lane Roadway (Unsignalized Intersection with Two-Way Stop-Control)²⁵

²⁴ TRB, NCHRP 457, Evaluating Intersection Improvements (2001)

²⁵ TRB, NCHRP 457, Evaluating Intersection Improvements (2001)

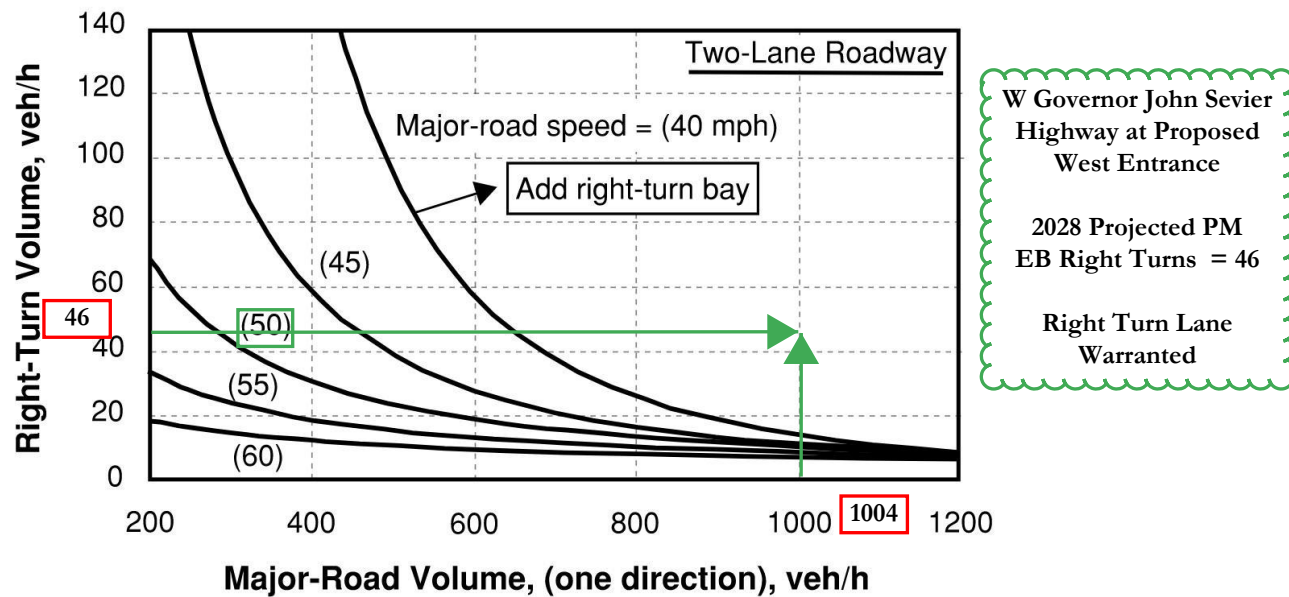


Figure 3-18: Right-Turn Lane Warrant along Two-Lane Roadway (Unsignalized Intersection with Two-Way Stop-Control)²⁴

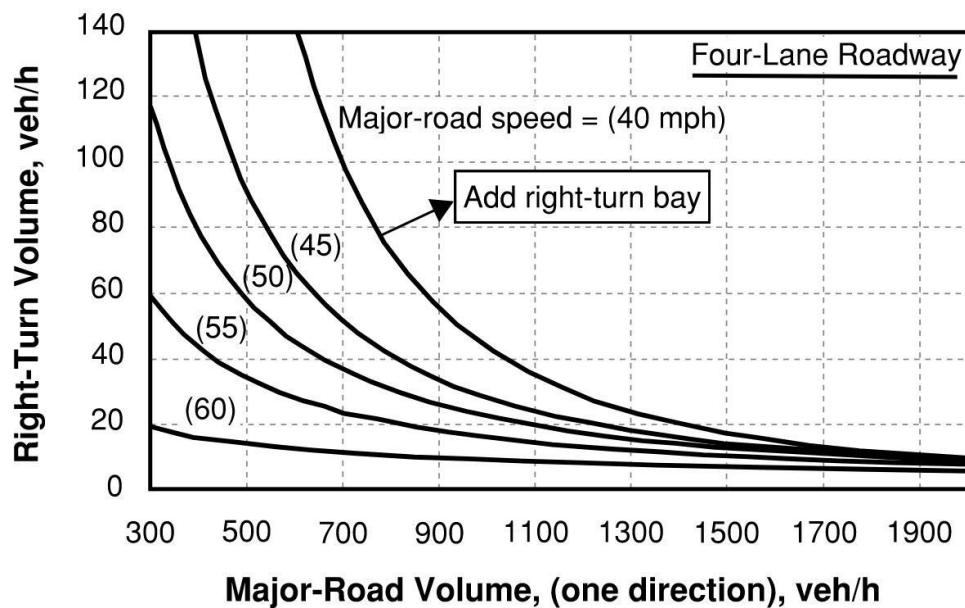


Figure 3-19: Right-Turn Lane Warrant along Four-Lane Roadway (Unsignalized Intersection with Two-Way Stop-Control)²⁵

²⁴ TRB, NCHRP 457, Evaluating Intersection Improvements (2001)

²⁵ TRB, NCHRP 457, Evaluating Intersection Improvements (2001)

Queuing and Blocking Report

Intersection: 9: Proposed West Entrance & W Governor John Sevier Highway

Movement	WB	NB	NB
Directions Served	L	L	R
Maximum Queue (ft)	32	197	101
Average Queue (ft)	5	71	25
95th Queue (ft)	22	172	82
Link Distance (ft)		342	
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	75		50
Storage Blk Time (%)		40	0
Queuing Penalty (veh)		10	0

Network Summary

Network wide Queuing Penalty: 10

Queuing and Blocking Report

Intersection: 9: Proposed West Entrance & W Governor John Sevier Highway

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	12	41	144	85
Average Queue (ft)	1	14	47	18
95th Queue (ft)	9	37	131	65
Link Distance (ft)	382		350	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		75		50
Storage Blk Time (%)			32	1
Queuing Penalty (veh)			5	0

Network Summary

Network wide Queuing Penalty: 5

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