ANCIENT LORE VILLAGE AT BOYD HOLLOW

Traffic Impact Study

Chapman Highway (SR 71)
Knoxville, TN

A Traffic Impact Study for the Ancient Lore Village at Boyd Hollow

Submitted to

Knoxville – Knox County Planning Commission

August 22, 2019
FMA Project No. 588.004

Submitted By:

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Executive Summary

Ancient Lore Village is proposing a commercial development (i.e. Ancient Lore Village at Boyd Hollow) located in Knox County, Tennessee. The development will include a resort style hotel, fine dining restaurant, and a wedding venue. The project is located near the intersection of Sevierville Pike at Nixon Road. Construction is proposed to take place this year with an expected opening date in 2021.

Traffic for this development will enter and exit via the proposed signalized intersection of Chapman Highway (SR 71) at Nixon Road/Dick Ford Lane. There are two gated entrances for the development located in the rear of the property that will be used only by employees and/or emergency access vehicles.

In order to maintain or provide an acceptable level-of-service for each of the intersections studied, some recommendations are presented.

Chapman Highway (SR 71) @ W Dick Ford Lane
Prior to the completion of the Ancient Lore Village the existing intersection of Chapman Highway (SR 71) at Nixon Road will be realigned to intersect with W Dick Ford Lane. Signal timing and roadway alignment to be coordinated with the City of Knoxville and Tennessee Department of Transportation.

The full buildout conditions at the signalized intersection of Chapman Highway (SR 71) at Nixon Road/W Dick Ford Lane were analyzed using the Highway Capacity Software (HCS7). The intersection will operate at a LOS A during both the AM and PM peak hours using optimized signal timing.

Chapman Highway (SR 71) @ Nixon Road
Prior to the completion of the Ancient Lore Village the existing intersection of Chapman Highway (SR 71) at Nixon Road will be realigned to intersect with W Dick Ford Lane.

Sevierville Pike @ Employee Parking Access
The minimum required sight distance for a road with a posted speed limit of 40 mph is 400 feet in each direction in accordance with the "Subdivision Regulations" for Knoxville and Knox County. The existing landscaping within the right-of-way along Sevierville Pike will need to be modified in order to achieve a sight distance of 400 feet in each direction. FMA recommends the sight distance be verified in the field after the completion of the Ancient Lore Village and that any necessary landscaping be installed to maintain the sight distance and comply with Knox County standards.

Sevierville Pike @ Nixon Road
After the completion of the Ancient Lore Village the intersection of Sevierville Pike at Nixon Road will be closed to through traffic.

Nixon Road
The existing conditions of Nixon Road do not meet the current minimum Knox County and City of Knoxville roadway standards. Improvements on Nixon Road between Chapman Highway (SR 71) and Sevierville Pike including road widening, striping plan, etc. need to be coordinated with both the City of Knoxville and Knox County Engineering and Public Works.

1 Introduction

1.1 Project Description

This report provides a summary of a traffic impact study that was performed for the Ancient Lore Village at Boyd Hollow. The project is located near the intersection of Sevierville Pike at Nixon Road in Knox County, Tennessee. The location of the site is shown in Figure 1.

The full buildout of the development will consist of 150 resort style rooms, a 175 seat fine dining restaurant, a wedding venue and amphitheater seating. Construction is proposed to take place this year with an expected opening date in 2021.

As a part of the Ancient Lore Village development Nixon Road will be realigned to create a signalized intersection on Chapman Highway (SR 71) at W Dick Ford Lane.

Traffic for this development will enter and exit via the proposed signalized intersection of Chapman Highway (SR 71) at Nixon Road/W Dick Ford Lane. There are two gated entrances for the development located in the rear of the property that will be used only by employees and/or emergency access vehicles..

The proposed site layout is shown in Figure 2.

The purpose of this study is to evaluate the impacts to the traffic conditions caused by the proposed development.

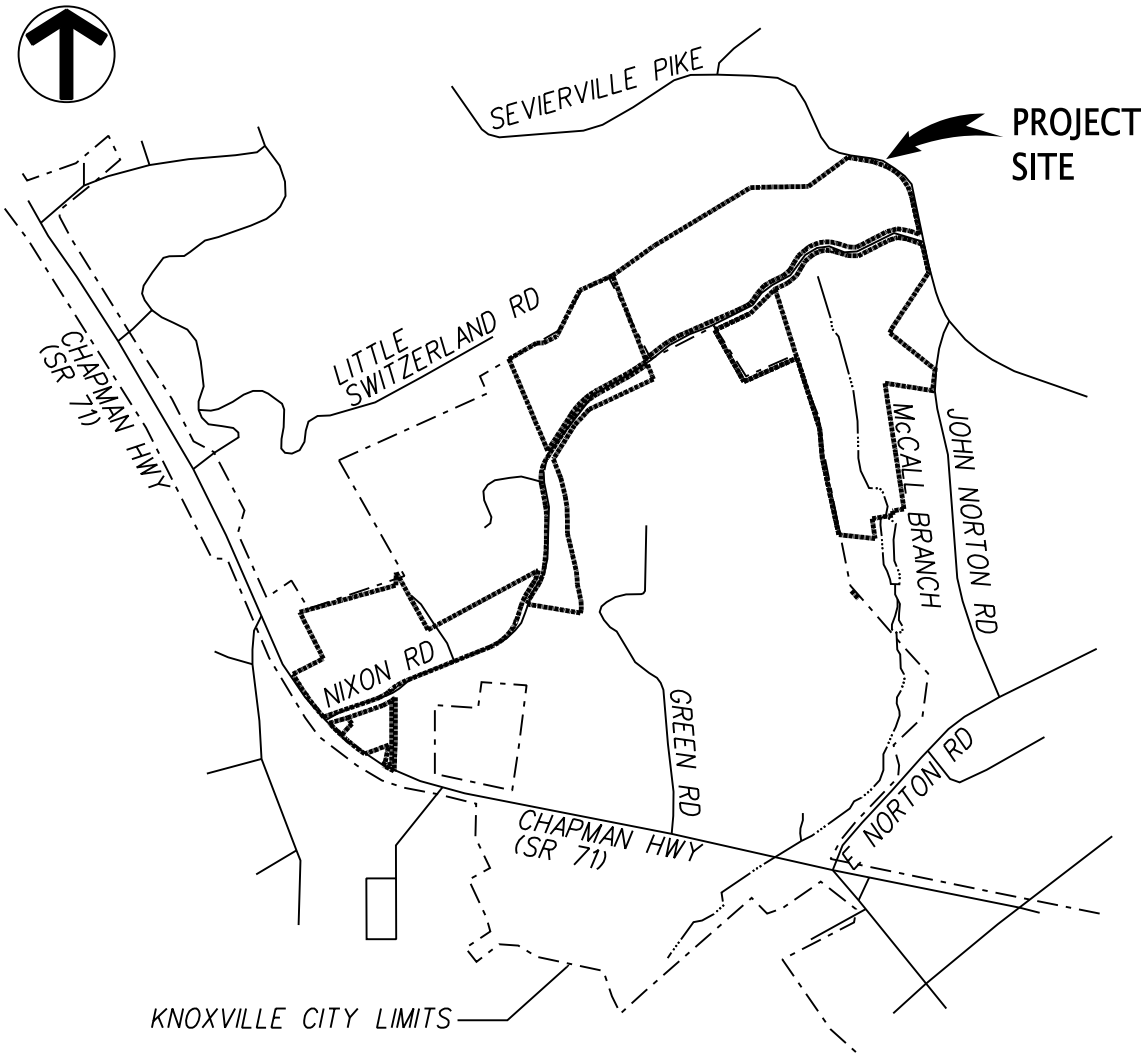


Figure 1: Location Map

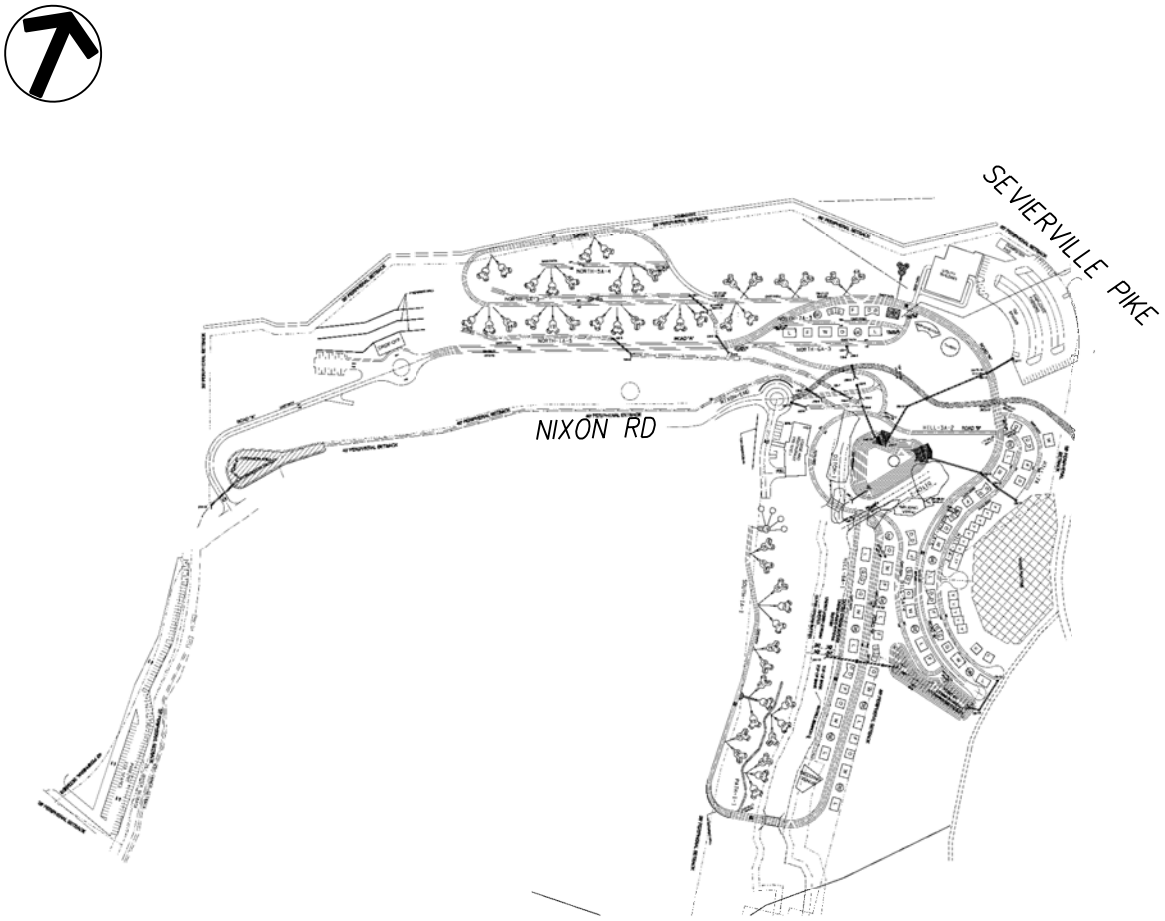


Figure 2: Site Plan

1.2 Existing Site Conditions

Nixon Road at the intersection with Chapman Highway (SR 71) is a two-lane road. The Knoxville-Knox County Planning Commission does not classify Nixon Road per the Major Road Plan therefore; it is considered a local street. There is no posted speed limit on Nixon Road. The existing width of Nixon Road varies from 15 feet to 19 feet between the intersection of Chapman Highway (SR 71) and Sevierville Pike.

Chapman Highway (SR 71) is a five-lane road with a two-way left turn lane at the intersection with Nixon Road. The Knoxville-Knox County Planning Commission classifies Chapman Highway (SR 71) as a major arterial with a 100 foot right-of-way per the Major Road Plan. The posted speed limit on Chapman Highway is 50 mph.

Sevierville Pike at the intersection with Nixon Road is a two-lane road. The Knoxville-Knox County Planning Commission classifies Sevierville Pike at the intersection with Nixon Road Highway (SR 71) as a major collector with a 60 foot right-of-way per the Major Road Plan. The posted speed limit on Sevierville Pike is 40 mph.

W Dick Ford Lane at the intersection with Chapman Highway (SR 71) is a two lane road. The Knoxville-Knox County Planning Commission does not classify W Dick Ford Lane per the Major Road Plan therefore; it is considered a local street. The posted speed limit on W Dick Ford Lane is 25 mph.

Aerial photos of the existing intersections are included in Attachment 1.

The City of Knoxville and Knoxville-Knox County Planning is conducting a study along the Chapman Highway Corridor between the Henley Street Bridge and Mountain Grove Drive. This effort will evaluate previous studies, confirm their recommendations, identify new issues, and develop a strategy for road improvements. The Chapman Highway Corridor Study is not a funded roadway project.

1.3 Transit Network

The Knoxville Area Transit (KAT) operates in the vicinity of the proposed development.

Route 41 (Chapman Highway) stops include Knoxville Station – Platform P, Chapman Highway past Moody, Walmart, Chapman Highway past Young High Pike and Knoxville Station. Traveling along Henley Street and Chapman Highway, this route provides headways of approximately 60 minutes on Weekdays, Saturdays and Sundays.

The nearest KAT stop along Chapman Highway northbound is currently located in front of the Burger King south of the intersection with Nixon Road. The nearest southbound stop is at the 7117 Block of Chapman Highway.

A map of KAT bus route 41 is included in Attachment 9.

2 Existing Traffic Volumes

FMA conducted a turning movement count at the intersection of Chapman Highway at Nixon Road on Wednesday February 13, 2019, at the intersection of Sevierville Pike at Nixon Road on Wednesday March 6, 2019 and at the intersection of Chapman Highway at W Dick Ford Lane on Tuesday August 20, 2019.

The current AM and PM peak hours were determined using the turning movement counts that FMA conducted. At the intersection of Chapman Highway (SR 71) at Nixon Road and Chapman Highway (SR 71) at W Dick Ford Lane the AM peak hour occurred between 7:15 a.m. and 8:15 a.m., and the PM peak hour occurred between 4:45 p.m. and 5:45 p.m.

The existing volumes including the AM and PM peak hour traffic volumes at the count locations are shown in Figure 3, and the count data collected is included in Attachment 2.

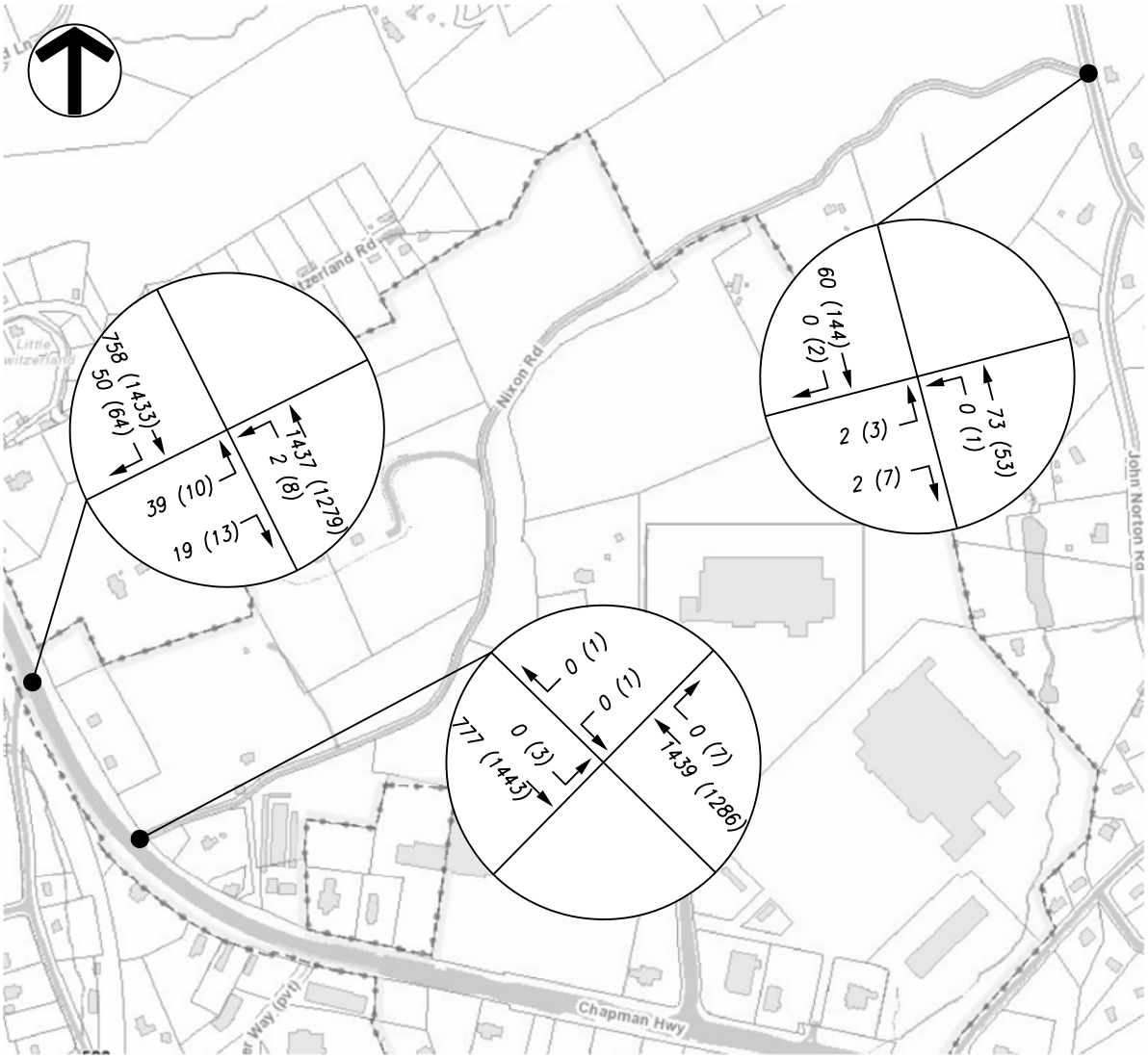


Figure 3: 2019 Existing Peak Hour Traffic

3 Background Growth

The Tennessee Department of Transportation (TDOT) and the Knoxville Regional Transportation Planning Organization (TPO) maintain count stations in the vicinity of the proposed development.

TDOT count station #000111 is located on Chapman Highway (SR 71) south of Knoxville and north of the project location. The annual growth rate for this station over the last ten years is approximately 0.00% and the 2017 ADT was 30,935 vehicles per day.

Knoxville TPO count station ID: 093C154 is located on Chapman Highway (SR 71) north of Green Road. The annual growth rate for this station over the last ten years is approximately -1.14% and the 2017 ADT was 27,580 vehicles per day.

Knoxville TPO count station ID: 093M250 is located on Sevierville Pike north of Governor John Sevier Highway. The annual growth rate for this station over the last seven years is approximately 1.20% and the 2016 ADT was 2,410 vehicles per day.

For the purpose of this study, an annual growth rate of 1.0% was assumed for traffic along Chapman Highway, Nixon Road, W Dick Ford Lane and Sevierville Pike until full occupancy is reached in 2022. Attachment 3 shows the trend line growth charts for the Knoxville TPO count stations.

Figure 4 demonstrates the projected background peak hour volumes at the intersections of Chapman Highway (SR 71) at Nixon Road, Chapman Highway (SR 71) at W Dick Ford Lane and Sevierville Pike at Nixon Road after applying the background growth rate to the existing conditions.

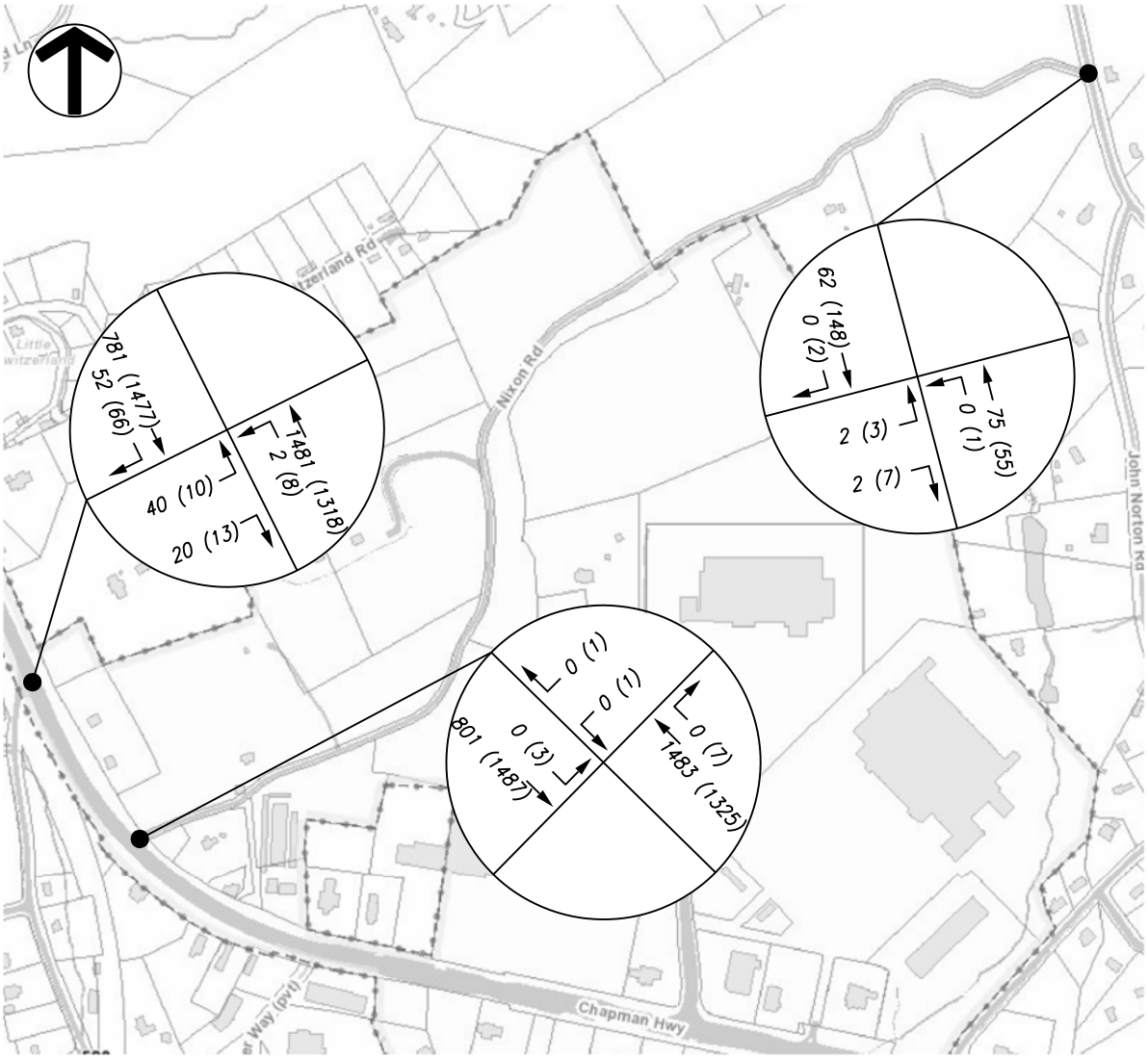


Figure 4: 2022 Background Peak Hour Traffic

4 Trip Generation and Trip Distribution

The trip generation was calculated using the fitted curve equations where provided from *Trip Generation, 10th Edition,* published by the Institute of Transportation Engineers. Resort Hotel (Land Use 330) was used to calculate the AM and PM peak hour trips and Hotel (Land Use 310) was used to calculate the daily trips since that information was not available for the Resort Hotel (Land Use 330).

Quality Restaurant (Land Use 931) was assumed in order to calculate the estimated trips for a 175 seat fine dining restaurant. It was assumed that 25% of the proposed trips will be new trips and 75% of the proposed trips will be internal trips within the resort. The restaurant will not be open during the AM peak hour to the public; therefore no trips were assumed for the AM peak hour.

The land use worksheets are included in Attachment 4.

The total number of new trips generated by the Ancient Lore Village at Boyd Hollow will be 1,326 new daily trips, 28 trips during the AM peak hour and 35 trips during the PM peak hour. A trip generation summary is shown in Table 4-1.

Table 4 - Trip Generation Summary
Ancient Lore Village at Boyd Hollow

Land Use	Density	Daily Trips	AM Peak Hour Enter	AM Peak Hour Exit	PM Peak Hour Enter	PM Peak Hour Exit
		Hotel				
Hotel (LUC 310/330)	**150 Rooms**	**1,267**	**20**	**8**	**10**	**13**
Quality Restaurant (LUC 931)	**175 Seats**	**235**	**-**	**-**	**33**	**16**
75% Internal Reduction		**-176**	**-**	**-**	**-25**	**-12**
Total New Trips		**1,326**	**20**	**8**	**18**	**17**
Amphitheater	**550 seats**	**- Special Events Only -**				

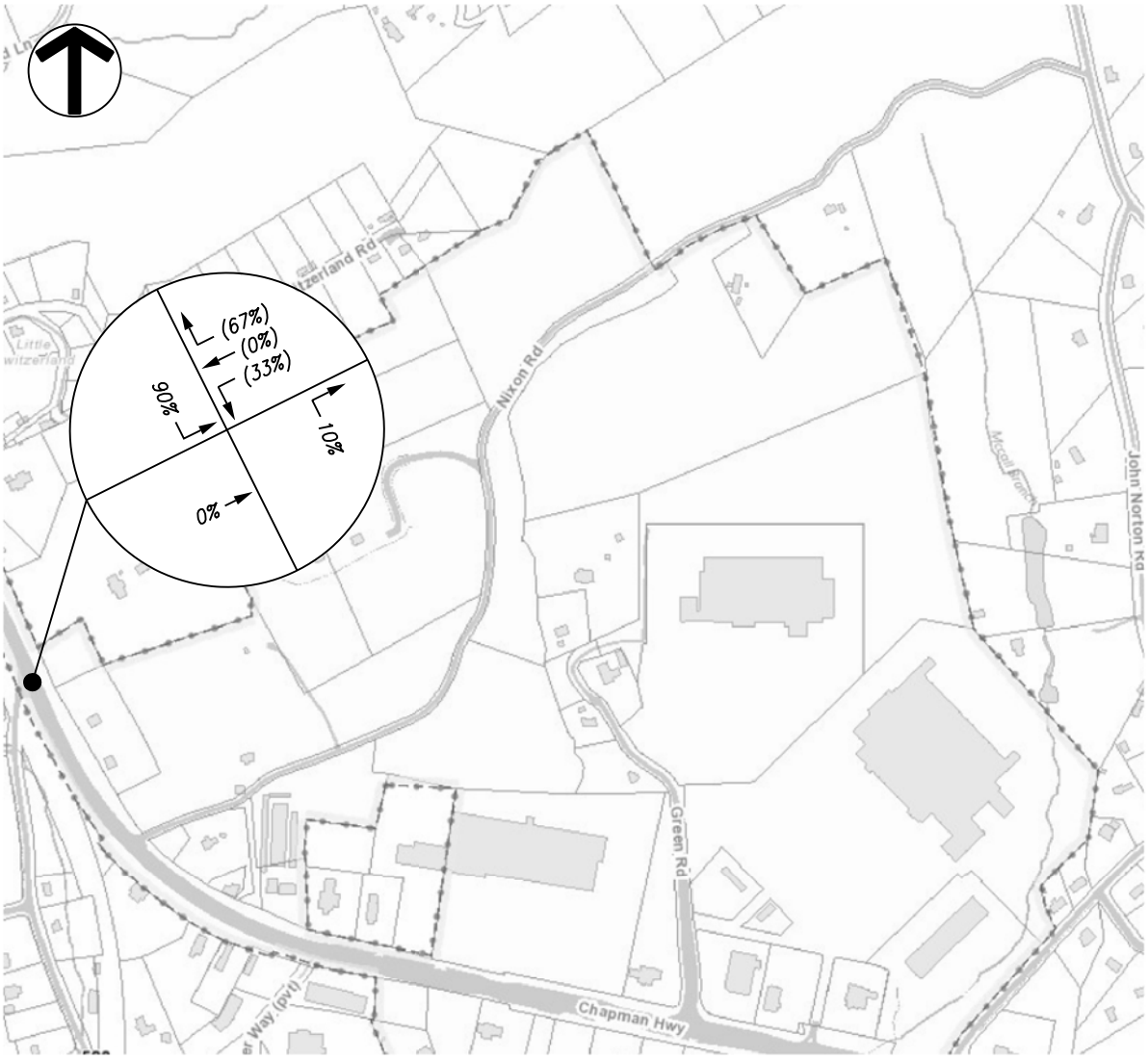
The amphitheater will have approximately 550 seats and is expected to be used as a gathering place for hotel guests and seating for on-site weddings. At this time any special events that will be scheduled for the amphitheater are planned to occur on the weekends and will not interfere with weekday peak hour traffic.

Chapman Highway (SR 71) at the intersection with Nixon Road has a trip distribution of 65% northbound and 35% southbound during the AM peak hour and 50% northbound and 50% southbound during the PM peak hour.

The directional distribution of the traffic generated by the Ancient Lore Village was determined using the existing traffic volumes at the intersection of Chapman Highway (SR 71) at W Dick Ford Lane. It was assumed that the exiting traffic would be 67% northbound and 33% southbound during the AM peak and 50% northbound and 50% southbound during the PM peak hour. The entering traffic will be predominately from downtown Knoxville at 10% northbound and 90% southbound during both the AM and PM peak hours.

Figure 5 shows the AM peak hour trip distribution and Figure 6 shows the PM peak hour trip distribution.

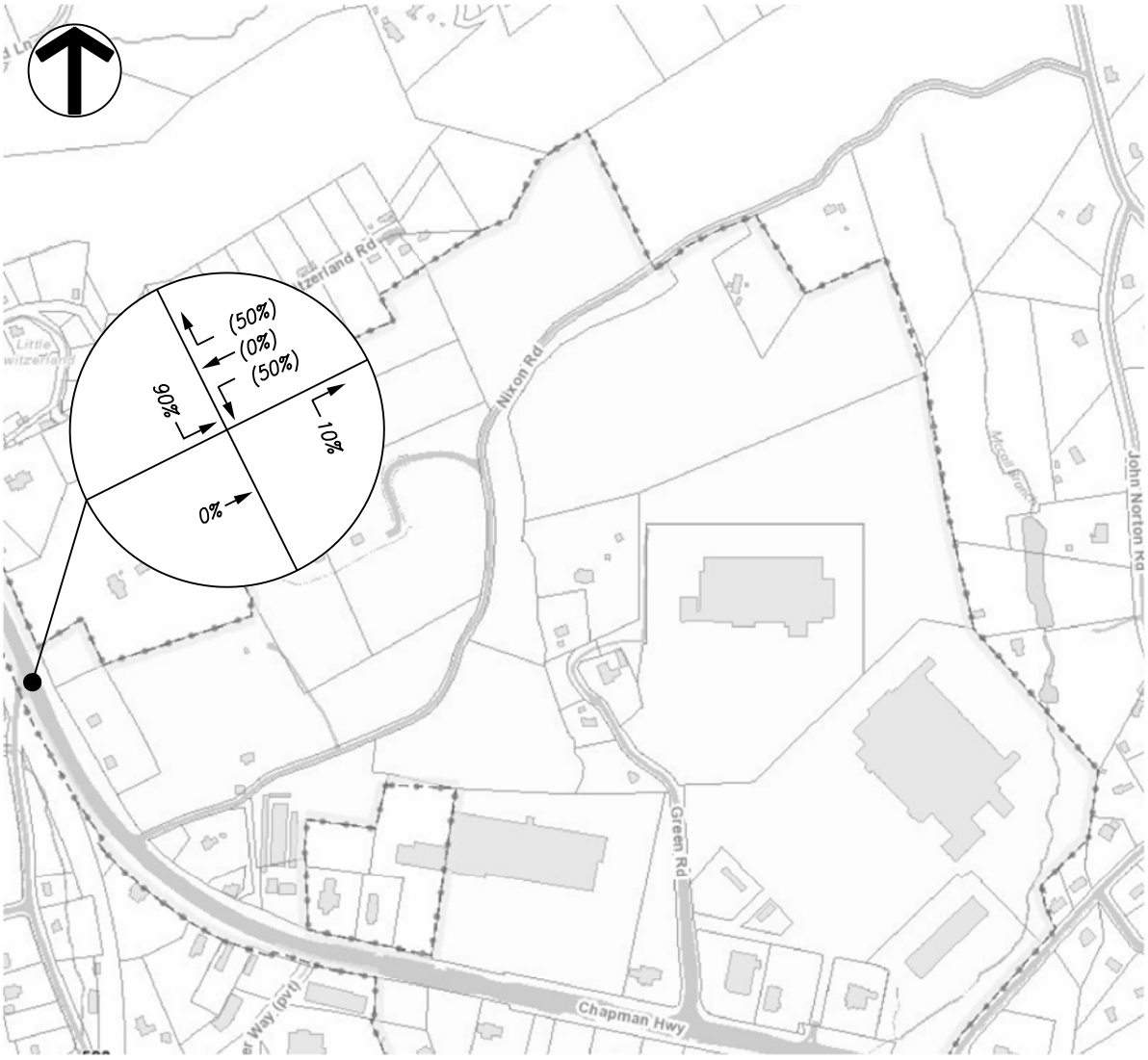
Figure 7 shows the peak hour site traffic from the development and Figure 8 shows the peak hour full buildout traffic.



LEGEND:

← 50% (50%) TRIP DISTRIBUTION ENTERING (EXITING)

Figure 5: AM Peak Hour Trip Distribution



LEGEND:

← 50% (50%) TRIP DISTRIBUTION ENTERING (EXITING)

Figure 6: PM Peak Hour Trip Distribution

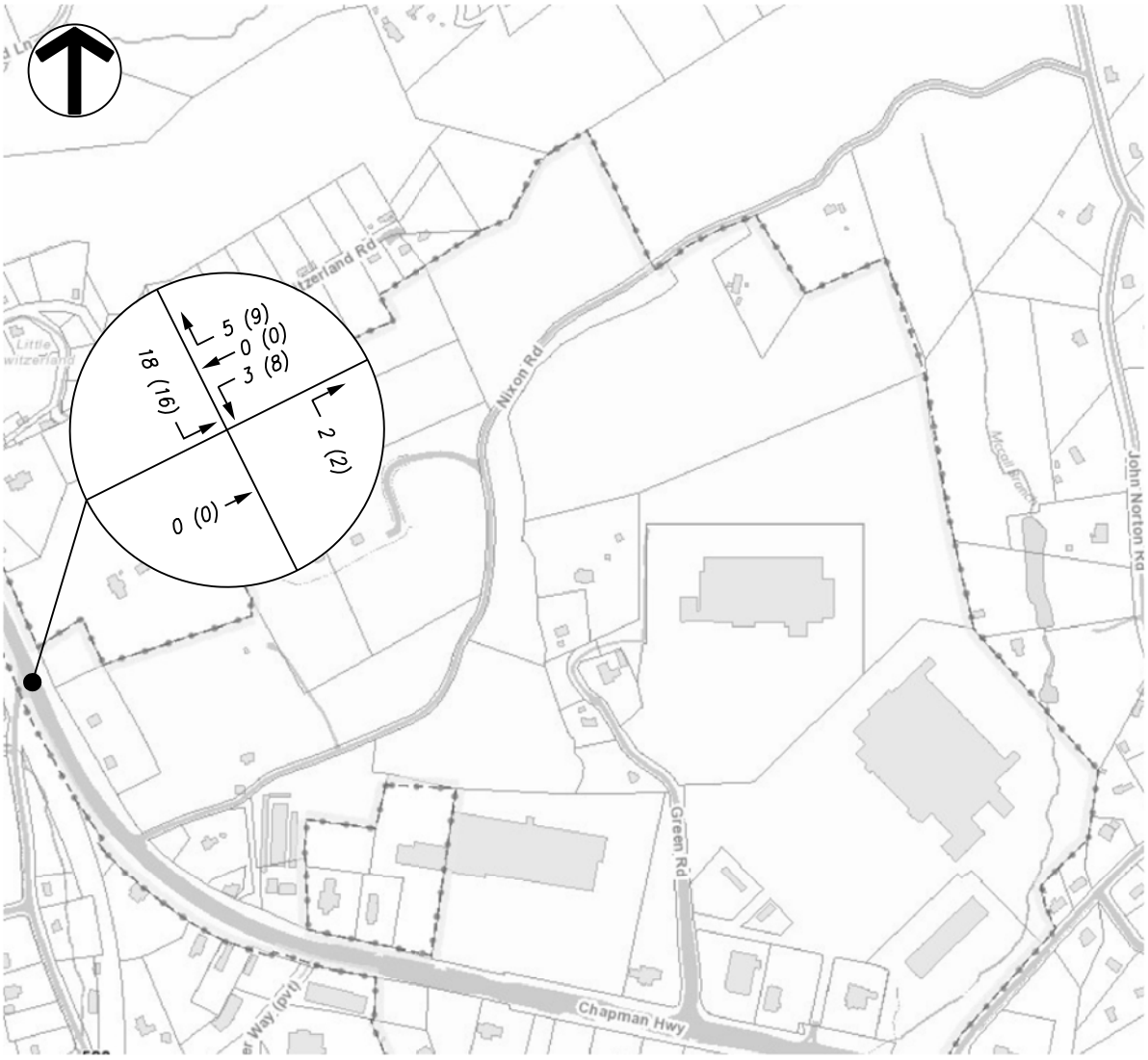


Figure 7: Peak Hour Site Traffic

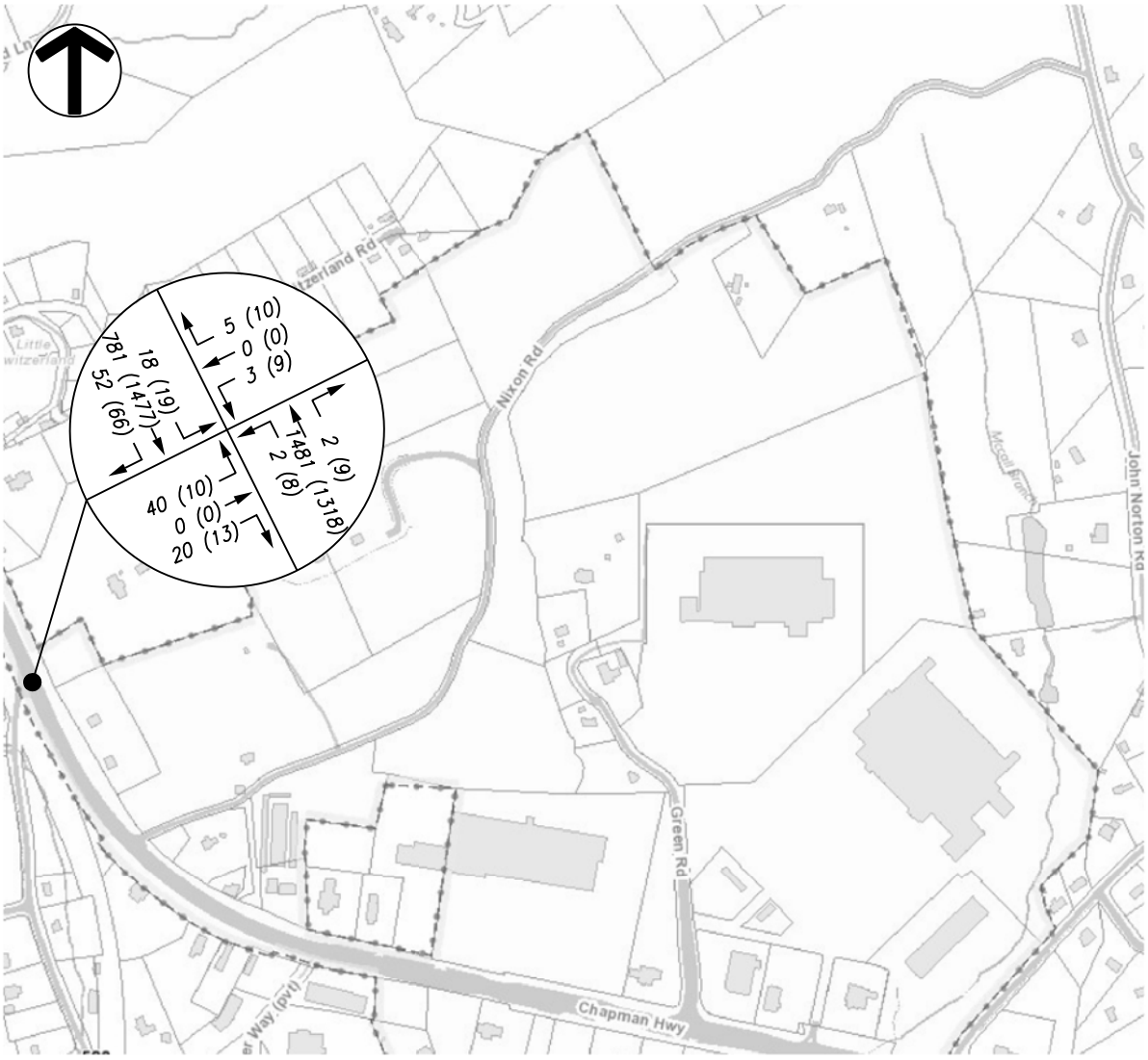


Figure 8: Peak Hour Full Buildout Traffic

5 Projected Capacity and Level of Service

Unsignalized intersection capacity analyses were performed using the Highway Capacity Software (HCS7) for the AM and PM peak hours to evaluate the traffic conditions at the intersections of Chapman Highway (SR 71) at Nixon Road, Chapman Highway (SR 71) at W Dick Ford Lane and Sevierville Pike at Nixon Road for the existing and background conditions.

Prior to the completion of the Ancient Lore Village the existing intersection of Chapman Highway (SR 71) at Nixon Road will be realigned to intersect with W Dick Ford Lane. The proposed new intersection of Chapman Highway (SR 71) at W Dick Ford Lane/Nixon Road will be signalized.

Signalized intersection capacity analyses were performed using Highway Capacity Software (HCS7) at the proposed intersection of Chapman Highway (SR 71) at Nixon Road/Dick Ford Lane. Optimized signal timing was assumed for the full buildout conditions.

The results from the analyses are expressed with a term "level of service" (LOS), which is based on the amount of delay experienced at the intersection. The LOS index ranges from LOS A, indicating excellent traffic conditions with minimal delay, to LOS F indicating very congested conditions with excessive delay. LOS D generally is considered the minimum acceptable condition in urban areas. The existing, background and full buildout HCS7 worksheets are included in Attachments 5, 6 and 7.

Table 5-1 shows the results of the capacity analyses.

Table 5-1
Intersection Analysis - Level of Service (LOS) Summary

		Delay (sec)/LOS
Chapman Highway (SR 71) @ Nixon Road (Existing 2019)		
AM Peak	WB Approach	5.0 / A
	SB Approach	13.5 / B
PM Peak	WB Approach	49.9 / E
	SB Approach	12.1 / B

Chapman Highway (SR 71) @ W Dick Ford Lane (Existing 2019)		
AM Peak	EB Approach	119.4 / F
	NB Approach	10.2 / B
PM Peak	EB Approach	141.2 / F
	NB Approach	15.5 / C
Sevierville Pike @ Nixon Road (Existing 2019)		
AM Peak	EB Approach	9.2 / A
	NB Approach	7.4 / A
PM Peak	EB Approach	9.5 / A
	NB Approach	7.6 / A
Chapman Highway (SR 71) @ Nixon Road (Background 2022)		
AM Peak	WB Approach	5.0 / A
	SB Approach	13.8 / B
PM Peak	WB Approach	54.3 / F
	SB Approach	12.3 / B
Chapman Highway (SR 71) @ W Dick Ford Lane (Background 2022)		
AM Peak	EB Approach	145.2 / F
	NB Approach	10.4 / B
PM Peak	EB Approach	170.8 / F
	NB Approach	16.1 / C
Sevierville Pike @ Nixon Road (Background 2022)		
AM Peak	EB Approach	9.2 / A
	NB Approach	7.4 / A
PM Peak	EB Approach	9.5 / A
	NB Approach	7.6 / A
Chapman Highway (SR 71) @ Nixon Road (Full Buildout 2022)		
AM Peak	Intersection	7.2 / A
PM Peak	Intersection	8.1 / A

6 Turn Lane Warrant Analysis

The intersection of Sevierville Pike at the proposed employee parking access Road was evaluated to determine if a northbound left turn lane or a southbound right turn lane is warranted. The Knox County Department of Engineering and Public Works handbook, "Access Control and Driveway Design Policy," was used to analyze the information.

Neither a right turn lane nor a left turn lane are warranted at the intersection of Sevierville Pike at the employee access driveway. The turn lane warrant worksheets and analysis are included in Attachment 8.

7 Conclusions and Recommendations

7.1 Chapman Highway (SR 71) @ W Dick Ford Lane

The existing traffic conditions at the unsignalized intersection of Chapman Highway (SR 71) at W Dick Ford Lane were analyzed using the Highway Capacity Software (HCS7). The eastbound approach will operate at a LOS F during both the AM and PM peak hours and the northbound approach will operate at a LOS B during the AM peak hour and LOS C during the PM peak hour.

The background traffic conditions at the unsignalized intersection of Chapman Highway (SR 71) at Dick Ford Lane were analyzed using the Highway Capacity Software (HCS7). The eastbound approach will operate at a LOS F during both the AM and PM peak hours and the northbound approach will operate at a LOS B during the AM peak hour and LOS C during the PM peak hour.

Prior to the completion of the Ancient Lore Village the existing intersection of Chapman Highway (SR 71) at Nixon Road will be realigned to intersect with W Dick Ford Lane. Signal timing and roadway alignment to be coordinated with the City of Knoxville and Tennessee Department of Transportation.

The full buildout conditions at the signalized intersection of Chapman Highway (SR 71) at Nixon Road/W Dick Ford Lane were analyzed using the Highway Capacity Software (HCS7). The intersection will operate at a LOS A during both the AM and PM peak hours using optimized signal timing.

At signalized intersections the recommended sight distance per AASHTO "Geometric Design of Highways and Streets" is that the "first vehicle stopped on one approach

should be visible to the driver of the first vehicle stopped on each of the other approaches" and that "left-turning vehicles should have sufficient sight distance to select gaps in oncoming traffic and complete left turns."

FMA recommends any landscaping be installed so as to maintain the sight distance and continue to comply with TDOT standards.

7.2 Chapman Highway (SR 71) @ Nixon Road

The existing traffic conditions at the unsignalized intersection of Chapman Highway (SR 71) at Nixon Road were analyzed using the Highway Capacity Software (HCS7). The southbound approach will operate at a LOS B during both the AM and PM peak hours and the westbound approach will operate at a LOS A during the AM peak hour and LOS E during the PM peak hour.

The background traffic conditions at the unsignalized intersection of Chapman Highway (SR 71) at Nixon Road were analyzed using the Highway Capacity Software (HCS7). The southbound approach will operate at a LOS B during both the AM and PM peak hours and the westbound approach will operate at a LOS A during the AM peak hour and a LOS F during the PM peak hour.

Prior to the completion of the Ancient Lore Village the existing intersection of Chapman Highway (SR 71) at Nixon Road will be realigned to intersect with W Dick Ford Lane.

7.3 Sevierville Pike @ Employee Parking Access

The minimum required sight distance for a road with a posted speed limit of 40 mph is 400 feet in each direction in accordance with the "Subdivision Regulations" for Knoxville and Knox County. The existing landscaping within the right-of-way along Sevierville Pike will need to be modified in order to achieve a sight distance of 400 feet in each direction. FMA recommends the sight distance be verified in the field after the completion of the Ancient Lore Village and that any necessary landscaping be installed to maintain the sight distance and comply with Knox County standards.

7.4 Sevierville Pike @ Nixon Road

The existing traffic conditions at the unsignalized intersection of Sevierville Pike at Nixon Road were analyzed using the Highway Capacity Software (HCS7). The eastbound approach will operate at a LOS A during both the AM and PM peak hours and the southbound approach will operate at a LOS A during both the AM and PM peak hours.

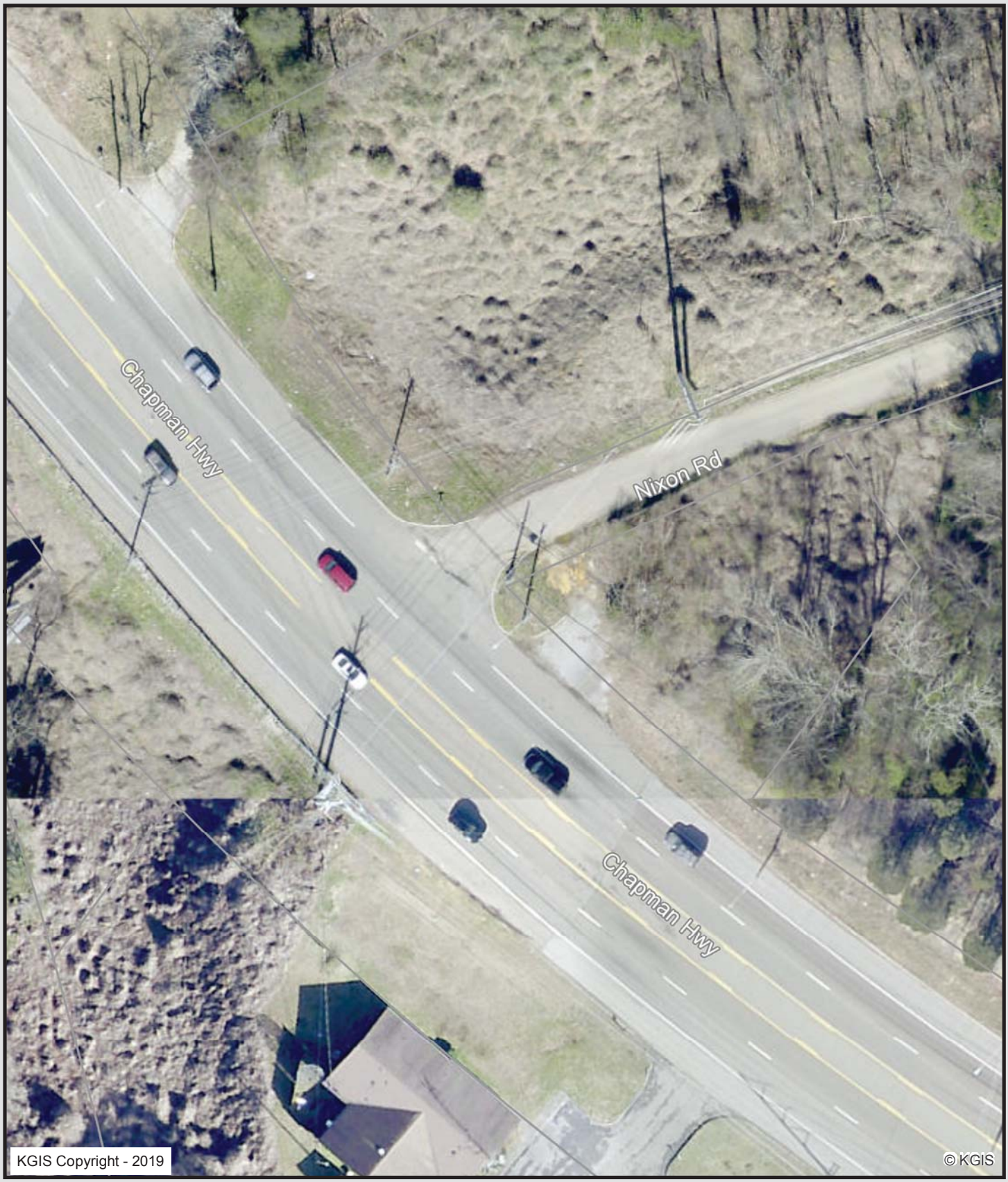
The background traffic conditions at the unsignalized intersection of Sevierville Pike at Nixon Road were analyzed using the Highway Capacity Software (HCS7). The eastbound approach will operate at a LOS A during both the AM and PM peak hours and the southbound approach will operate at a LOS A during both the AM and PM peak hours.

After the completion of the Ancient Lore Village the intersection of Sevierville Pike at Nixon Road will be closed to through traffic.

7.5 Nixon Road

The existing width of Nixon Road between the intersection with Chapman Highway (SR 71) and Sevierville Pike varies between 15 feet to 19 feet. The existing conditions of Nixon Road do not meet the current minimum City of Knoxville and Knox County roadway standards. Improvements on Nixon Road between Chapman Highway (SR 71) and Sevierville Pike including road widening, striping plan, etc. need to be coordinated with both the City of Knoxville and Knox County Engineering and Public Works.

Attachment 1
Aerial Photo



Chapman Hwy at Nixon Rd

Printed: 1/28/2019 at 11:39:09 AM

0 25 50 100

ft

Knoxville - Knox County - KUB Geographic Information System

Sevierville Pike at Nixon Rd

Knoxville - Knox County - KUB Geographic Information System

Printed: 1/28/2019 at 11:43:18 AM

0 25 50 100

ft

Chapman Hwy at W Dick Ford Lane

Knoxville - Knox County - KUB Geographic Information System

Printed: 8/19/2019 at 8:45:35 PM

0 25 50 100

ft

Attachment 2
Traffic Counts

Project: Ancient Lore Village at Boyd Hollow
Intersection: Chapman Highway at Nixon Road
Date Conducted: 2/13/2019

	Chapman Highway Northbound			Chapman Highway Southbound			Nixon Road Westbound			
Start	Thru	Right	Total	Left	Thru	Total	Left	Right	Total	Int. Total
7:00 AM	328	0	328	0	156	156	0	0	0	484
7:15 AM	372	0	372	0	180	180	0	0	0	552
7:30 AM	409	0	409	0	188	188	0	0	0	597
7:45 AM	339	0	339	0	213	213	0	0	0	552
Total	1448	0	1448	0	737	737	0	0	0	2185
8:00 AM	319	0	319	0	196	196	0	0	0	515
8:15 AM	279	0	279	0	218	218	0	0	0	497
8:30 AM	226	0	226	0	187	187	0	0	0	413
8:45 AM	177	0	177	0	148	148	0	0	0	325
Total	1001	0	1001	0	749	749	0	0	0	1750
2:00 PM	233	0	233	0	232	232	1	0	1	466
2:15 PM	217	2	219	0	266	266	0	0	0	485
2:30 PM	192	1	193	2	239	241	0	0	0	434
2:45 PM	227	1	228	0	209	209	1	1	2	439
Total	869	4	873	2	946	948	2	1	3	1824
3:00 PM	260	0	260	1	304	305	0	1	1	566
3:15 PM	263	0	263	1	279	280	0	1	1	544
3:30 PM	262	0	262	1	292	293	0	1	1	556
3:45 PM	303	0	303	1	306	307	1	0	1	611
Total	1088	0	1088	4	1181	1185	1	3	4	2277
4:00 PM	256	1	257	1	357	358	1	0	1	616
4:15 PM	262	0	262	0	308	308	0	1	1	571
4:30 PM	281	0	281	0	339	339	0	0	0	620
4:45 PM	322	1	323	0	344	344	0	0	0	667
Total	1121	2	1123	1	1348	1349	1	1	2	2474
5:00 PM	325	4	329	1	369	370	1	1	2	701
5:15 PM	315	2	317	2	348	350	0	0	0	667
5:30 PM	324	0	324	0	382	382	0	0	0	706
5:45 PM	269	2	271	0	333	333	0	0	0	604
Total	1233	8	1241	3	1432	1435	1	1	2	2678
Grand Total	6760	14	6774	10	6393	6403	5	6	11	13188
Approach %	99.8	0.2		0.2	99.8		45.5	54.5		
Total %	51.3	0.1	51.4	0.1	48.5	48.6	0.0	0.0	0.1	

Project: Ancient Lore Village at Boyd Hollow
Date Conducted: 2/13/2019

AM Peak Hour	7:15 AM - 8:15 AM	2216
PM Peak Hour	4:45 PM - 5:45 PM	2741

	Chapman Highway Northbound			Chapman Highway Southbound			Nixon Road Westbound			
Start	Thru	Right	Total	Left	Thru	Total	Left	Right	Total	Int. Total
Peak Hour Analysis from 7:00 AM to 9:00 AM										
AM Peak Hour begins at 7:15 AM										
7:15 AM	372	0	372	0	180	180	0	0	0	552
7:30 AM	**409**	0	409	0	188	188	0	0	0	**597**
7:45 AM	339	0	339	0	**213**	213	**0**	**0**	0	552
8:00 AM	319	0	319	0	196	196	0	0	0	515
Total Volume	1439	0	1439	0	777	777	0	0	0	2216
Future (1% over 3 yrs)	1483	0		0	801		0	0		2283
PHF	0.88	-		-	0.91		-	-		0.93
Peak Hour Analysis from 2:30 PM to 6:00 PM										
PM Peak Hour begins at 5:00 PM										
4:45 PM	322	1	323	0	344	344	0	0	0	667
5:00 PM	**325**	**4**	329	1	369	370	**1**	**1**	2	701
5:15 PM	315	2	317	**2**	348	350	0	0	0	667
5:30 PM	324	0	324	0	**382**	382	0	0	0	**706**
Total Volume	1286	7	1293	3	1443	1446	1	1	2	2741
Future (1% over 3 yrs)	1325	7		3	1487		1	1		2824
PHF	0.99	0.44		0.38	0.94		0.25	0.25		0.97

Project: Ancient Lore Village at Boyd Hollow
Intersection: Sevierville Pike at Nixon Road
Date Conducted: 3/6/2019

	Sevierville Pike Southbound			Sevierville Pike Northbound			Nixon Road Eastbound			
Start	Thru	Right	Total	Left	Thru	Total	Left	Right	Total	Int. Total
7:00 AM	2	0	2	0	4	4	0	0	0	6
7:15 AM	13	0	13	0	19	19	1	0	1	33
7:30 AM	20	0	20	0	31	31	0	0	0	51
7:45 AM	16	0	16	0	16	16	1	0	1	33
Total	51	0	51	0	70	70	2	0	2	123
8:00 AM	11	0	11	0	7	7	0	0	0	18
8:15 AM	6	0	6	2	12	14	0	0	0	20
8:30 AM	9	0	9	0	10	10	0	0	0	19
8:45 AM	8	0	8	0	6	6	1	0	1	15
Total	34	0	34	2	35	37	1	0	1	72
2:00 PM	12	0	12	4	9	13	0	0	0	25
2:15 PM	6	0	6	0	10	10	0	2	2	18
2:30 PM	12	1	13	0	9	9	0	0	0	22
2:45 PM	11	0	11	0	8	8	0	1	1	20
Total	41	1	42	4	36	40	0	3	3	85
3:00 PM	9	0	9	1	14	15	0	0	0	24
3:15 PM	13	0	13	0	14	14	0	0	0	27
3:30 PM	11	0	11	0	13	13	0	2	2	26
3:45 PM	24	1	25	2	12	14	2	0	2	41
Total	57	1	58	3	53	56	2	2	4	118
4:00 PM	32	0	32	0	10	10	1	1	2	44
4:15 PM	19	0	19	0	9	9	0	1	1	29
4:30 PM	25	1	26	1	17	18	1	3	4	48
4:45 PM	35	0	35	0	6	6	1	3	4	45
Total	111	1	112	1	42	43	3	8	11	166
5:00 PM	34	1	35	0	14	14	0	1	1	50
5:15 PM	50	0	50	0	16	16	1	0	1	67
5:30 PM	31	0	31	0	8	8	0	0	0	39
5:45 PM	23	1	24	0	15	15	1	0	1	40
Total	138	2	140	0	53	53	2	1	3	196
Grand Total	432	5	437	10	289	299	10	14	24	760
Approach %	98.9	1.1		3.3	96.7		41.7	58.3		
Total %	56.8	0.7	57.5	1.3	38.0	39.3	1.3	1.8	3.2	

Project: Ancient Lore Village at Boyd Hollow
Date Conducted: 3/6/2019

AM Peak Hour	7:15 AM - 8:15 AM	137
PM Peak Hour	4:30 PM - 5:30 PM	210

	Sevierville Pike Southbound			Sevierville Pike Northbound			Nixon Road Eastbound			
Start	Thru	Right	Total	Left	Thru	Total	Left	Right	Total	Int. Total
Peak Hour Analysis from 7:00 AM to 9:00 AM										
AM Peak Hour begins at 7:15 AM										
7:15 AM	13	0	13	0	19	19	1	1	2	34
7:30 AM	**20**	0	**20**	0	**31**	**31**	0	0	0	**51**
7:45 AM	16	0	16	0	16	16	**1**	**1**	**2**	34
8:00 AM	11	0	11	0	7	7	0	0	0	18
Total Volume	60	0	60	0	73	73	2	2	4	137
Future (1% over 3 yrs)	62	0		0	75		2	2		141
PHF	0.75	-		-	0.59		0.50	0.50		0.67
Peak Hour Analysis from 2:30 PM to 6:00 PM										
PM Peak Hour begins at 4:30 PM										
4:30 PM	25	1	26	**1**	**17**	**18**	1	**3**	**4**	48
4:45 PM	35	0	35	0	6	6	1	3	4	45
5:00 PM	34	**1**	35	0	14	14	0	1	1	50
5:15 PM	**50**	0	**50**	0	16	16	**1**	0	1	**67**
Total Volume	144	2	146	1	53	54	3	7	10	210
Future (1% over 3 yrs)	148	2		1	55		3	7		216
PHF	0.72	0.50		0.25	0.78		0.75	0.58		0.78

Project: Ancient Lore Village at Boyd Hollow
Intersection: Chapman Highway at Nixon Road
Date Conducted: 8/20/2019

	Chapman Highway Northbound			Chapman Highway Southbound			W Dick Ford Lane Westbound			
Start	Left	Thru	Total	Thru	Right	Total	Left	Right	Total	Int. Total
7:00 AM	1	-	1	-	1	1	11	4	15	17
7:15 AM	0	-	0	-	8	8	13	5	18	26
7:30 AM	0	-	0	-	10	10	9	3	12	22
7:45 AM	1	-	1	-	13	13	8	6	14	28
Total	2	-	2	-	32	32	41	18	59	93
8:00 AM	1	-	1	-	19	19	9	5	14	34
8:15 AM	1	-	1	-	9	9	6	8	14	24
8:30 AM	0	-	0	-	8	8	7	6	13	21
8:45 AM	0	-	0	-	4	4	4	2	6	10
Total	2	-	2	-	40	40	26	21	47	89
4:00 PM	1	-	1	-	13	13	3	1	4	18
4:15 PM	1	-	1	-	12	12	1	2	3	16
4:30 PM	2	-	2	-	12	12	4	2	6	20
4:45 PM	3	-	3	-	20	20	3	2	5	28
Total	7	-	7	-	57	57	11	7	18	82
5:00 PM	1	-	1	-	15	15	1	3	4	20
5:15 PM	1	-	1	-	14	14	4	5	9	24
5:30 PM	3	-	3	-	15	15	2	3	5	23
5:45 PM	1	-	1	-	22	22	5	0	5	28
Total	6	-	6	-	66	66	12	11	23	95
Grand Total	17	-	17	-	195	195	90	57	147	359
Approach %	100.0	-		-	100.0		61.2	38.8		
Total %	4.7	-	4.7	-	54.3	54.3	25.1	15.9	40.9	

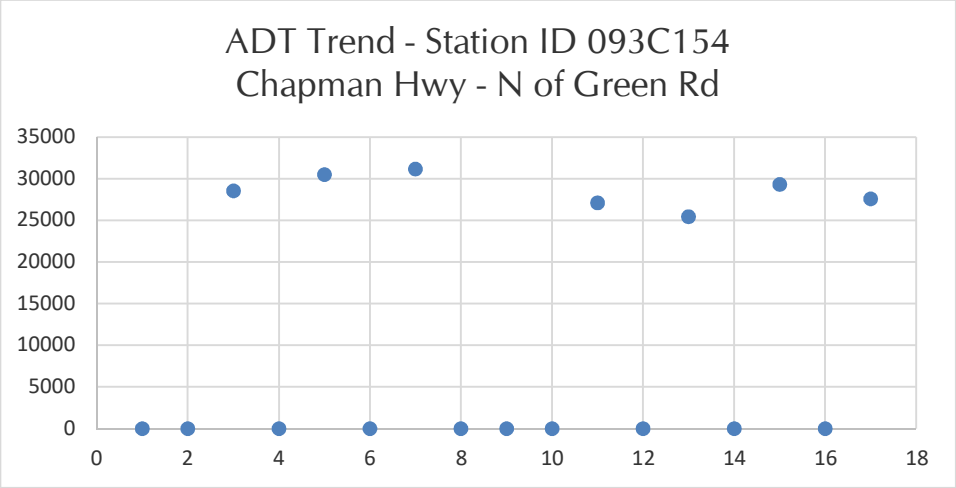
Project: Ancient Lore Village at Boyd Hollow
Date Conducted: 8/20/2019

AM Peak Hour	7:15 AM - 8:15 AM	110
PM Peak Hour	4:45 PM - 5:45 PM	95

	Chapman Highway Northbound			Chapman Highway Southbound			W Dick Ford Lane Westbound			
Start	Left	Thru	Total	Thru	Right	Total	Left	Right	Total	Int. Total
Peak Hour Analysis from 7:00 AM to 9:00 AM										
AM Peak Hour begins at 7:15 AM										
7:15 AM	0	-	0	-	8	8	**13**	5	18	26
7:30 AM	0	-	0	-	10	10	9	3	12	22
7:45 AM	**1**	-	1	-	13	13	8	**6**	14	28
8:00 AM	1	-	1	-	**19**	19	9	5	14	**34**
Total Volume	2	-	2	-	50	50	39	19	58	110
Future (1% over 3 yrs)	2	-		-	52		40	20		113
PHF	0.50	-		-	0.66		0.75	0.79		0.81
Peak Hour Analysis from 2:30 PM to 6:00 PM										
PM Peak Hour begins at 4:45 PM										
4:45 PM	**3**	-	3	-	**20**	20	3	2	5	**28**
5:00 PM	1	-	1	-	15	15	1	3	4	20
5:15 PM	1	-	1	-	14	14	**4**	**5**	9	24
5:30 PM	3	-	3	-	15	15	2	3	5	23
Total Volume	8	-	8	-	64	64	10	13	23	95
Future (1% over 3 yrs)	8	-		-	66		10	13		98
PHF	0.67	-		-	0.80		0.63	0.65		0.85

Attachment 3
ADT Trends

Year	Adjusted Average Daily Traffic
2001	0
2002	0
2003	28549
2004	0
2005	30502
2006	0
2007	31141
2008	0
2009	0
2010	0
2011	27090
2012	0
2013	25450
2014	0
2015	29320
2016	0
2017	27580

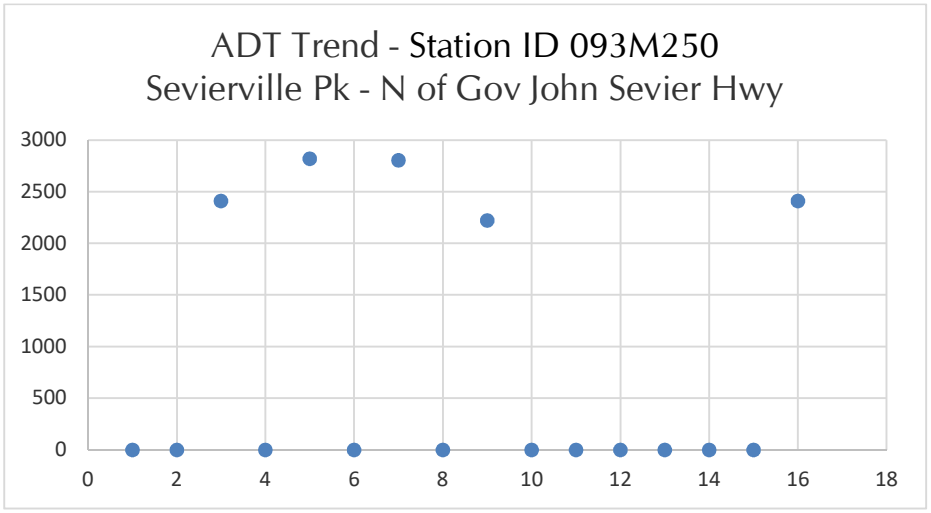


Most Recent Trend Line Growth

Year	ADT
2007	31141
2017	27580

Annual Percent Growth	**-1.14%**

Year	Adjusted Average Daily Traffic
2001	0
2002	0
2003	2410
2004	0
2005	2820
2006	0
2007	2805
2008	0
2009	2223
2010	0
2011	0
2012	0
2013	0
2014	0
2015	0
2016	2410

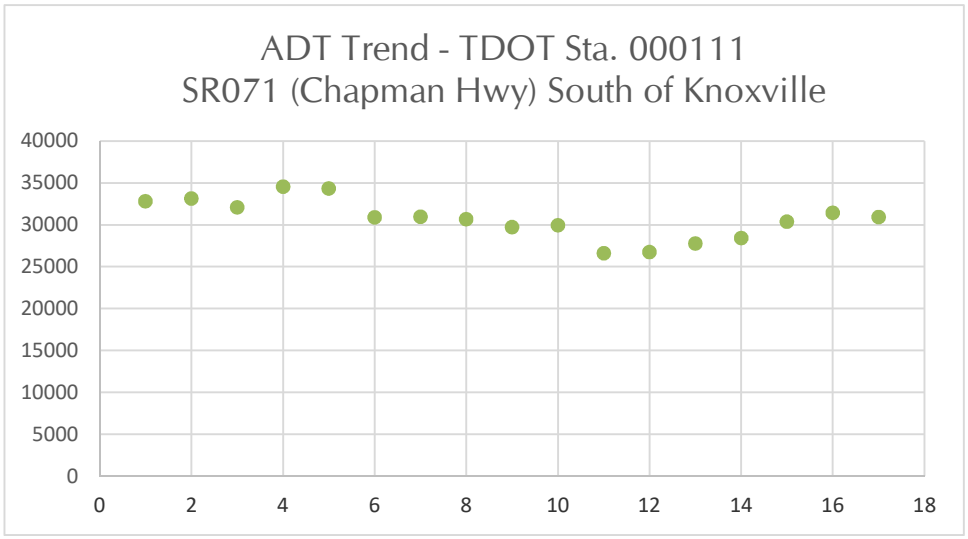


Most Recent Trend Line Growth

Year	ADT
2009	2223
2016	2410

Annual Percent Growth	**1.20%**

Year	Adjusted Average Daily Traffic
2001	32816
2002	33145
2003	32083
2004	34551
2005	34338
2006	30895
2007	30946
2008	30672
2009	29714
2010	29966
2011	26620
2012	26764
2013	27768
2014	28414
2015	30379
2016	31449
2017	30935



Most Recent Trend Line Growth

Year	ADT
2007	30946
2017	30935

Annual Percent Growth	**0.00%**

Attachment 4
Trip Generation

Project: Ancient Lore Village at Boyd Hollow
Date Conducted: 1/21/2019

(LUC 310) Hotel
150 Rooms

Average Daily Traffic
T = 11.29(X) - 426.97
T = 11.29(150) - 426.97
T = 1267

(LUC 330) Resort Hotel
150 Rooms

Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.
T = 0.38(X) - 28.58
T = 0.38(150) - 28.58
T = 28

Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.
T = 0.52(X) - 55.42
T = 0.52(150) - 55.42
T = 23

Time Period	Total Trips	Percent		Number	
		Enter	Exit	Enter	Exit
Weekday (24 hours)	1267	50%	50%	634	634
AM Peak Hour	28	72%	28%	20	8
PM Peak Hour	23	43%	57%	10	13

Project: Ancient Lore Village at Boyd Hollow
Date Conducted: 8/19/2019

(LUC 931) Quality Restaurant
175 Seats

Average Daily Traffic
T = 3.90 (X) - 447.07
T = 3.90 (175) - 447.07
T = 235

Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.
Average Rate = 0.28
T = 0.28 * (175)
T = 49

Total Trips

Time Period	Total Trips	Percent		Number	
		Enter	Exit	Enter	Exit
Weekday (24 hours)	235	50%	50%	118	118
PM Peak Hour	49	67%	33%	33	16

25% New Trips

Time Period	Total Trips	Percent		Number	
		Enter	Exit	Enter	Exit
Weekday (24 hours)	59	50%	50%	29	29
PM Peak Hour	12	67%	33%	8	4

75% Internal Trips

Time Period	Total Trips	Percent		Number	
		Enter	Exit	Enter	Exit
Weekday (24 hours)	176	50%	50%	88	88
PM Peak Hour	37	67%	33%	25	12

Quality Restaurant
(931)

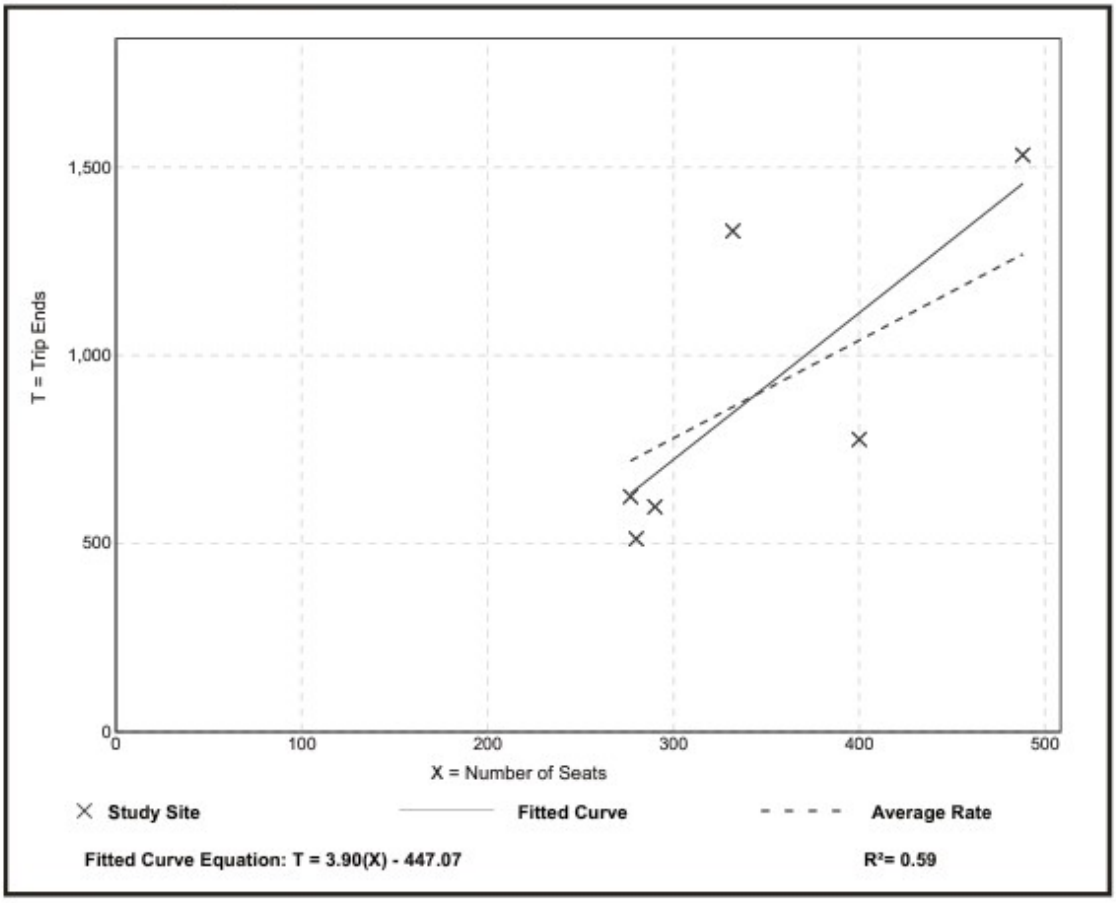
Vehicle Trip Ends vs: **Seats**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Seats: 345
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Seat

Average Rate	Range of Rates	Standard Deviation
2.60	1.83 - 4.01	0.85

Data Plot and Equation



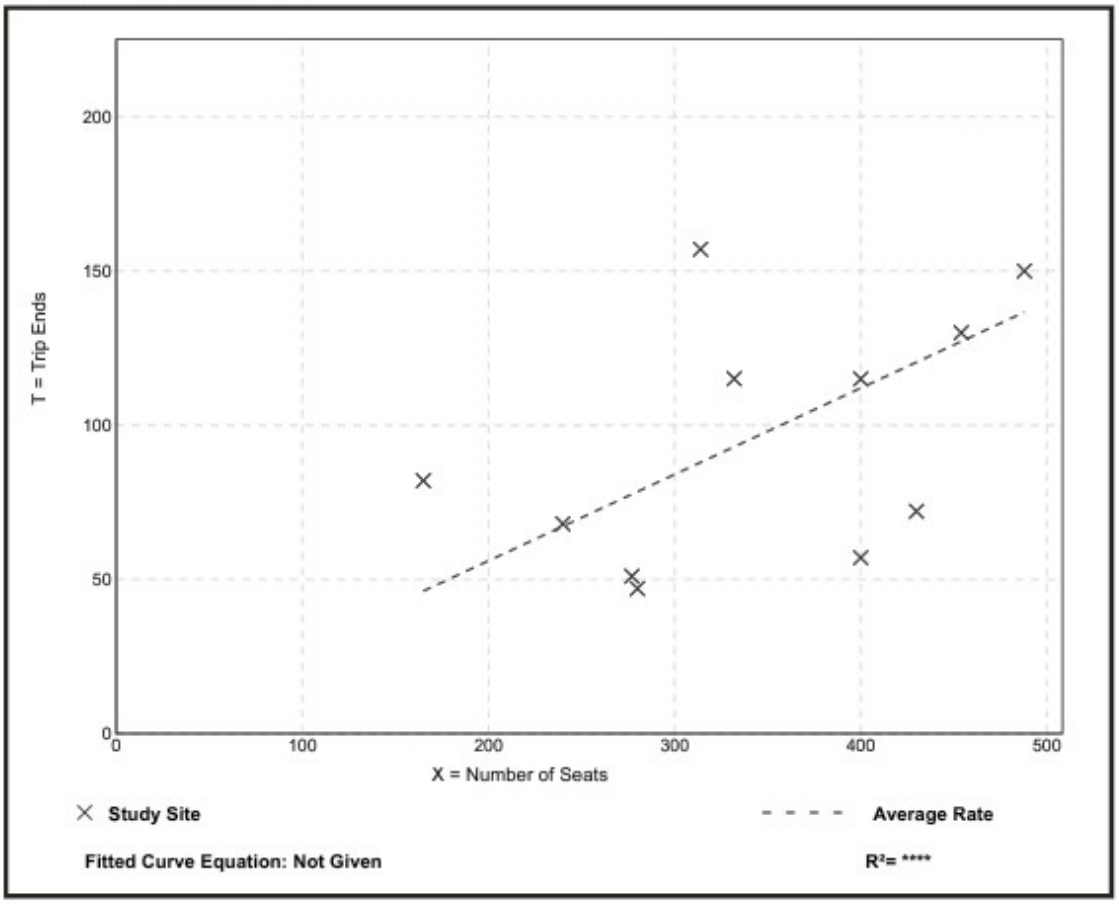
Quality Restaurant
(931)

Vehicle Trip Ends vs:	**Seats**
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:	11
Avg. Num. of Seats:	344
Directional Distribution:	67% entering, 33% exiting

Vehicle Trip Generation per Seat

Average Rate	Range of Rates	Standard Deviation
0.28	0.14 - 0.50	0.11

Data Plot and Equation



Hotel
(310)

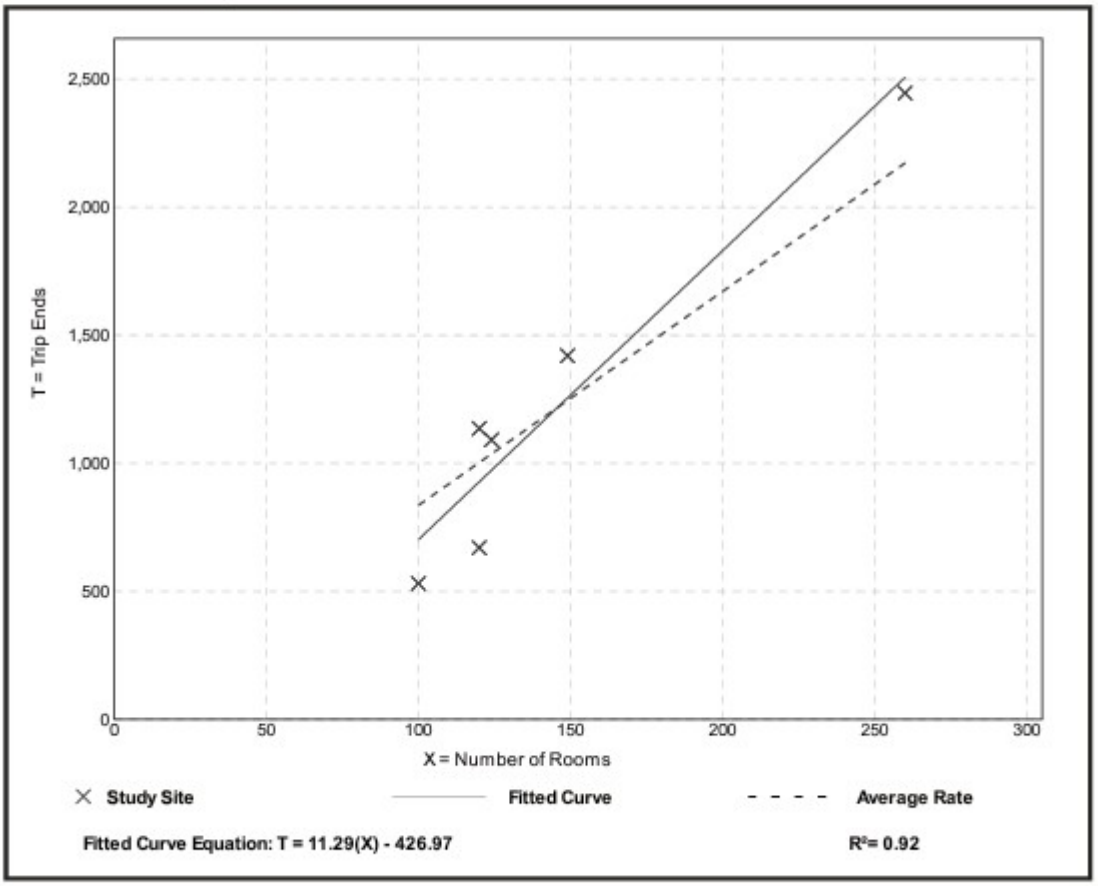
Vehicle Trip Ends vs: **Rooms**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. Num. of Rooms: 146
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.36	5.31 - 9.53	1.86

Data Plot and Equation



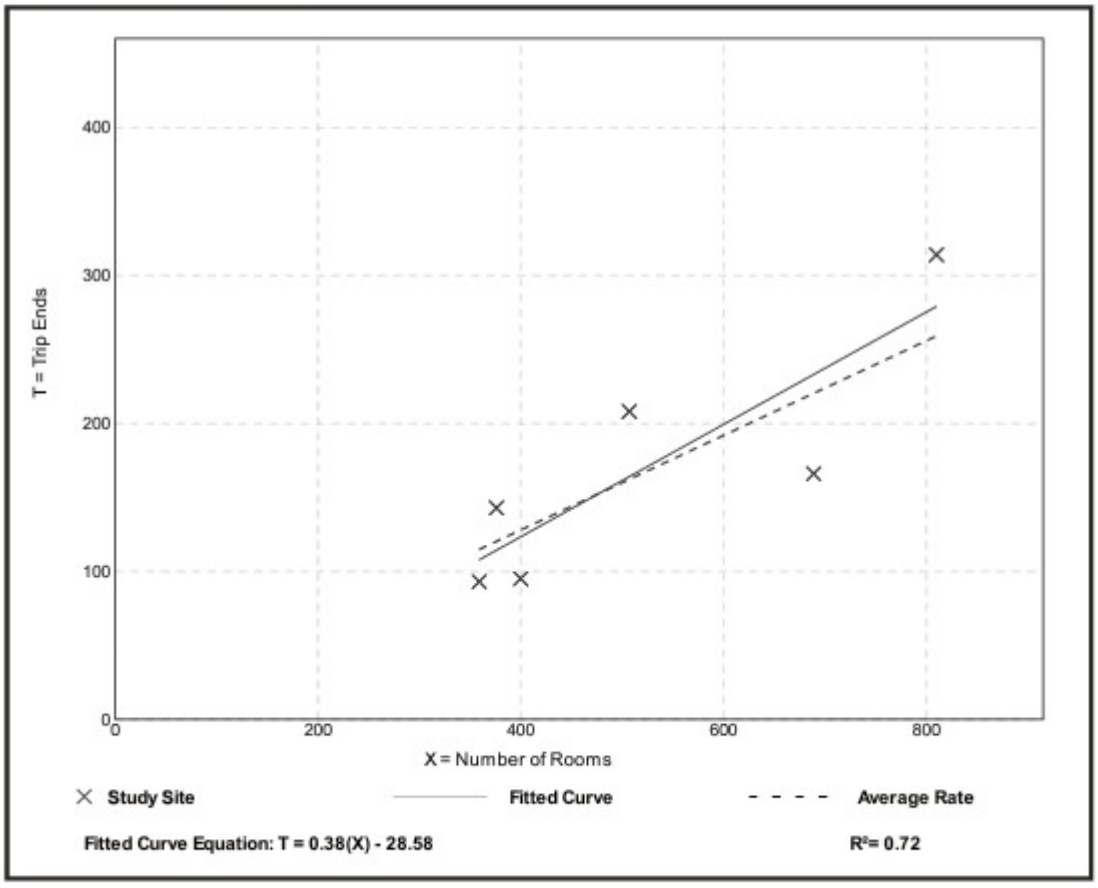
Resort Hotel
(330)

Vehicle Trip Ends vs:	**Rooms**
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:	6
Avg. Num. of Rooms:	524
Directional Distribution:	72% entering, 28% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.32	0.24 - 0.41	0.08

Data Plot and Equation



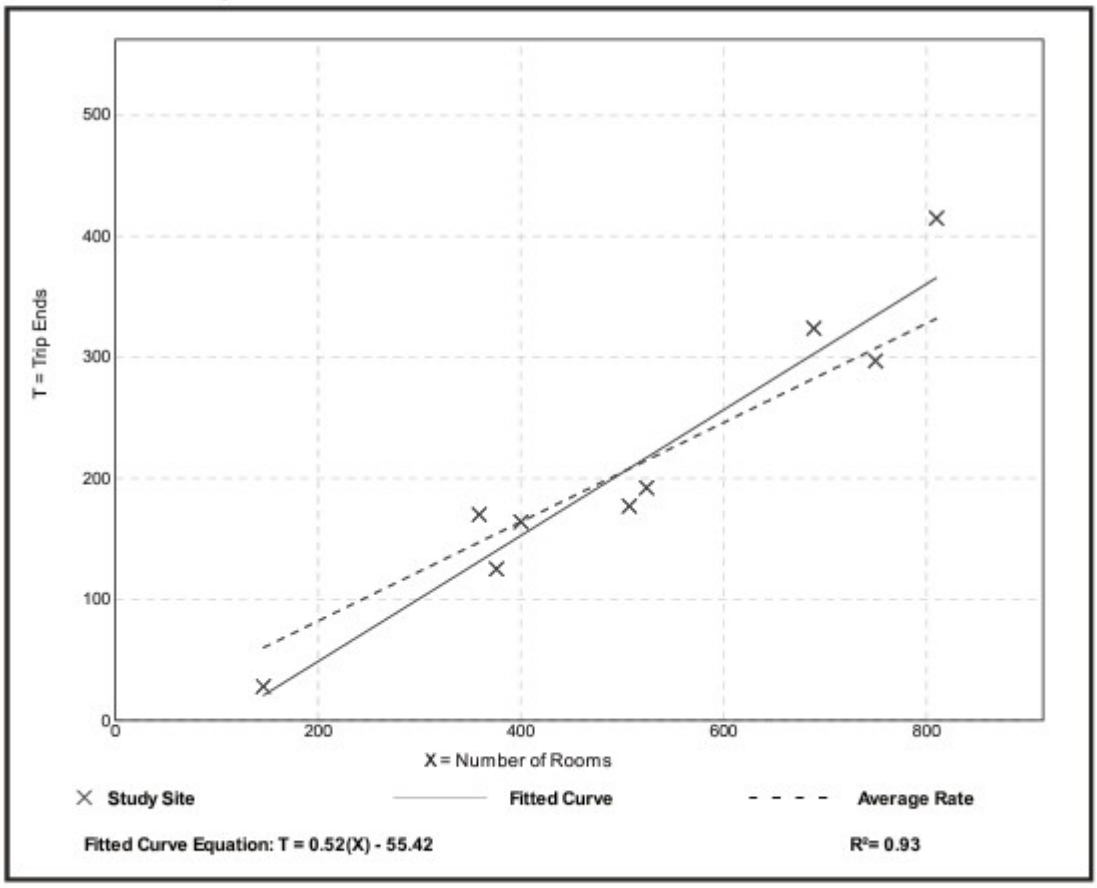
Resort Hotel
(330)

Vehicle Trip Ends vs:	**Rooms**
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:	9
Avg. Num. of Rooms:	507
Directional Distribution:	43% entering, 57% exiting

Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.41	0.19 - 0.51	0.08

Data Plot and Equation



Attachment 5
Intersection Worksheets – Existing AM/PM Peaks

HCS7 Two-Way Stop-Control Report

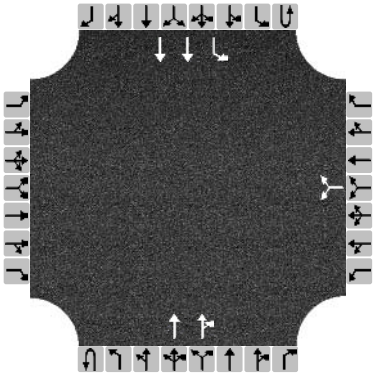
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	3/27/2019
Analysis Year	2019
Time Analyzed	Existing AM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at Nixon Rd
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Chapman Hwy (SR 71)
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume, V (veh/h)						0		0			1439	0		0	777	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked						0.000		0.000						0.000		
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.84		6.94						4.14		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							0							0		
Capacity, c (veh/h)							0							425		
v/c Ratio														0.00		
95% Queue Length, Q_{95} (veh)														0.0		
Control Delay (s/veh)							5.0							13.5		
Level of Service, LOS							A							B		
Approach Delay (s/veh)						5.0								0.0		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

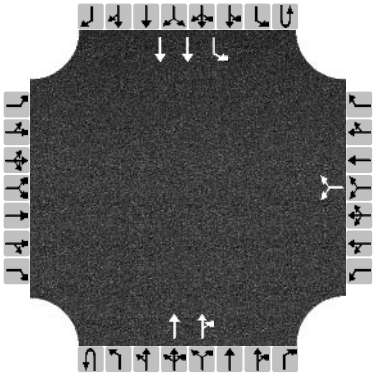
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	3/27/2019
Analysis Year	2019
Time Analyzed	Existing PM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at Nixon Rd
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Chapman Hwy (SR 71)
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume, V (veh/h)						1		1			1286	7		3	1443	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked						0.000		0.000						0.000		
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.84		6.94						4.14		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							2							3		
Capacity, c (veh/h)							82							514		
v/c Ratio							0.02							0.01		
95% Queue Length, Q_{95} (veh)							0.1							0.0		
Control Delay (s/veh)							49.9							12.1		
Level of Service, LOS							E							B		
Approach Delay (s/veh)						49.9								0.0		
Approach LOS						E										

HCS7 Two-Way Stop-Control Report

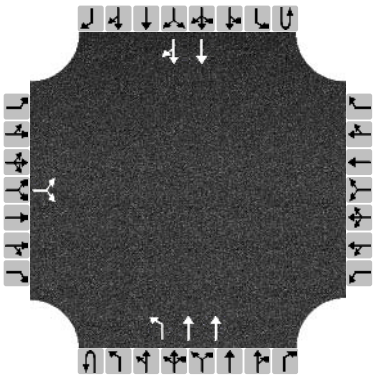
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	8/21/2019
Analysis Year	2019
Time Analyzed	Existing AM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at W Dick For
Jurisdiction	City of Knoxville
East/West Street	W Dick Ford Lane
North/South Street	Chapman Highway
Peak Hour Factor	0.81
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		39		19						2	1437				758	50
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.94						4.14						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			71							2						
Capacity, c (veh/h)			92							689						
v/c Ratio			0.77							0.00						
95% Queue Length, Q_{95} (veh)			4.0							0.0						
Control Delay (s/veh)			119.4							10.2						
Level of Service, LOS			F							B						
Approach Delay (s/veh)	119.4								0.0							
Approach LOS	F															

HCS7 Two-Way Stop-Control Report

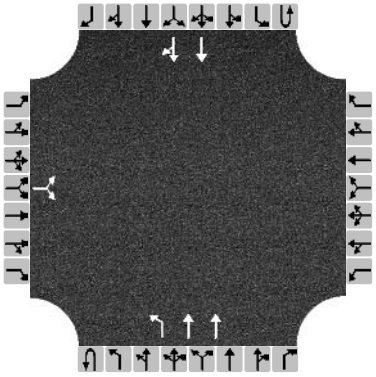
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	8/21/2019
Analysis Year	2019
Time Analyzed	Existing PM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at W Dick For
Jurisdiction	City of Knoxville
East/West Street	W Dick Ford Lane
North/South Street	Chapman Highway
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		10		13						8	1279				1433	64
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.94						4.14						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			27							9						
Capacity, c (veh/h)			50							351						
v/c Ratio			0.54							0.03						
95% Queue Length, Q_{95} (veh)			2.1							0.1						
Control Delay (s/veh)			141.2							15.5						
Level of Service, LOS			F							C						
Approach Delay (s/veh)		141.2								0.1						
Approach LOS		F														

HCS7 Two-Way Stop-Control Report

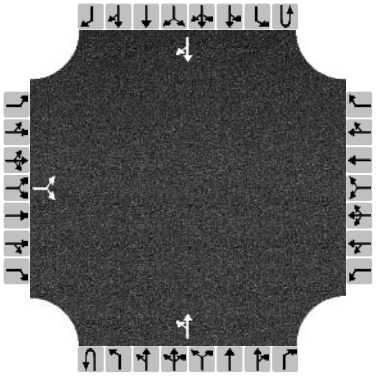
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	4/1/2019
Analysis Year	2019
Time Analyzed	Existing AM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Sevierville Pike at Nixon
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Sevierville Pike
Peak Hour Factor	0.67
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		2		2						0	73				60	0
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			6							0						
Capacity, c (veh/h)			869							1504						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			9.2							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		9.2								0.0						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

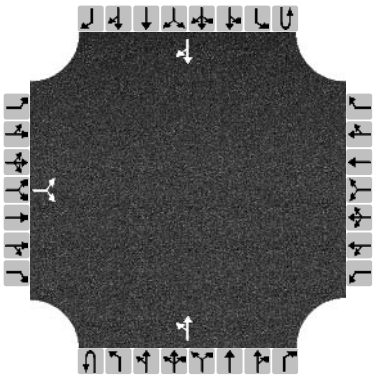
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	4/1/2019
Analysis Year	2019
Time Analyzed	Existing PM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Sevierville Pike at Nixon
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Sevierville Pike
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		3		7						1	53				144	2
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13							1						
Capacity, c (veh/h)			813							1385						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			9.5							7.6						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		9.5								0.1						
Approach LOS		A														

Attachment 6
Intersection Worksheets – Background AM/PM Peaks

HCS7 Two-Way Stop-Control Report

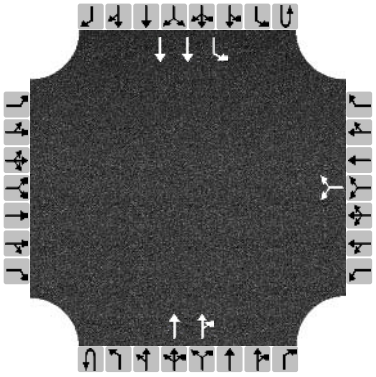
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	3/27/2019
Analysis Year	2022
Time Analyzed	Background AM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at Nixon Rd
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Chapman Hwy (SR 71)
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume, V (veh/h)						0		0			1483	0		0	801	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked						0.000		0.000						0.000		
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.84		6.94						4.14		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							0							0		
Capacity, c (veh/h)							0							407		
v/c Ratio														0.00		
95% Queue Length, Q_{95} (veh)														0.0		
Control Delay (s/veh)							5.0							13.8		
Level of Service, LOS							A							B		
Approach Delay (s/veh)						5.0								0.0		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

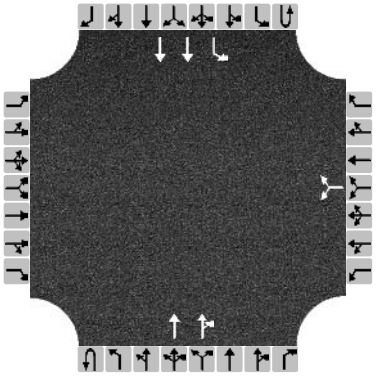
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	3/27/2019
Analysis Year	2022
Time Analyzed	Background PM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at Nixon Rd
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Chapman Hwy (SR 71)
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	2	0	0	1	2	0
Configuration							LR				T	TR		L	T	
Volume, V (veh/h)						1		1			1325	7		3	1487	
Percent Heavy Vehicles (%)						2		2						2		
Proportion Time Blocked						0.000		0.000						0.000		
Percent Grade (%)						0										
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.5		6.9						4.1		
Critical Headway (sec)						6.84		6.94						4.14		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.52		3.32						2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							2							3		
Capacity, c (veh/h)							75							496		
v/c Ratio							0.03							0.01		
95% Queue Length, Q_{95} (veh)							0.1							0.0		
Control Delay (s/veh)							54.3							12.3		
Level of Service, LOS							F							B		
Approach Delay (s/veh)						54.3								0.0		
Approach LOS						F										

HCS7 Two-Way Stop-Control Report

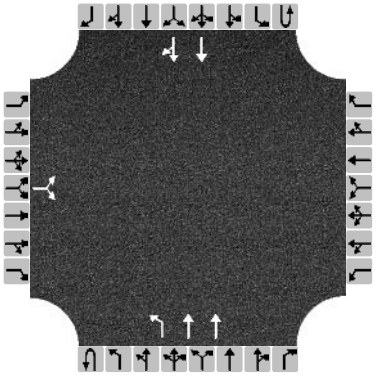
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	8/21/2019
Analysis Year	2022
Time Analyzed	Background AM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at W Dick For
Jurisdiction	City of Knoxville
East/West Street	W Dick Ford Lane
North/South Street	Chapman Highway
Peak Hour Factor	0.81
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		40		20						2	1481				781	52
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.94						4.14						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			74							2						
Capacity, c (veh/h)			86							671						
v/c Ratio			0.86							0.00						
95% Queue Length, Q_{95} (veh)			4.6							0.0						
Control Delay (s/veh)			145.2							10.4						
Level of Service, LOS			F							B						
Approach Delay (s/veh)	145.2								0.0							
Approach LOS	F															

HCS7 Two-Way Stop-Control Report

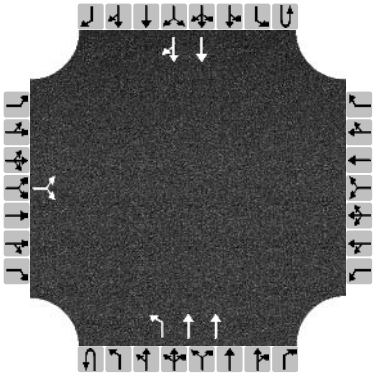
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	8/21/2019
Analysis Year	2022
Time Analyzed	Background PM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Chapman Hwy at W Dick For
Jurisdiction	City of Knoxville
East/West Street	W Dick Ford Lane
North/South Street	Chapman Highway
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	1	2	0	0	0	2	0
Configuration			LR							L	T				T	TR
Volume, V (veh/h)		10		13						8	1318				1477	66
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.5		6.9						4.1						
Critical Headway (sec)		6.84		6.94						4.14						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			27							9						
Capacity, c (veh/h)			44							334						
v/c Ratio			0.61							0.03						
95% Queue Length, Q_{95} (veh)			2.3							0.1						
Control Delay (s/veh)			170.8							16.1						
Level of Service, LOS			F							C						
Approach Delay (s/veh)		170.8								0.1						
Approach LOS		F														

HCS7 Two-Way Stop-Control Report

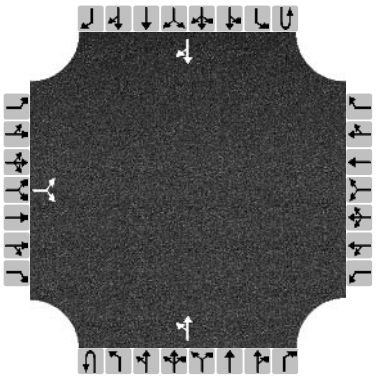
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	4/1/2019
Analysis Year	2022
Time Analyzed	Background AM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Sevierville Pike at Nixon
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Sevierville Pike
Peak Hour Factor	0.67
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		2		2						0	75				62	0
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			6							0						
Capacity, c (veh/h)			864							1500						
v/c Ratio			0.01							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			9.2							7.4						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		9.2								0.0						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

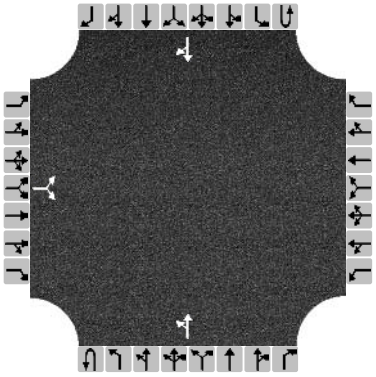
General Information

Analyst	Addie Kirkham
Agency/Co.	FMA
Date Performed	4/1/2019
Analysis Year	2022
Time Analyzed	Background PM Peak
Intersection Orientation	North-South
Project Description	588.004 Ancient Lore Village

Site Information

Intersection	Sevierville Pike at Nixon
Jurisdiction	Knox County
East/West Street	Nixon Road
North/South Street	Sevierville Pike
Peak Hour Factor	0.78
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

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		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume, V (veh/h)		3		7						1	55				148	2
Percent Heavy Vehicles (%)		2		2						2						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized		No				No				No				No		
Median Type/Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.42		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.52		3.32						2.22						

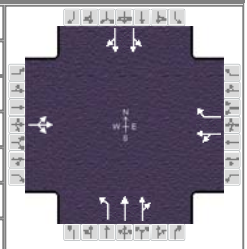
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13							1						
Capacity, c (veh/h)			806							1379						
v/c Ratio			0.02							0.00						
95% Queue Length, Q_{95} (veh)			0.0							0.0						
Control Delay (s/veh)			9.5							7.6						
Level of Service, LOS			A							A						
Approach Delay (s/veh)		9.5								0.1						
Approach LOS		A														

Attachment 7
Intersection Worksheets – Full Buildout AM/PM Peaks

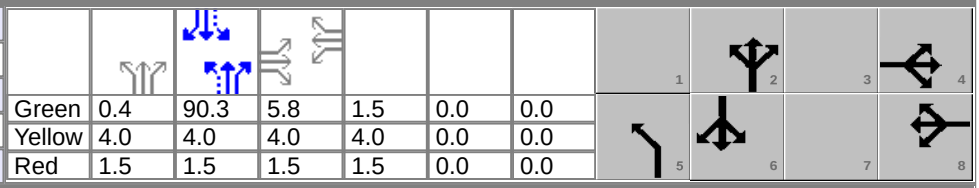
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	FMA			Duration, h	0.25
Analyst	Addie Kirkham	Analysis Date	8/21/2019	Area Type	Other
Jurisdiction	City of Knoxville	Time Period	Buildout AM Peak	PHF	0.92
Urban Street	Chapman Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Chapman Hwy At Nixon/…	File Name	Buildout AM Peak_Signalized.xus		
Project Description	588.004 Ancient Lore Village				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	40	0	20	3	0	5	2	1481	2	18	781	52

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	0.4	90.3	5.8	1.5	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	1.5	1.5	1.5	1.5	0.0	0.0

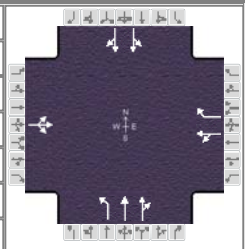
Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		12.0		11.0	1.0	4.0		8.3
Phase Duration, s		11.3		7.0	5.9	101.7		95.8
Change Period, ($Y+R_c$), s		5.5		5.5	5.5	5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1	3.0	0.0		0.0
Queue Clearance Time (g_s), s		6.5		2.4	2.0			
Green Extension Time (g_e), s		0.0		0.0	0.0	0.0		0.0
Phase Call Probability		0.89		0.25	0.07			
Max Out Probability		1.00		0.00	0.00			

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		65			3	5	2	806	806	466		459
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1711			1781	1585	1781	1870	1869	1688		1665
Queue Service Time (g_s), s		4.5			0.2	0.4	0.0	18.0	18.0	0.0		11.3
Cycle Queue Clearance Time (g_c), s		4.5			0.2	0.4	0.0	18.0	18.0	9.9		11.3
Green Ratio (*g/C*)		0.05			0.01	0.01	0.77	0.80	0.80	0.75		0.75
Capacity (*c*), veh/h		83			22	20	471	1499	1499	1301		1253
Volume-to-Capacity Ratio (*X*)		0.789			0.145	0.272	0.005	0.538	0.538	0.358		0.367
Back of Queue (*Q*), ft/ln (95 th percentile)		93.1			4.7	7.9	0.4	206.5	204	137.7		141
Back of Queue (*Q*), veh/ln (95 th percentile)		3.7			0.2	0.3	0.0	8.1	8.2	5.5		5.6
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00	0.00	0.00	0.00	0.00	0.00		0.00
Uniform Delay (d_1), s/veh		56.5			58.6	58.7	3.9	4.2	4.2	4.9		5.1
Incremental Delay (d_2), s/veh		6.1			1.1	2.7	0.0	1.4	1.4	0.8		0.8
Initial Queue Delay (d_3), s/veh		0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Control Delay (*d*), s/veh		62.6			59.7	61.4	3.9	5.5	5.5	5.7		5.9
Level of Service (LOS)		E			E	E	A	A	A	A		A
Approach Delay, s/veh / LOS	62.6	E		60.8	E		5.5	A		5.8	A	
Intersection Delay, s/veh / LOS	7.2						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.8	C	2.2	B	2.0	B
Bicycle LOS Score / LOS	0.6	A	0.5	A	1.8	B	1.3	A

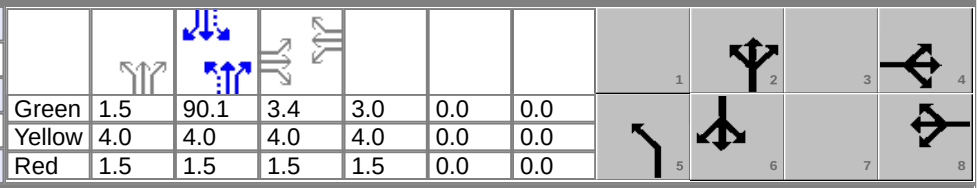
HCS7 Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	FMA			Duration, h	0.25
Analyst	Addie Kirkham	Analysis Date	8/21/2019	Area Type	Other
Jurisdiction	City of Knoxville	Time Period	Buildout PM Peak	PHF	0.92
Urban Street	Chapman Highway	Analysis Year	2022	Analysis Period	1> 7:00
Intersection	Chapman Hwy At Nixon/…	File Name	Buildout PM Peak_Signalized.xus		
Project Description	588.004 Ancient Lore Village				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	10	0	13	9	0	10	8	1318	9	19	1477	66

Signal Information			
Cycle, s	120.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	1.5	90.1	3.4	3.0	0.0	0.0
Yellow	4.0	4.0	4.0	4.0	0.0	0.0
Red	1.5	1.5	1.5	1.5	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4		8	5	2		6
Case Number		12.0		11.0	1.0	4.0		8.3
Phase Duration, s		8.9		8.5	7.0	102.6		95.6
Change Period, ($Y+R_c$), s		5.5		5.5	5.5	5.5		5.5
Max Allow Headway (*MAH*), s		3.1		3.1	3.0	0.0		0.0
Queue Clearance Time (g_s), s		3.8		2.8	2.1			
Green Extension Time (g_e), s		0.0		0.0	0.0	0.0		0.0
Phase Call Probability		0.57		0.50	0.25			
Max Out Probability		0.00		0.00	0.00			

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7	4	14	3	8	18	5	2	12	1	6	16
Adjusted Flow Rate (*v*), veh/h		25			10	11	9	722	721	883		815
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1665			1781	1585	1781	1870	1866	1787		1675
Queue Service Time (g_s), s		1.8			0.6	0.8	0.1	14.4	14.4	0.0		28.3
Cycle Queue Clearance Time (g_c), s		1.8			0.6	0.8	0.1	14.4	14.4	26.7		28.3
Green Ratio (*g/C*)		0.03			0.02	0.02	0.78	0.81	0.81	0.75		0.75
Capacity (*c*), veh/h		47			44	39	234	1514	1510	1373		1258
Volume-to-Capacity Ratio (*X*)		0.531			0.221	0.275	0.037	0.477	0.477	0.643		0.647
Back of Queue (*Q*), ft/ln (95 th percentile)		35.3			13.4	15.1	2	158.3	156.4	330.3		318.4
Back of Queue (*Q*), veh/ln (95 th percentile)		1.4			0.5	0.6	0.1	6.2	6.3	13.2		12.7
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00			0.00	0.00	0.00	0.00	0.00	0.00		0.00
Uniform Delay (d_1), s/veh		57.5			57.4	57.4	6.9	3.6	3.6	7.1		7.2
Incremental Delay (d_2), s/veh		3.4			0.9	1.4	0.0	1.1	1.1	2.3		2.6
Initial Queue Delay (d_3), s/veh		0.0			0.0	0.0	0.0	0.0	0.0	0.0		0.0
Control Delay (*d*), s/veh		60.9			58.3	58.8	6.9	4.6	4.6	9.4		9.8
Level of Service (LOS)		E			E	E	A	A	A	A		A
Approach Delay, s/veh / LOS	60.9	E		58.6	E		4.6	A		9.6	A	
Intersection Delay, s/veh / LOS	8.1						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.9	C	2.8	C	2.2	B	2.0	B
Bicycle LOS Score / LOS	0.5	A	0.5	A	1.7	B	1.9	B

Attachment 8
Turn Lane Warrant Analysis

Project: Ancient Lore Village at Boyd Hollow

Sevierville Pike at
at Employee Parking Lot

VOLUMES

LEFT TURN	Opposing	Thru	LT	LT MAX	Warrant Met
AM	62	75	-	250	NO
PM	148	55	-	250	NO

Sevierville Pike at
at Employee Parking Lot

VOLUMES

RIGHT TURN	Thru	RT	RT MAX	Warrant Met
AM	62	-	549	NO
PM	148	-	449	NO

TABLE 5A

LEFT-TURN LANE VOLUME THRESHOLDS FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 36 TO 45 MPH

(If the left-turn volume exceeds the table value a left -turn lane is needed)

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME *					
	100 - 149	150 - 199	200 - 249	250 - 299	300 - 349	350 - 399
100 - 149 150 - 199	250 200	80 140	140 105	110 90	80 70	70 60
200 - 249 250 - 299	160 130	115 100	85 75	75 65	65 60	55 50
300 - 349 350 - 399	110 100	90 80	70 65	60 55	55 50	45 40
400 - 449 450 - 499	90 80	70 65	60 55	50 45	45 40	35 30
500 - 549 550 - 599	70 65	60 55	45 40	35 35	35 30	25 25
600 - 649 650 - 699	60 55	45 35	35 35	30 30	25 25	25 20
700 - 749 750 or More	50 45	35 35	30 25	25 25	20 20	20 20

AM/PM Peak

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME *					
	350 - 399	400 - 449	450 - 499	500 - 549	550 - 599	=/ > 600
100 - 149 150 - 199	70 60	60 55	50 45	45 40	40 35	35 30
200 - 249 250 - 299	55 50	50 45	40 35	35 30	30 30	30 30
300 - 349 350 - 399	45 40	40 35	35 30	30 25	25 25	25 20
400 - 449 450 - 499	35 30	30 25	30 25	25 20	20 20	20 20
500 - 549 550 - 599	25 25	25 20	20 20	20 20	20 20	15 15
600 - 649 650 - 699	25 20	20 20	20 20	20 20	20 20	15 15
700 - 749 750 or More	20 20	20 20	20 20	15 15	15 15	15 15

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

TABLE 5B

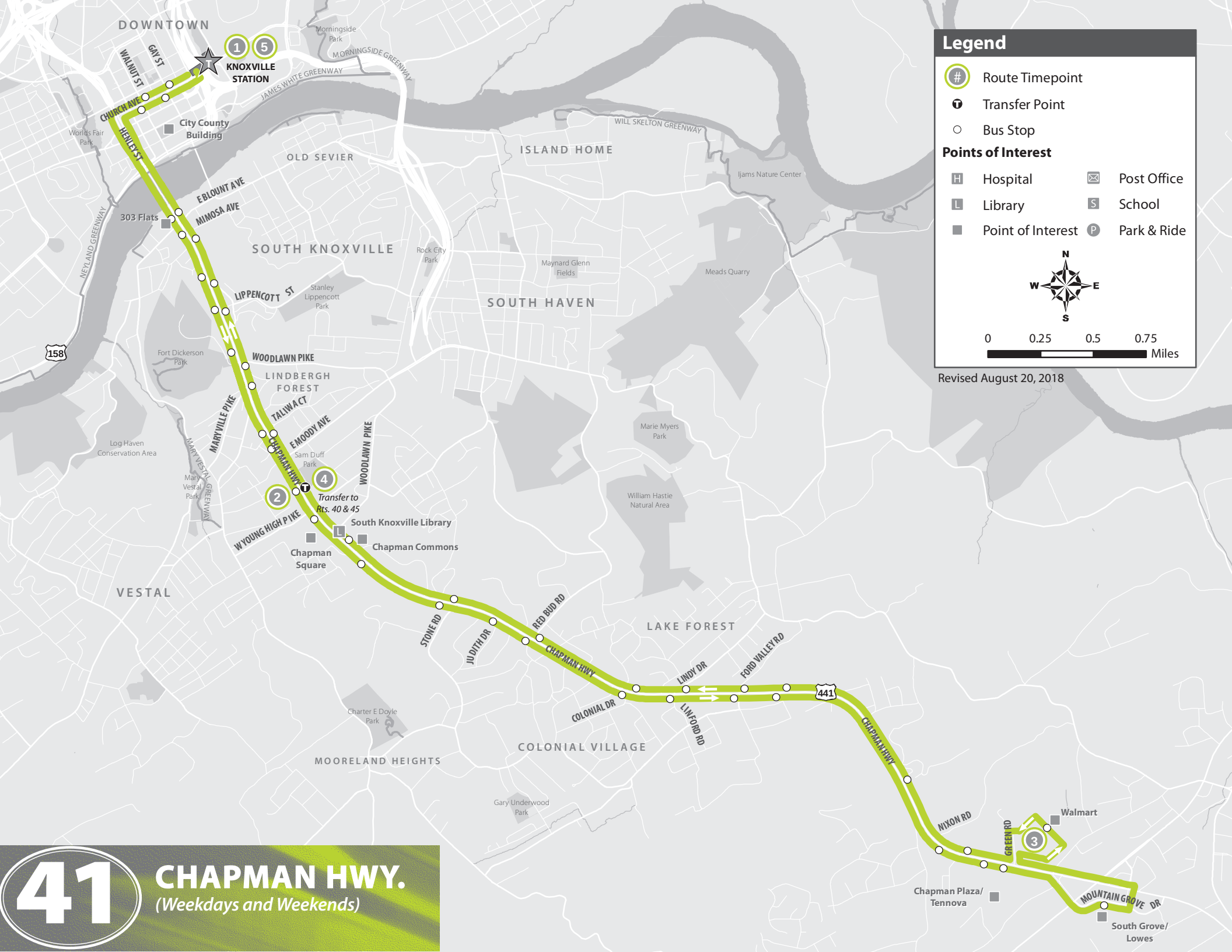
RIGHT-TURN LANE VOLUME THRESHOLDS
FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 36 TO 45 MPH

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	AM Peak	PM Peak				
100 - 149 150 - 199						
200 - 249 250 - 299					Yes	Yes Yes
300 - 349 350 - 399			Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499		Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes	Yes Yes	Yes Yes	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 - 600	+ / > 600
Fewer Than 25 25 - 49 50 - 99				Yes	Yes Yes	Yes Yes
100 - 149 150 - 199		Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
200 - 249 250 - 299	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
300 - 349 350 - 399	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
400 - 449 450 - 499	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599	Yes Yes	Yes Yes	Yes Yes	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.

Attachment 9
Transit Network


DOWNTOWN
KNOXVILLE STATION
Morningside Park
MORNINGSIDE GREENWAY
JAMES WHITE GREENWAY
WILL SKELTON GREENWAY
WALNUT ST
GAY ST
CHURCH AVE
HENLEY ST
City County Building
Worlds Fair Park
OLD SEVIER
ISLAND HOME
Ijams Nature Center
E BLOUNT AVE
MIMOSA AVE
303 Flats
NEYLAND GREENWAY
SOUTH KNOXVILLE
Rock City Park
Maynard Glenn Fields
Meads Quarry
LIPPENCOTT ST
Stanley Lippencott Park
SOUTH HAVEN
158
Fort Dickerson Park
WOODLAWN PIKE
LINDBERGH FOREST
TALIWA CT
E MOODY AVE
MARYVILLE PIKE
CHAPMAN HWY
WOODLAWN PIKE
Log Haven Conservation Area
Sam Duff Park
Marie Myers Park
Mary Vestal Park
MARY VESTAL GREENWAY
Transfer to Rts. 40 & 45
W YOUNG HIGH PIKE
South Knoxville Library
Chapman Commons
Chapman Square
William Hastie Natural Area
VESTAL
STONE RD
JUDITH DR
RED BUD RD
CHAPMAN HWY
LAKE FOREST
LINDY DR
FORD VALLEY RD
441
COLONIAL DR
LINFORD RD
Charter E Doyle Park
COLONIAL VILLAGE
MOORELAND HEIGHTS
Gary Underwood Park
NIXON RD
GREEN RD
Walmart
Chapman Plaza/ Tennova
MOUNTAIN GROVE DR
South Grove/ Lowes
Legend
Route Timepoint
Transfer Point
Bus Stop
Points of Interest
Hospital
Post Office
Library
School
Point of Interest
Park & Ride
N
W
E
S
0
0.25
0.5
0.75
Miles
Revised August 20, 2018
41
CHAPMAN HWY.
(Weekdays and Weekends)

41

CHAPMAN HIGHWAY

(Weekdays and Weekends)

IMPROVED SATURDAY SERVICE HOURS AUGUST 2018

SERVES:

- Chapman Commons
- Chapman Plaza
- Chapman Square
- Knoxville Station/Downtown
- South Grove Shopping Center
- South Knoxville Branch Library
- Tennova South
- Walmart

kat KNOXVILLE AREA TRANSIT

Effective Date: January 2019

	Going away from Downtown			Going toward Downtown	
	Knoxville Station—Platform P	Chapman Hwy. past Moody	Walmart	Chapman Hwy. past Young High Pike	Knoxville Station
	1	2	3	4	5
WEEKDAY SCHEDULE					
A.M.			5:41	5:50	6:10
	6:15	6:26	6:41	6:50	7:10
	6:45	6:56	7:11	7:20	7:40
	7:15	7:26	7:41	7:50	8:10
	7:45	7:56	8:11	8:20	8:40
	8:15	8:26	8:41	8:50	9:10
	8:45	8:56	9:11	9:20	9:40
	9:15	9:26	9:41	9:50	10:10
	9:45	9:56	10:11	10:20	10:40
	10:15	10:26	10:41	10:50	11:10
	10:45	10:56	11:11	11:20	11:40
	11:15	11:26	11:41	11:50	**12:10**
	11:45	11:56	**12:11**	**12:20**	**12:40**
P.M.	**12:15**	**12:26**	**12:41**	**12:50**	**1:10**
	12:45	**12:56**	**1:11**	**1:20**	**1:40**
	1:15	**1:26**	**1:41**	**1:50**	**2:10**
	1:45	**1:56**	**2:11**	**2:20**	**2:40**
	2:15	**2:26**	**2:41**	**2:50**	**3:10**
	2:45	**2:56**	**3:11**	**3:20**	**3:40**
	3:15	**3:26**	**3:41**	**3:50**	**4:10**
	3:45	**3:56**	**4:11**	**4:20**	**4:40**
	4:15	**4:26**	**4:41**	**4:50**	**5:10**
	4:45	**4:56**	**5:11**	**5:20**	**5:40**
	5:15	**5:26**	**5:41**	**5:50**	**6:10**
	5:45	**5:56**	**6:11**	**6:20**	**6:40**
	6:15	**6:26**	**6:41**	**6:50**	**7:10**
	6:45	**6:56**	**7:11**	**7:20**	**7:40**
	7:15	**7:26**	**7:41**	**7:50**	**8:10**
	7:45	**7:56**	**8:11**	**8:20**	**8:40**
	8:15	**8:26**	**8:41**	**8:50**	**9:10**
	8:45	**8:56**	**9:11**	**9:20**	**9:40**
	9:15	**9:26**	**9:41**	**9:50**	**10:10**
	9:45	**9:56**	**10:11**	**10:20**	**10:40**
	10:15	**10:26**	**10:41**	**10:50**	**11:10**
	11:15	**11:26**	**11:41**	**11:50**	*To Garage*

	Going away from Downtown			Going toward Downtown	
	Knoxville Station—Platform P	Chapman Hwy. past Moody	Walmart	Chapman Hwy. past Young High Pike	Knoxville Station
	1	2	3	4	5
SATURDAY SCHEDULE					
A.M.	7:15	7:26	7:41	7:50	8:10
	7:45	7:56	8:11	8:20	8:40
	8:15	8:26	8:41	8:50	9:10
	8:45	8:56	9:11	9:20	9:40
	9:15	9:26	9:41	9:50	10:10
	9:45	9:56	10:11	10:20	10:40
	10:15	10:26	10:41	10:50	11:10
	10:45	10:56	11:11	11:20	11:40
	11:15	11:26	11:41	11:50	**12:10**
	11:45	11:56	**12:11**	**12:20**	**12:40**
P.M.	**12:15**	**12:26**	**12:41**	**12:50**	**1:10**
	12:45	**12:56**	**1:11**	**1:20**	**1:40**
	1:15	**1:26**	**1:41**	**1:50**	**2:10**
	1:45	**1:56**	**2:11**	**2:20**	**2:40**
	2:15	**2:26**	**2:41**	**2:50**	**3:10**
	2:45	**2:56**	**3:11**	**3:20**	**3:40**
	3:15	**3:26**	**3:41**	**3:50**	**4:10**
	3:45	**3:56**	**4:11**	**4:20**	**4:40**
	4:15	**4:26**	**4:41**	**4:50**	**5:10**
	4:45	**4:56**	**5:11**	**5:20**	**5:40**
	5:15	**5:26**	**5:41**	**5:50**	**6:10**
	5:45	**5:56**	**6:11**	**6:20**	**6:40**
	6:15	**6:26**	**6:41**	**6:50**	**7:10**
	6:45	**6:56**	**7:11**	**7:20**	**7:40**
	7:15	**7:26**	**7:41**	**7:50**	**8:10**
	7:45	**7:56**	**8:11**	**8:20**	**8:40**
	8:15	**8:26**	**8:41**	**8:50**	**9:10**
	8:45	**8:56**	**9:11**	**9:20**	**9:40**
	9:15	**9:26**	**9:41**	**9:50**	**10:10**
	9:45	**9:56**	**10:11**	**10:20**	**10:40**
	10:15	**10:26**	**10:41**	**10:50**	**11:10**
	10:45	**10:56**	**11:11**	**11:20**	**11:40**
	11:15	**11:26**	**11:41**	**11:50**	*To Garage*
SUNDAY SCHEDULE					
A.M.	8:15	8:26	8:41	8:50	9:10
	9:15	9:26	9:41	9:50	10:10
	10:15	10:26	10:41	10:50	11:10
	11:15	11:26	11:41	11:50	**12:10**
P.M.	**12:15**	**12:26**	**12:41**	**12:50**	**1:10**
	1:15	**1:26**	**1:41**	**1:50**	**2:10**
	2:15	**2:26**	**2:41**	**2:50**	**3:10**
	3:15	**3:26**	**3:41**	**3:50**	**4:10**
	4:15	**4:26**	**4:41**	**4:50**	**5:10**
	5:15	**5:26**	**5:41**	**5:50**	**6:10**
	6:15	**6:26**	**6:41**	**6:50**	**7:10**
	7:15	**7:26**	**7:41**	**7:50**	**8:10**
	8:15	**8:26**	**8:41**	*To Garage*	

Need help reading this schedule?

Need other general information on how to ride?

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