

STRATFORD PARK SUBDIVISION ***City of Knoxville***

TRAFFIC IMPACT STUDY

Prepared For:
KNOB CREEK HOMES

Prepared By:



October 2017
Revised June 2018



**STRATFORD PARK
SUBDIVISION
KNOXVILLE, TENNESSEE
TRAFFIC IMPACT STUDY**

Prepared for

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**October 2017
Revised June 2018**

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Project No. 222906

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INTRODUCTION

CDM Smith is pleased to submit this report to address the impact and access of the continued development of the Stratford Park subdivision. This subdivision was previously studied in 2005 for 199 single-family units (sfu) with access to Dry Gap Pike, and this study will update the traffic assessment of the site including the currently proposed Unit 5 phase of development. This residential development is located adjacent to Dry Gap Pike and Jim Sterchi Road in north Knox County. The traffic assessment required the collection of traffic data, generation of anticipated traffic volumes from the subdivision and development of projected traffic volumes from normal growth and from the site. Analyses of the resulting traffic projections were conducted to determine the capacity and levels of service for the site accesses and adjacent intersections. This study will identify and develop measures necessary to mitigate any traffic impacts including improved roadway geometrics and traffic control devices within the environs of the proposed residential development.

According to the Knoxville-Knox County Metropolitan Planning Commission's Administrative Rules and Procedures, the proposed residential development site is identified for a Level 1 Traffic Impact Study. At the request of the MPC to update the study, the study will address the anticipated traffic impacts of the buildout of the Stratford Park subdivision site with access to Dry Gap Pike and Jim Sterchi Road.

Project Description

The proposed project is a residential development with a current zoning of Planned Residential (RP-1). The Stratford Park subdivision will be 214 single-family units (sfu) on approximately 77 acres at buildout. This is an increase of 15sfu from the previous study of 199sfu. A site access street is proposed to Jim Sterchi Road in addition to the current access to Dry Gap Pike from Stratford Park Boulevard. **Figure 1** shows the subdivision site plan. The proposed phase (Unit 5 Phase) of the residential development is 64sfu on approximately 17.85 acres of the planned 77 acres at buildout and establishes an additional access to Jim Sterchi Road from the extension of Pembridge Road.

Site Location

The location of the proposed residential development is west of the Dry Gap Pike and south of Jim Sterchi Road in northeast Knox County, Tennessee, and northeast of the Knoxville central business district (CBD). The subdivision is bounded by Jim Sterchi Road and Dry Gap Pike.

Figure 2 illustrates the site location relative to local and regional access.

SITE PLAN

Stratford Park Subdivision



Figure 1

VICINITY MAP

Stratford Park Subdivision

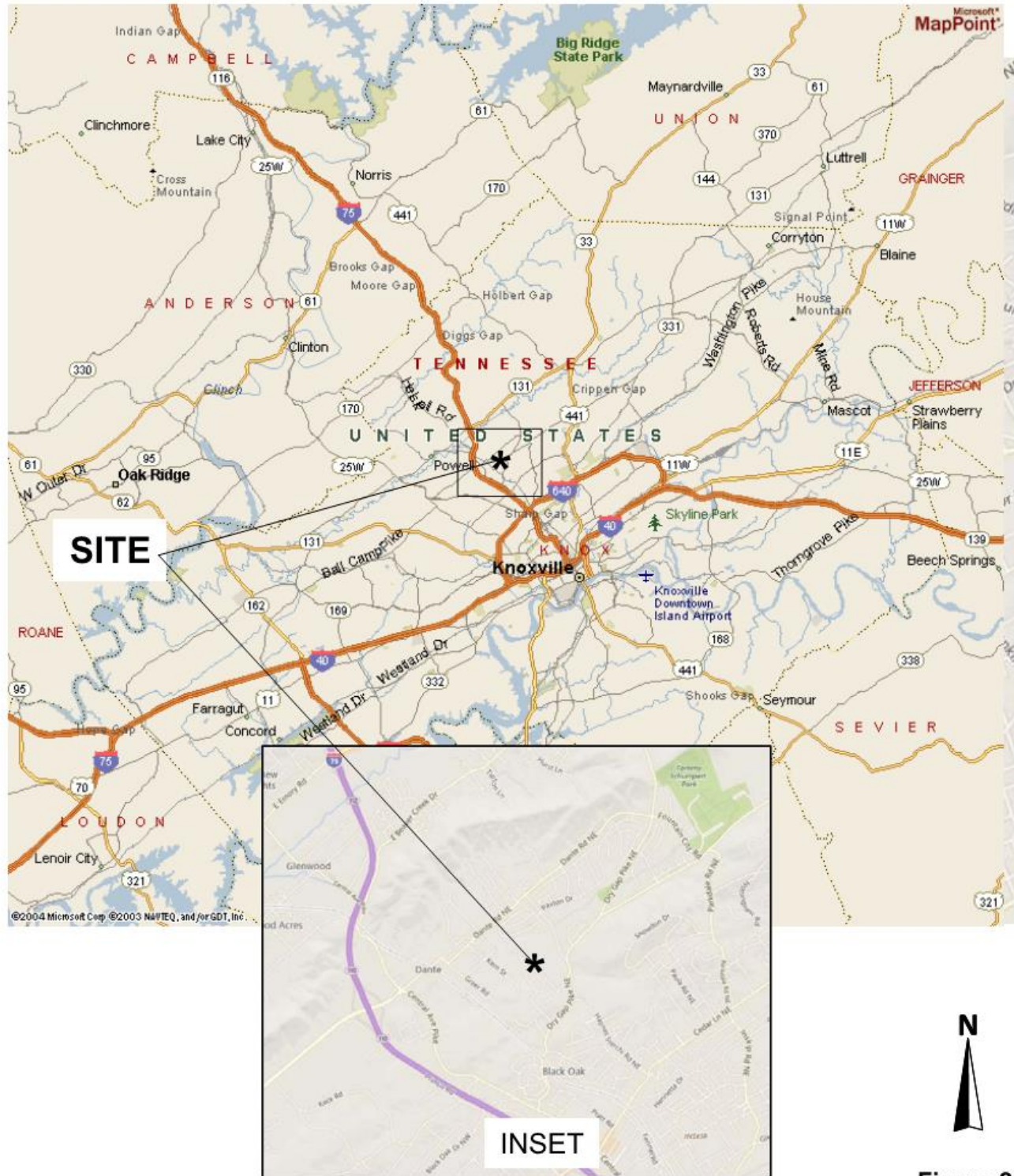


Figure 2

LOCAL AND REGIONAL ACCESS

Local Access

The Stratford Park subdivision has current access to Dry Gap Pike, and this proposed development phase will establish an access to Jim Sterchi Road which intersects Dante Road to the north and Dry Gap Pike to the south. Jim Sterchi Road is a 20-foot wide road adjacent to the site and is a 26-foot section with curb and gutter north of the proposed site access extending to Dante Road. To the south, Jim Sterchi Road narrows to 13 feet for a bridge, and to the north, Jim Sterchi Road crosses a box culvert. The box culvert does not have any delineation or devices preventing vehicles from dropping off the side of the road. From Dry Gap Pike, the speed limit posted northbound for Jim Sterchi Road is 25mph. The 2016 average daily traffic (ADT) volume for Jim Sterchi Road is 450.

Dry Gap Pike extends north and south intersecting Emory Road (S.R. 131) to the north and Central Avenue Pike to the south. A two-lane roadway, Dry Gap Pike has a width of approximately 24 feet and has a posted speed limit of 30mph. Dry Gap Pike has a 2016 ADT of 4,310 adjacent to the site. Dante Road extends west from Jim Sterchi Road to Interstate 75 and east to Dry Gap Pike.

Regional Access

To the north, Dry Gap Pike intersects Emory Road (S.R. 131). Emory Road is a 5-lane facility classified as a secondary state route and a minor arterial in the Knoxville-Knox County MPC Major Road Plan extending east and west. Its posted speed limit is 40mph. The 2016 ADT traveling Emory Road near Dry Gap Pike is 23,510 becoming 39,650 as it approaches Interstate 75.

Dante Road, north of the site, is an east and west facility. Dante Road is classified as a minor arterial and becomes Callahan Road east of I-75. Callahan Road extends east to Clinton Highway (U.S. 25 W.), and Dante Road extends west to Dry Gap Pike. Dante Road has an ADT of 6,480.

Dry Gap Pike intersects Central Avenue Pike to the south. Central Avenue Pike extends northwest and southeast. This facility intersects Emory Road to the north and extends through Cedar Lane to the south. Cedar lane provides interstate access south of the site and becomes Merchants Drive west of the interchange with I-75.

Interstate access is Interstate 75, extending north and south near the proposed project site. The 2016 ADT on Interstate 75, south of Dante Road, is approximately 79,320. This facility is designated as part of the federal interstate system intersecting Interstate 40 to the south, which is an east and west facility running through Knoxville. Interchanges are available from Emory Road and Dante Road, north of the site, and Merchants Drive, south of the site. Interstate 75 becomes I-275 south and extends west along I-640 to I-40/75. Interstate 640 extends east to I-40, east of the Knoxville CBD. Interstate 75 extends north through Lexington, Kentucky and south through Chattanooga, Tennessee.

Interstate 40 provides significant east and west regional access throughout Tennessee. To the east, Interstate 40 connects to Interstate 81, which extends into the Tri-Cities area of Tennessee and Virginia. Interstate 40 provides significant east and west regional access throughout Tennessee. South of the site, I-40 has a 2016 ADT of 154,700 between I-275 and I-640, 98,610 east of I-640, and 196,410 west of I-640.

EXISTING TRAFFIC CONDITIONS

Existing Traffic Control

The Jim Sterchi Road approaches to Dry Gap Pike and Dante Road are STOP controlled. The intersection of Dry Gap Pike is stop controlled at Central Avenue Pike. Emory Road (S.R. 131) and Dry Gap Pike intersection is signalized. The posted speed limit for Dry Gap Pike is 30mph, and Jim Sterchi Road is posted 25mph northbound.

Existing Traffic Volumes

CDM Smith conducted peak-hour turning movement counts at the intersections of Dry Gap Pike at Jim Sterchi Road and Stratford Park Boulevard and the intersection of Dante Road at Jim Sterchi Road in October of 2017. The hours counted were from 7:00a.m. to 9:00a.m. and 4:00p.m. to 6:00p.m. **Figure 3** presents the AM and PM peak-hour traffic volumes for the study intersections. The peak hours were found from 7:15-8:15AM and 5:00-6:00PM for the study intersections adjacent to the site and 7:30-8:30AM and 4:30-5:30PM for the intersection of Central Avenue Pike and Dry Gap Pike.

Signal Warrant Analyses

For the study intersection of Central Avenue Pike and Dry Gap Pike, an evaluation for a traffic control signal was conducted. There are nine warrants published in the **Manual on Uniform Traffic Control Devices, 2009 Edition**. For prevailing speeds in excess of 40mph on Central Avenue Pike, signal warrant volumes for each of the warrants can be reduced. Three traffic volume warrants were examined including the Eight-Hour Traffic Volume Warrant consisting of the Minimum Volume (Warrant 1A), Interruption to Continuous Traffic Flow (Warrant 1B), Combination (Warrant 1A & B); Four-Hour (Warrant 2); and Peak-Hour Volume (Warrant 3B). Any part of Warrant 1 must be met for a minimum of eight hours. Warrant 2 must be met for four hours, and one hour must be met for the Peak-Hour Warrant (Warrant 3B).

For the existing traffic conditions, the Combination of Warrant 1A and 1B (Warrant 1C) is approached with 7 hours satisfied, and the Four-Hour (Warrant 2), and the Peak-Hour (Warrant 3B) volume warrants are met for the intersection of Dry Gap Pike and Central Avenue Pike. The analyses are summarized as follows:

		Hours	Hours
		<u>100% Satisfied</u>	<u>90% Satisfied</u>
Warrant 1A	Minimum Volume	4 hours	1 hour
Warrant 1B	Interruption to Continuous Traffic Flow	4 hours	1 hour
Warrant 1C	Combination of Parts A & B	7 hours	
Warrant 2	Four Hour	4 hours	
Warrant 3B	Peak-hour Volume	3 hours	1 hour

2017 EXISTING TRAFFIC

Stratford Park Subdivision

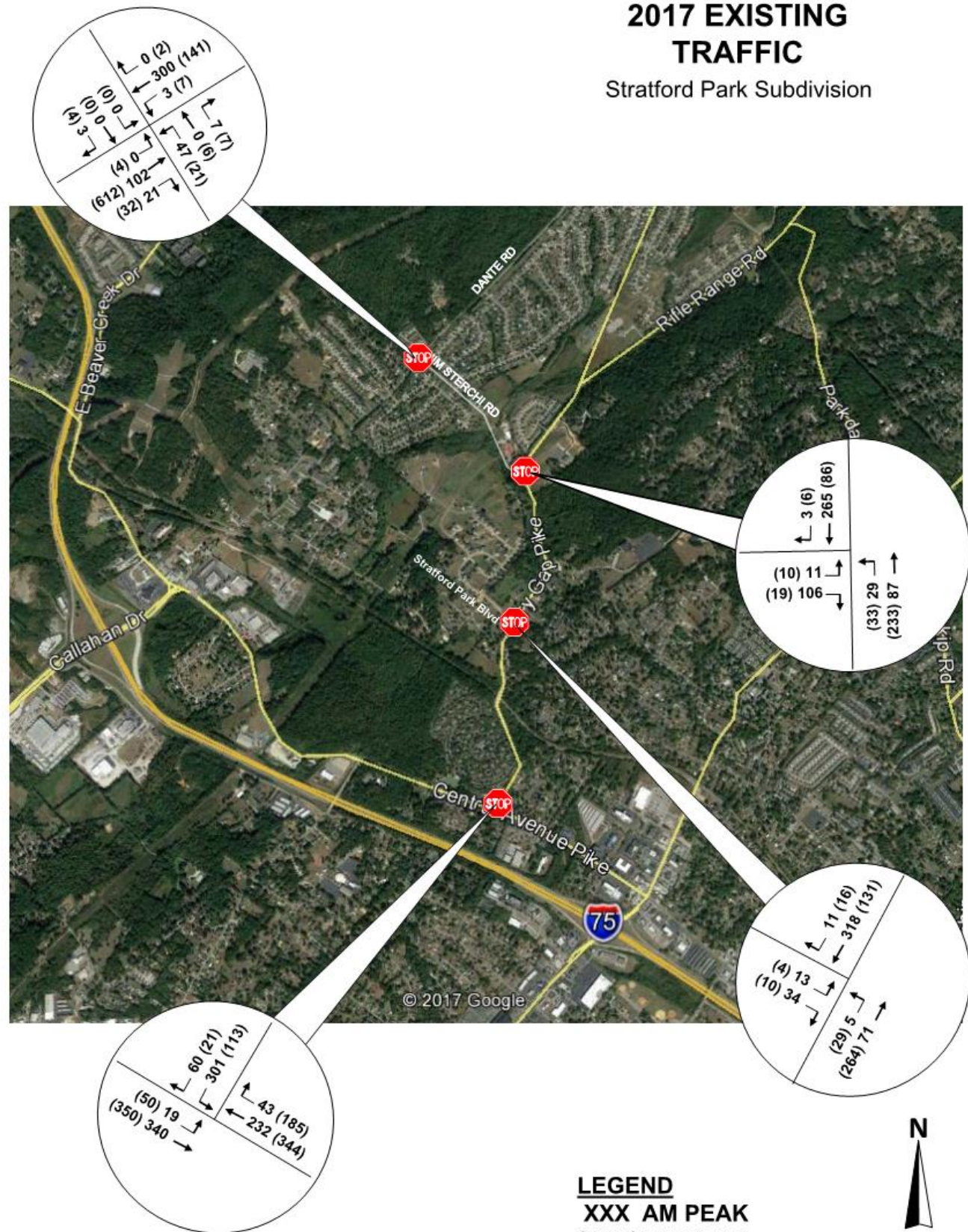


Figure 3

Existing Capacity and Level of Service

In order to evaluate the current operations of the traffic control devices, capacity and level of service were calculated using the **Highway Capacity Manual, Special Report 209** published by the Transportation Research Board (TRB). Signalized and unsignalized intersections are evaluated based on estimated intersection delays, which may be related to level of service (LOS).

Level of service and capacity are the measurements of an intersection's ability to accommodate traffic volumes. Levels of service for intersections range from A to F. LOS A is the best, and LOS F is failing. For signalized intersections, a LOS of A has an average estimated intersection delay of less than 10 seconds, and LOS F has an estimated delay of greater than 80 seconds. A LOS of C and D are typical design values. Within urban areas, a LOS D, delay between 35 and 55 seconds, is considered acceptable by the Institute of Transportation Engineers (ITE) for signalized intersections.

Unsignalized intersection levels of service have lower thresholds of delays. A LOS of F exceeds estimated delays of 50 seconds. For urban arterials, minor approaches may frequently experience levels of service E. A full level of service description for unsignalized and signalized intersections is presented in **Tables 1 and 2**, respectively.

**Table 1
LEVEL-OF-SERVICE (LOS) DESCRIPTION
FOR TWO-WAY STOP INTERSECTIONS**

Level of Service	Average Control Delay per Vehicle (seconds)
A	≤ 10.0
B	> 10.0 and ≤ 15.0
C	> 15.0 and ≤ 25.0
D	> 25.0 and ≤ 35.0
E	> 35.0 and ≤ 50.0
F	> 50.0

SOURCE: Highway Capacity Manual, TRB Special Report 209

Table 2
LEVEL-OF-SERVICE (LOS) DESCRIPTION
FOR SIGNALIZED INTERSECTIONS

LOS	Average Control Delay per Vehicle (seconds)	Description
A	≤ 10.0	Very low delay with extremely favorable progression. Most vehicles don't stop.
B	> 10.0 and ≤ 20.0	Generally good progression. Increase number of stops from that described for LOS "A" resulting in higher delays
C	> 20.0 and ≤ 35.0	Fair progression with increased delay. Number of stopping vehicles become significant; however, many still pass through the intersection without stopping. Stable flow.
D	> 35.0 and ≤ 55.0	The influence of congestion becomes more noticeable. Longer delays resulting from unfavorable progression, longer cycles, or high V/C ratios. Approaching unstable flow.
E	> 55.0 and ≤ 80.0	Limit of acceptable delay. Long delays associated with poor progression, long cycles, or high V/C ratios.
F	> 80.0	Unacceptable operation resulting from oversaturation (flow rates exceed capacity). Poor progression, long cycles, and high V/C ratios.

SOURCE: Highway Capacity Manual, TRB Special Report 209

Analyses of existing conditions are conducted using the Synchro, Version 9, software, developed by Trafficware. **Table 3** presents the analyses of the study intersections. The analyses found that the adjacent unsignalized intersections providing local site access are functioning at acceptable levels of service. The Dry Gap Pike approach to Central Avenue Pike currently fails during the AM peak hour and operates at a LOS D for the PM peak hour. The signalization of this intersection would mitigate the F LOS and would provide for an acceptable LOS.

TABLE 3. 2017 TRAFFIC CAPACITY AND LEVEL OF SERVICE

INTERSECTION	TRAFFIC CONTROL	PEAK PERIOD	V/C	DELAY	LOS
Central Avenue Pike & Dry Gap Pike	STOP	AM	1.158/.021	135.0/8.1	F/A
	SB-L/EB-L	PM	.521/.058	33.2/8.8	D/A
<i>with Mitigation</i>	<i>SIGNAL</i>	<i>AM</i>	<i>0.59</i>	<i>10.4</i>	<i>B</i>
		<i>PM</i>	<i>0.51</i>	<i>7.5</i>	<i>A</i>
Dry Gap Pike & Jim Sterchi Road	STOP	AM	.297/.032	13.4/8.3	B/A
	EB/NB-L	PM	.075/.026	10.2/7.5	B/A
Dry Gap Pike & Stratford Park Blvd	STOP	AM	.109/.005	11.5/8.1	B/A
	EB/NB-L	PM	.033/.022	10.1/7.6	B/A
Jim Sterchi Road & Dante Road	STOP	AM	.137/.033	13.2/11.2	B/B
	NB/SB	PM	.17/.026	21.3/12.9	C/B

BACKGROUND TRAFFIC CONDITIONS

Background traffic is traffic that can be anticipated regardless of the proposed development. Traffic within the study area should continue to grow due to other developments as well as the continued growth within the surrounding area. The background traffic reflects the historical traffic volumes in the area of the proposed development. This background traffic must be analyzed and evaluated for the purpose of establishing a baseline.

Background Traffic Volumes

Historical traffic data is reviewed to determine traffic growth trends in the study area. Dry Gap Pike has experienced some growth during the past few years and Jim Sterchi Road has not experienced any growth. From the available count stations on Dry Gap Pike over the past five years, traffic on Dry Gap Pike near the site has increased approximately 3.1-percent annually and near Beaver Creek Drive, traffic has exhibited an approximate 4.0-percent increase annually. Therefore, for the purpose of this study, a compounded annual growth rate of 3.5-percent was assumed. A growth of 10.9-percent was applied to the 2017 traffic volumes. **Figure 4** presents the resulting Year 2020 AM and PM peak-hour traffic volumes without the proposed development. Background ADT for Jim Sterchi Road is approximately 500.

Background Signal Warrant Analyses

For the background traffic conditions, Warrants 1B, 1C, 2 and 3B are satisfied for the intersection of Dry Gap Pike and Central Avenue Pike. The intersection satisfies the Combination, Four-Hour and Peak Hour warrants, and satisfaction of the Minimum Volume (1A) and Interruption (1B) warrants are being approached. The analyses are summarized as follows:

		Hours <u>100% Satisfied</u>	Hours <u>90% Satisfied</u>
Warrant 1A	Minimum Volume	5 hours	4 hours
Warrant 1B	Interruption to Continuous Traffic Flow	5 hours	2 hours
Warrant 1C	Combination of Parts A & B	8 hours	
Warrant 2	Four Hour	4 hours	1 hour
Warrant 3B	Peak-hour Volume	4 hours	

2020 BACKGROUND TRAFFIC

Stratford Park Subdivision

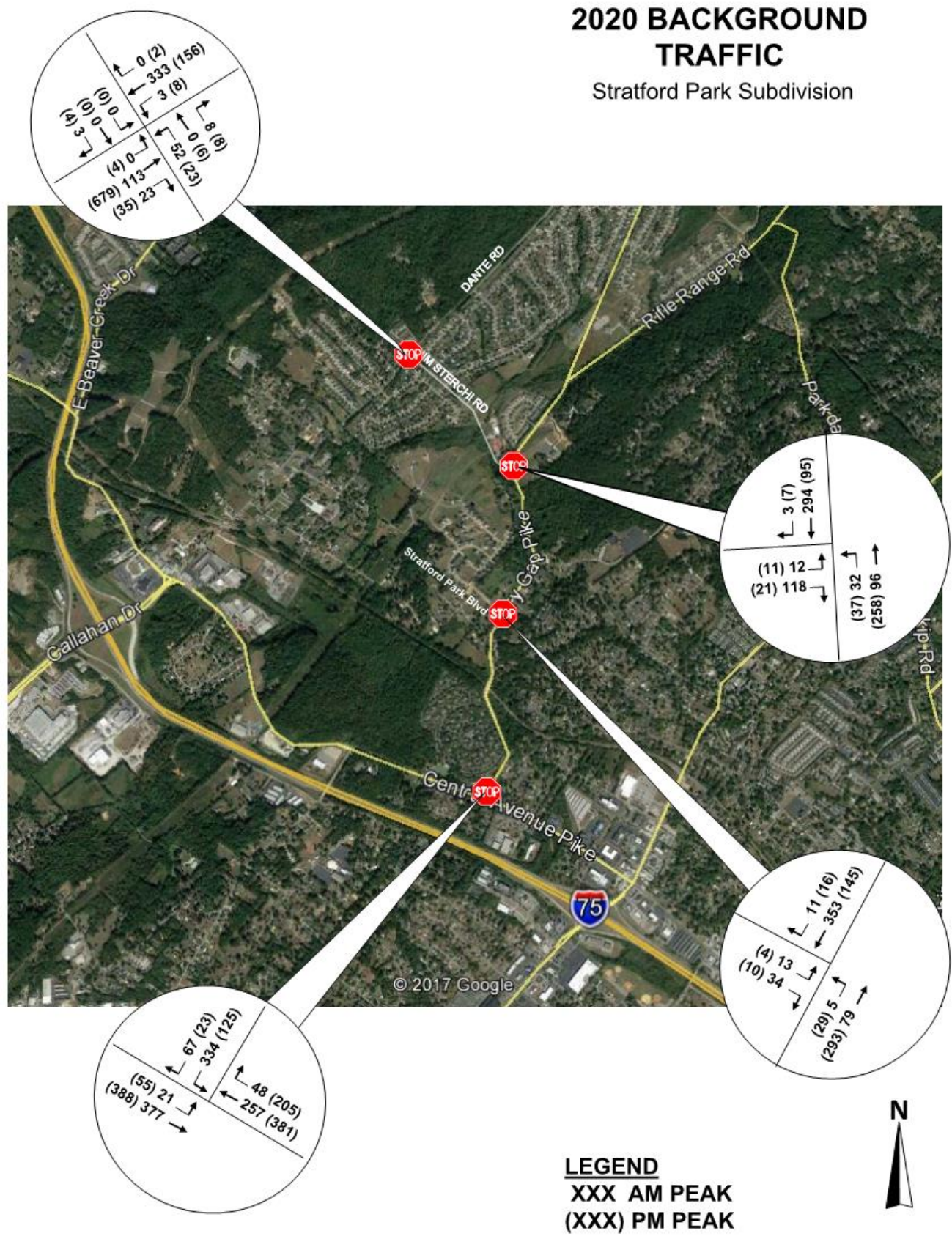


Figure 4

Background Capacity and Level of Service

Analysis was performed with the grown traffic volumes and is presented in **Table 4**. The levels of service are measured to be acceptable for the unsignalized study intersections adjacent to the site for background conditions. Levels of service are maintained from the current conditions. The Dry Gap Pike approach to the intersection with Central Avenue Pike may begin to operate at a LOS E during the PM peak hour from the current LOS D. Signalization again would mitigate this poor level of service, providing a minimum LOS B.

**TABLE 4. 2020 BACKGROUND TRAFFIC
CAPACITY AND LEVEL OF SERVICE**

INTERSECTION	TRAFFIC CONTROL	PEAK PERIOD	V/C	DELAY	LOS
Central Avenue Pike & Dry Gap Pike	STOP	AM	1.458/.024	257.4/8.2	F/A
	SB-L/EB-L	PM	.673/.067	49.5/9.0	E/A
<i>with Mitigation</i>	<i>SIGNAL</i>	<i>AM</i>	<i>0.63</i>	<i>11.8</i>	<i>B</i>
		<i>PM</i>	<i>0.55</i>	<i>8.0</i>	<i>A</i>
Dry Gap Pike & Jim Sterchi Road	STOP	AM	.351/.036	14.7/8.4	B/A
	EB/NB-L	PM	0.087/.03	10.5/7.6	B/A
Dry Gap Pike & Stratford Park Blvd	STOP	AM	.115/.005	11.9/8.2	B/A
	EB/NB-L	PM	.034/.023	10.3/7.6	B/A
Jim Sterchi Road & Dante Road	STOP	AM	.163/.036	14.1/11.6	B/B
	NB/SB	PM	.214/.029	24.9/13.8	C/B

PROJECT IMPACTS

Project conditions are developed by generating traffic based on the proposed land uses, distributing the trips to the transportation network, and again conducting analyses for capacity and level of service.

Trip Generation

Project traffic was determined using the publication, **Trip Generation, 9th Edition**. This reference is published by the Institute of Transportation Engineers (ITE) and represents national data collected for many different land uses including industrial, residential and commercial uses. **Trip Generation** is an essential tool in calculating the traffic, which may be generated by a proposed development. The subdivision is not currently built out. The study generates traffic for 214 single-family units and subtracts the existing trips entering and exiting the subdivision from Stratford Park Boulevard as much of the subdivision is built and occupied. From the trip generation calculations, the site may generate approximately 2,115 daily trips with buildout. **Table 5** presents the trip generation of this proposed site. This trip generation is approximately an increase of 10 peak-hour trips from the previous study of 199 single-family units

TABLE 5. TRIP GENERATION

LAND USE	L.U.C	UNITS	DAILY TRAFFIC	AM PEAK			PM PEAK		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
Single Family	210	214	2,115	40	120	160	131	77	208
	Existing Trips		624	16	47	63	45	14	59
	Added Trips		1,491	24	73	97	86	63	149

Trip Distribution and Assignment

Using the turning-movement count for the study intersection, residential development character, and the local and regional roadway network, generated trips are distributed to the adjacent streets with 35-percent distributed north to Dante Drive, 50-percent to the south on Central Avenue, and 15-percent to the northeast to Emory Road. **Figure 5** illustrates this distribution and assignment.

Project Traffic Volumes

By multiplying the trips generated by the distribution percentages, the project traffic volumes were determined. **Figure 6** illustrates the resulting project traffic volumes associated with the proposed project. Site generated daily trips on Jim Sterchi Road are 740 and 106 north and south of the proposed Pembridge Road intersection, respectively. The increased daily trips for Dry Gap Pike are 1,058 south and 317 north of the site.

DISTRIBUTION AND ASSIGNMENT

Stratford Park Subdivision

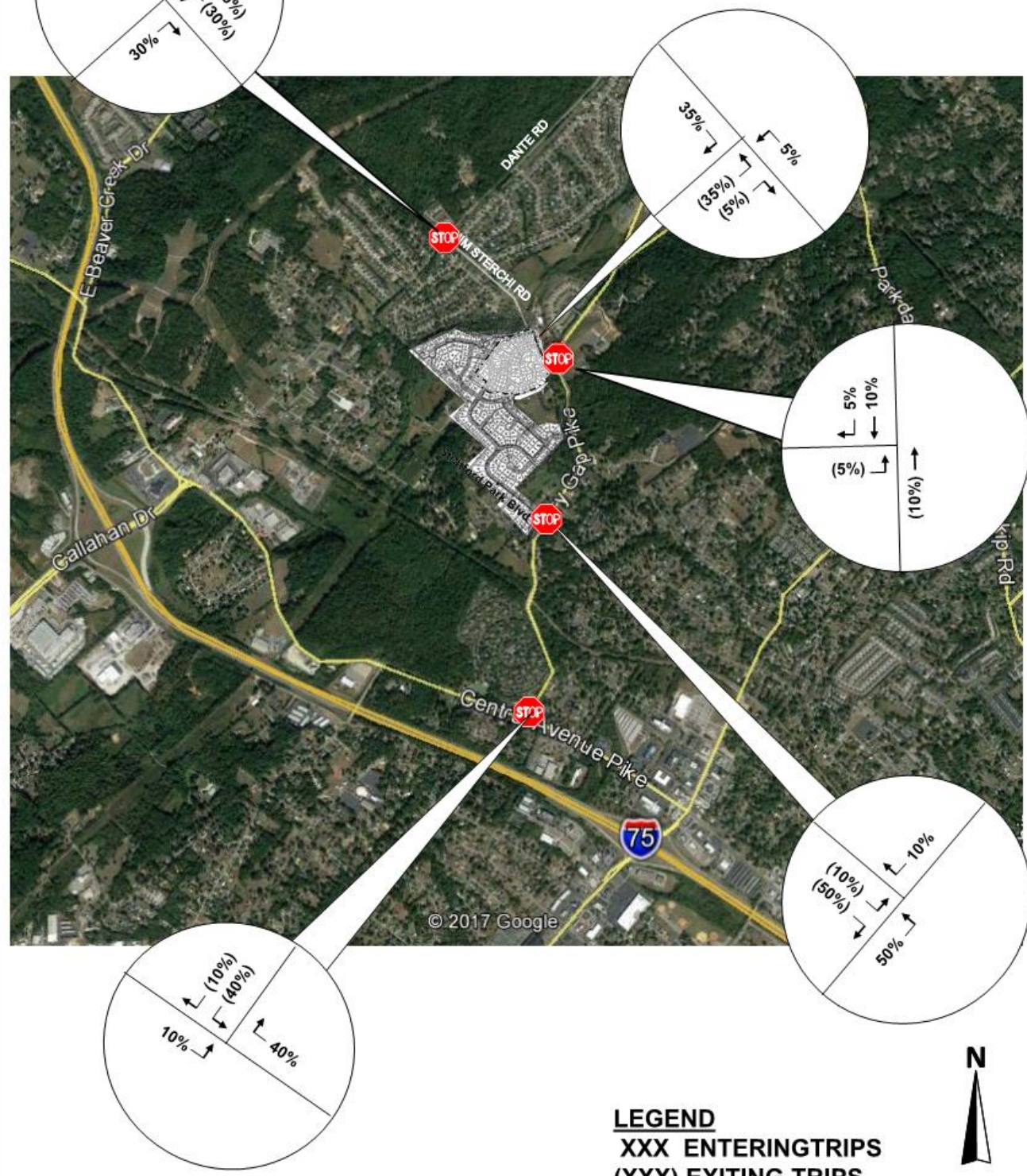
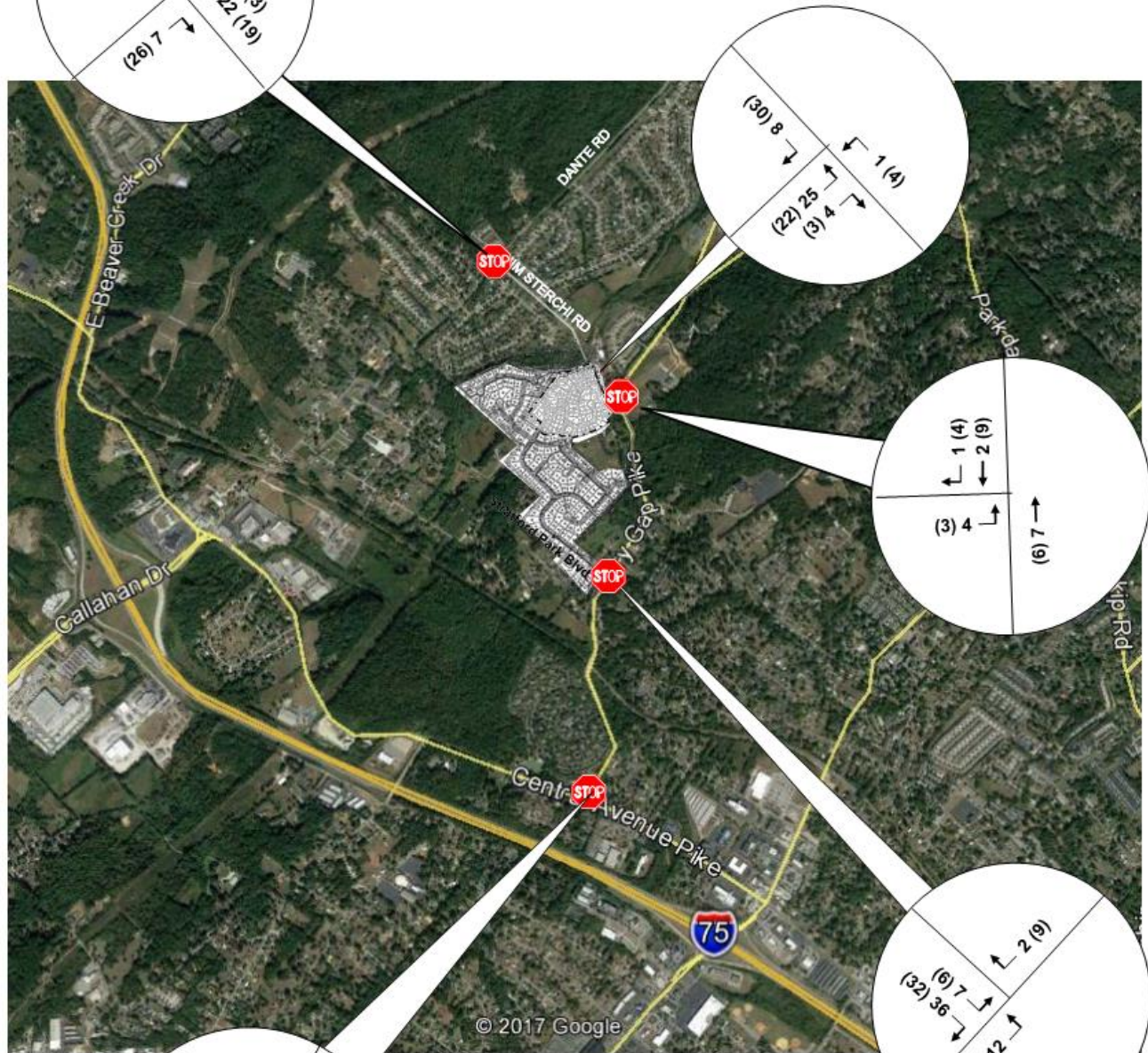


Figure 5

PROJECT TRIPS

Stratford Park Subdivision



LEGEND
 XXX AM PEAK
 (XXX) PM PEAK



Figure 6

Total Projected Traffic Volumes

Background and project traffic volumes were added together to develop post-development traffic volumes for the year 2020. **Figure 7** illustrates this 2020 projection. Using these projections, mitigation measures including traffic control devices and roadway and intersection geometry can be evaluated. Using the Knox County turn lane warrant criteria, the intersection of Pembridge Road with Jim Sterchi Road was evaluated for left- and right-turn lane from Jim Sterchi Road. Turning volumes are well below that required for either left- or right-turn lanes. A right-turn lane from Dry Gap Pike to Stratford Park Boulevard was also found unwarranted as both the right-turn volume and thru traffic was found too low to warrant a lane. This analysis is provided in the Appendix of this report.

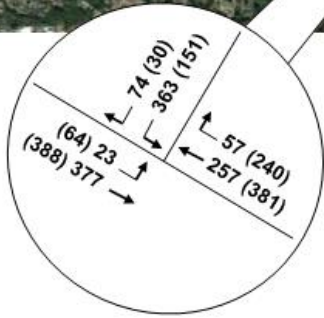
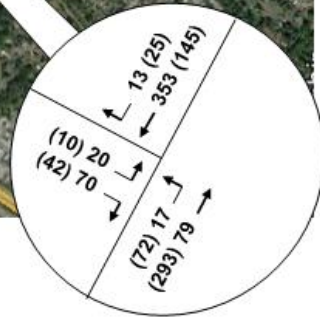
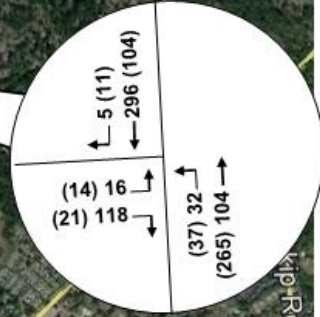
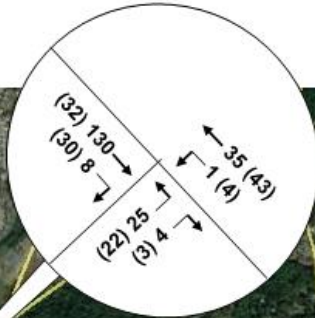
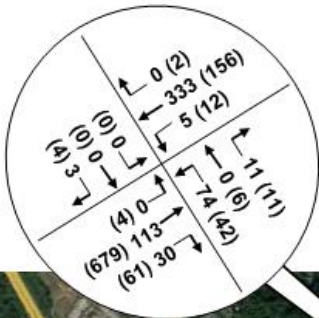
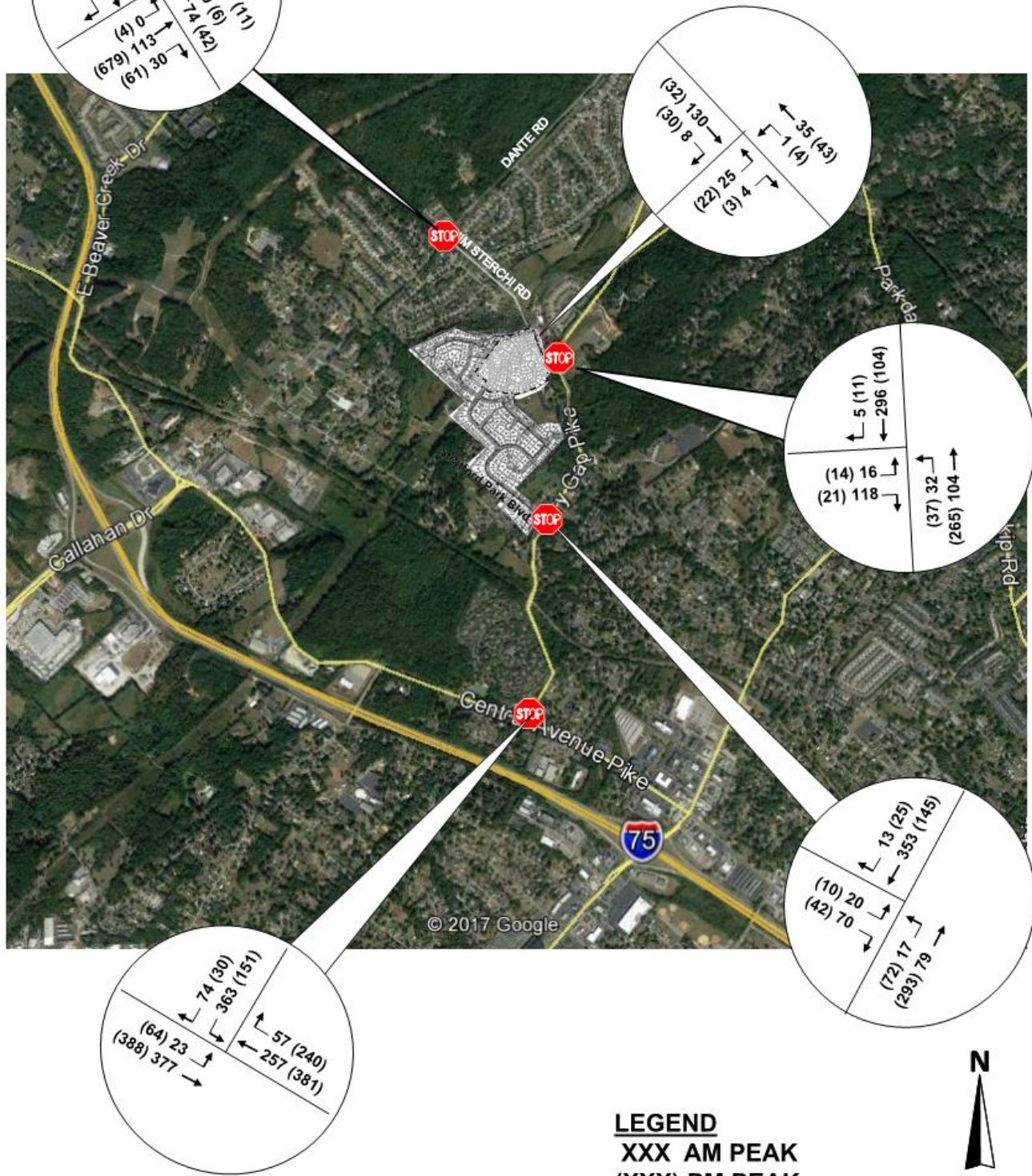
Projected Signal Warrant Analyses

For the projected traffic conditions, Warrants 1A, 1C, 2 and 3B are satisfied for intersection of Dry Gap Pike and Central Avenue Pike. The analyses are summarized as follows:

		<u>Hours</u> <u>100% Satisfied</u>	<u>Hours</u> <u>90% Satisfied</u>
Warrant 1A	Minimum Volume	8 hours	5 hours
Warrant 1B	Interruption to Continuous Traffic Flow	5 hours	2 hours
Warrant 1C	Combination of Parts A & B	8 hours	
Warrant 2	Four Hour	6 hours	
Warrant 3B	Peak-hour Volume	4 hours	

2020 PROJECTED TRAFFIC

Stratford Park Subdivision



Projected Capacity and Level of Service

The development of the site has an insignificant impact on the study intersections. The analysis of the site development conditions is shown in **Table 6**. Results conclude that the study intersections would continue to function at acceptable levels of service. Both subdivision access to Dry Gap Pike and Jim Sterchi should operate at a minimum LOS of B. Dry Gap Pike at Central Avenue Pike will fail during the AM and PM peak hours. Signalization mitigates this poor LOS and would provide a minimum intersection LOS B. **Table 7** summaries the volume to capacity ratio, delay, and LOS measured and projected for this development.

TABLE 6. 2020 PROJECTED TRAFFIC CAPACITY AND LEVEL OF SERVICE

INTERSECTION	TRAFFIC CONTROL	PEAK PERIOD	V/C	DELAY	LOS
Central Avenue Pike & Dry Gap Pike	STOP	AM	1.612/.027	323.1/8.2	F/A
	SB-L/EB-L	PM	.873/.065	81.5/9.2	F/A
<i>with Mitigation</i>	<i>SIGNAL</i>	<i>AM</i>	<i>0.65</i>	<i>12.6</i>	<i>B</i>
		<i>PM</i>	<i>0.59</i>	<i>8.7</i>	<i>A</i>
Dry Gap Pike & Jim Sterchi Road	STOP	AM	.369/.036	15.2/8.4	C/A
	EB/NB-L	PM	.101/.03	11.0/7.6	B/A
Dry Gap Pike & Stratford Park Blvd	STOP	AM	.221/.018	12.8/8.2	B/A
	EB/NB-L	PM	.126/.057	10.8/7.8	B/A
Jim Sterchi Road & Pembroke Road	STOP	AM	.047/.019	9.6/7.6	A/A
	EB/NB-L	PM	.03/.003	9.1/7.4	A/A
Jim Sterchi Road & Dante Road	STOP	AM	.234/.036	15.1/11.7	C/B
	NB/SB	PM	.366/.03	31.1/14.3	D/B

Changes in delay and V/C ratios are minimal with the buildout of the Stratford Park subdivision. Due to the current analyzed capacity and delay for the Dry Gap Pike approach to Central Avenue Pike, any increases in traffic will increase delay significantly until the intersection is signalized.

Table 7 CAPACITY AND LEVEL OF SERVICE SUMMARY

INTERSECTION	TRAFFIC CONTROL	PEAK PERIOD	2017 TRAFFIC			2020 BACKGROUND			2020 PROJECTED		
			V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
Central Avenue Pike & Dry Gap Pike	STOP	AM	1.158/.021	135.0/8.1	F/A	1.458/.024	257.4/8.2	F/A	1.612/.027	323.1/8.2	F/A
	SB-L/EB-L	PM	.521/.058	33.2/8.8	D/A	.673/.067	49.5/9.0	E/A	.873/.065	81.5/9.2	F/A
<i>with Mitigation</i>	<i>SIGNAL</i>	AM	0.59	10.4	B	0.63	11.8	B	0.65	12.6	B
		PM	0.51	7.5	A	0.55	8	A	0.59	8.7	A
Dry Gap Pike & Jim Sterchi Road	STOP	AM	.297/.032	13.4/8.3	B/A	.351/.036	14.7/8.4	B/A	.369/.036	15.2/8.4	C/A
	EB/NB-L	PM	.075/.026	10.2/7.5	B/A	0.087/.03	10.5/7.6	B/A	.101/.03	11.0/7.6	B/A
Dry Gap Pike & Stratford Park Blvd	STOP	AM	.109/.005	11.5/8.1	B/A	.115/.005	11.9/8.2	B/A	.221/.018	12.8/8.2	B/A
	EB/NB-L	PM	.033/.022	10.1/7.6	B/A	.034/.023	10.3/7.6	B/A	.126/.057	10.8/7.8	B/A
Jim Sterchi Road & Pembridge Road	STOP	AM	-	-	-	-	-	-	.047/.019	9.6/7.6	A/A
	EB/NB-L	PM	-	-	-	-	-	-	.03/.003	9.1/7.4	A/A
Jim Sterchi Road & Dante Road	STOP	AM	.137/.033	13.2/11.2	B/B	.163/.036	14.1/11.6	B/B	.234/.036	15.1/11.7	C/B
	NB/SB	PM	.17/.026	21.3/12.9	C/B	.214/.029	24.9/13.8	C/B	.366/.03	31.1/14.3	D/B

Note: Average vehicle delay estimated in seconds. STOP control analyses presented by total minor approach.

Sight Distance

The proposed Pembridge Road intersection with Jim Sterchi Road will be located in a tangent and flat section of Jim Sterchi Road thereby not having vertical or horizontal geometry restricting the lines of sight from Pembridge Road. Sight-distance to the north and south is currently restricted by vegetation adjacent to the road, which would be cleared with this development phase and the proposed intersection. Current available line of sight to the north is approximately 230 feet and 125 feet to the south. A speed limit of 25mph requires a minimum sight-distance of 150 feet to meet the minimum stopping sight-distance as required by the American Association of State Highway and Transportation Officials (AASHTO) and 250 feet to meet the Knox County minimum corner sight-distance standard. With clearing of the adjacent vegetation and trees, the proposed intersection of Pembridge Road with Jim Sterchi Road should meet both criteria thereby acceptable for intersection operations.

RECOMMENDATIONS

The analyses conducted and the review of the traffic volumes identified the following recommendations:

- Minimize landscaping, using low growing vegetation, and signing at the Pembridge Road intersection with Jim Sterchi Road insuring that the required sight distance of 250 feet is provided.
- Install standard object markers and guard rail for the box culvert to the north on Jim Sterchi Road north of the proposed Pembridge Road intersection.
- Post STOP signs (R1-1) on Pembridge Road approach to its intersection with Jim Sterchi Road.
- Signalization should be considered for the intersection of Dry Gap Pike and Central Avenue Pike for the mitigation of current and background failing levels of service.

Intersection design should conform to the recommended standards and practices of the American Association of State Highway and Transportation Officials, the Institute of Transportation Engineers, and the Knoxville Engineering Department.

CONCLUSION

The study update for the Stratford Park subdivision evaluated the projected traffic conditions with the subdivision buildout. Background traffic was determined using a 3.5-percent annual compounded growth rate until the year 2020. Traffic associated with the Stratford Park subdivision buildout was generated and distributed to the existing and proposed site accesses. Using the identified turning movements for the projected traffic conditions, unsignalized and signalized capacity and level of service analyses were conducted using the **Highway Capacity Manual**. Unsignalized levels of service were found to be acceptable for the adjacent study intersections for the existing traffic conditions and these intersections continued to be acceptable for background with and without the proposed subdivision buildout.

The Dry Gap Pike approach to Central Avenue Pike currently fails during the AM peak hour and continues to deteriorate from an existing LOS D to a LOS F during the PM peak hour. The intersection of Dry Gap Pike and Central Avenue Pike currently meets the Four-Hour and Peak-Hour signal warrants and very nearly meets the Combination of the Eight-Hour warrant. The Combination warrant should be fully satisfied with normal traffic growth on Dry Gap Pike by 2020. Signalization of the intersection would mitigate the failing levels of service and provide a minimum LOS B for the projected 2020 traffic conditions.

With the recommendations of this report, the efficient and safe flow of traffic can be maintained for the buildout of the subdivision.

APPENDIX

Trip Generation

Synchro Analysis Reports

Turn Lane Analysis

Jim Sterchi Lines of Sight

Traffic Counts

MUTCD Traffic Signal Warrant Evaluations

TRIP GENERATION

SYNCHRO ANALYSIS REPORTS

Intersection

Int Delay, s/veh 3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	11	106	29	87	265	3
Future Vol, veh/h	11	106	29	87	265	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	81	81	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	163	36	107	421	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	602	423	425 0
Stage 1	423	-	- -
Stage 2	179	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	463	631	1134 -
Stage 1	661	-	- -
Stage 2	852	-	- -
Platoon blocked, %			-
Mov Cap-1 Maneuver	447	631	1134 -
Mov Cap-2 Maneuver	447	-	- -
Stage 1	661	-	- -
Stage 2	823	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	13.4	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1134	-	607	-	-
HCM Lane V/C Ratio	0.032	-	0.297	-	-
HCM Control Delay (s)	8.3	0	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Intersection

Int Delay, s/veh 40.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Traffic Vol, veh/h	19	340	232	43	301	60
Future Vol, veh/h	19	340	232	43	301	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	453	305	57	381	76

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	362	0	838
Stage 1	-	-	334
Stage 2	-	-	504
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1197	-	~ 336
Stage 1	-	-	725
Stage 2	-	-	607
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1197	-	~ 329
Mov Cap-2 Maneuver	-	-	~ 329
Stage 1	-	-	725
Stage 2	-	-	594

Approach	EB	WB	SW
HCM Control Delay, s	0.4	0	114.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1	SWLn2
Capacity (veh/h)	1197	-	-	-	329 708
HCM Lane V/C Ratio	0.021	-	-	-	1.158 0.107
HCM Control Delay (s)	8.1	-	-	-	135 10.7
HCM Lane LOS	A	-	-	-	F B
HCM 95th %tile Q(veh)	0.1	-	-	-	15.6 0.4

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection

Int Delay, s/veh 1.5

Movement	SEL	SER	NEL	NET	SWT	SWR
Traffic Vol, veh/h	13	34	5	71	318	11
Future Vol, veh/h	13	34	5	71	318	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	49	6	86	374	13

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	479	381	387 0
Stage 1	381	-	- -
Stage 2	98	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	545	666	1171 -
Stage 1	691	-	- -
Stage 2	926	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	542	666	1171 -
Mov Cap-2 Maneuver	542	-	- -
Stage 1	691	-	- -
Stage 2	921	-	- -

Approach	SE	NE	SW
HCM Control Delay, s	11.5	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1171	-	626	-	-
HCM Lane V/C Ratio	0.005	-	0.109	-	-
HCM Control Delay (s)	8.1	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection

Int Delay, s/veh 1.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Traffic Vol, veh/h	1	1	2	15	1	4	1	48	6	2	214	1
Future Vol, veh/h	1	1	2	15	1	4	1	48	6	2	214	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	79	79	79	79	79	79	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	8	19	1	5	1	61	8	2	233	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	308	309	233	311	305	65	234	0	0	68	0	0
Stage 1	238	238	-	67	67	-	-	-	-	-	-	-
Stage 2	70	71	-	244	238	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	644	605	806	642	608	999	1333	-	-	1533	-	-
Stage 1	765	708	-	943	839	-	-	-	-	-	-	-
Stage 2	940	836	-	760	708	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	639	604	806	631	607	999	1333	-	-	1533	-	-
Mov Cap-2 Maneuver	639	604	-	631	607	-	-	-	-	-	-	-
Stage 1	764	707	-	942	838	-	-	-	-	-	-	-
Stage 2	933	835	-	747	707	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	10.2	10.5	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1333	-	-	680	702	1533	-
HCM Lane V/C Ratio	0.001	-	-	0.037	0.023	0.001	-
HCM Control Delay (s)	7.7	0	-	10.5	10.2	7.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

HCM Signalized Intersection Capacity Analysis

4: Central Avenue Pk/Central Avenue Pike & Dry Gap Pike

10/10/2017



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	19	340	232	43	301	60
Future Volume (vph)	19	340	232	43	301	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1823		1770	1583
Flt Permitted	0.49	1.00	1.00		0.95	1.00
Satd. Flow (perm)	920	1863	1823		1770	1583
Peak-hour factor, PHF	0.75	0.75	0.76	0.76	0.79	0.79
Adj. Flow (vph)	25	453	305	57	381	76
RTOR Reduction (vph)	0	0	9	0	0	48
Lane Group Flow (vph)	25	453	353	0	381	28
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	16.6	16.6	16.6		15.1	15.1
Effective Green, g (s)	16.6	16.6	16.6		15.1	15.1
Actuated g/C Ratio	0.41	0.41	0.41		0.37	0.37
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	375	759	743		656	587
v/s Ratio Prot		c0.24	0.19		c0.22	
v/s Ratio Perm	0.03					0.02
v/c Ratio	0.07	0.60	0.48		0.58	0.05
Uniform Delay, d1	7.3	9.4	8.9		10.3	8.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	1.3	0.5		1.3	0.0
Delay (s)	7.4	10.7	9.3		11.6	8.2
Level of Service	A	B	A		B	A
Approach Delay (s)		10.5	9.3		11.0	
Approach LOS		B	A		B	

Intersection Summary

HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	40.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	10	19	33	233	86	6
Future Vol, veh/h	10	19	33	233	86	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	52	52	86	86	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	37	38	271	116	8

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	468	120	124 0
Stage 1	120	-	- -
Stage 2	348	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	553	931	1463 -
Stage 1	905	-	- -
Stage 2	715	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	536	931	1463 -
Mov Cap-2 Maneuver	536	-	- -
Stage 1	905	-	- -
Stage 2	693	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	742	-	-
HCM Lane V/C Ratio	0.026	-	0.075	-	-
HCM Control Delay (s)	7.5	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection

Int Delay, s/veh 4.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Traffic Vol, veh/h	50	350	344	185	113	21
Future Vol, veh/h	50	350	344	185	113	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	94	94	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	407	366	197	135	25

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	563	0	987
Stage 1	-	-	464
Stage 2	-	-	523
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1008	-	598
Stage 1	-	-	633
Stage 2	-	-	595
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1008	-	598
Mov Cap-2 Maneuver	-	-	258
Stage 1	-	-	633
Stage 2	-	-	561

Approach	EB	WB	SW
HCM Control Delay, s	1.1	0	29.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1	SWLn2
Capacity (veh/h)	1008	-	-	258	598
HCM Lane V/C Ratio	0.058	-	-	0.521	0.042
HCM Control Delay (s)	8.8	-	-	33.2	11.3
HCM Lane LOS	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	2.8	0.1

Intersection

Int Delay, s/veh 1

Movement	SEL	SER	NEL	NET	SWT	SWR
Traffic Vol, veh/h	4	10	29	264	131	16
Future Vol, veh/h	4	10	29	264	131	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	58	92	92	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	17	32	287	149	18

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	508	158	167 0
Stage 1	158	-	- -
Stage 2	350	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	525	887	1411 -
Stage 1	871	-	- -
Stage 2	713	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	513	887	1411 -
Mov Cap-2 Maneuver	513	-	- -
Stage 1	871	-	- -
Stage 2	697	-	- -

Approach	SE	NE	SW
HCM Control Delay, s	10.1	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET SELn1	SWT	SWR
Capacity (veh/h)	1411	- 734	-	-
HCM Lane V/C Ratio	0.022	- 0.033	-	-
HCM Control Delay (s)	7.6	- 10.1	-	-
HCM Lane LOS	A	- B	-	-
HCM 95th %tile Q(veh)	0.1	- 0.1	-	-

HCM 2010 TWSC
 9: Dante Road & Jim Sterchi Rd/Evan Spence Way

10/11/2017

Intersection

Int Delay, s/veh 1.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Traffic Vol, veh/h	1	1	4	15	1	8	5	351	19	8	118	1
Future Vol, veh/h	1	1	4	15	1	8	5	351	19	8	118	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	75	75	75	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	8	20	1	11	6	413	22	9	139	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	600	605	139	599	595	424	140	0	0	435	0	0
Stage 1	158	158	-	436	436	-	-	-	-	-	-	-
Stage 2	442	447	-	163	159	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	413	412	909	413	417	630	1443	-	-	1125	-	-
Stage 1	844	767	-	599	580	-	-	-	-	-	-	-
Stage 2	594	573	-	839	766	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	400	406	909	403	411	630	1443	-	-	1125	-	-
Mov Cap-2 Maneuver	400	406	-	403	411	-	-	-	-	-	-	-
Stage 1	839	760	-	595	577	-	-	-	-	-	-	-
Stage 2	579	570	-	822	759	-	-	-	-	-	-	-

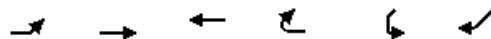
Approach	SE	NW	NE	SW
HCM Control Delay, s	10.7	13.5	0.1	0.5
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1443	-	-	458	641	1125	-
HCM Lane V/C Ratio	0.004	-	-	0.07	0.019	0.008	-
HCM Control Delay (s)	7.5	0	-	13.5	10.7	8.2	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-

HCM Signalized Intersection Capacity Analysis

4: Central Avenue Pk/Central Avenue Pike & Dry Gap Pike

10/11/2017



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	50	350	344	185	113	21
Future Volume (vph)	50	350	344	185	113	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1775		1770	1583
Flt Permitted	0.36	1.00	1.00		0.95	1.00
Satd. Flow (perm)	663	1863	1775		1770	1583
Peak-hour factor, PHF	0.86	0.86	0.94	0.94	0.84	0.84
Adj. Flow (vph)	58	407	366	197	135	25
RTOR Reduction (vph)	0	0	31	0	0	19
Lane Group Flow (vph)	58	407	532	0	135	6
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	16.2	16.2	16.2		8.5	8.5
Effective Green, g (s)	16.2	16.2	16.2		8.5	8.5
Actuated g/C Ratio	0.48	0.48	0.48		0.25	0.25
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	318	895	853		446	399
v/s Ratio Prot		0.22	c0.30		c0.08	
v/s Ratio Perm	0.09					0.00
v/c Ratio	0.18	0.45	0.62		0.30	0.02
Uniform Delay, d1	5.0	5.8	6.5		10.2	9.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.4	1.4		0.4	0.0
Delay (s)	5.3	6.2	7.9		10.6	9.5
Level of Service	A	A	A		B	A
Approach Delay (s)		6.1	7.9		10.4	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	33.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 3.9

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	12	118	32	96	294	3
Future Vol, veh/h	12	118	32	96	294	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	81	81	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	182	40	119	467	5

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	667	469	471	0	-	0
Stage 1	469	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	424	594	1091	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	835	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	407	594	1091	-	-	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	630	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s 14.7 2.1 0
 HCM LOS B

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1091	-	570	-	-
HCM Lane V/C Ratio	0.036	-	0.351	-	-
HCM Control Delay (s)	8.4	0	14.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	-	-

Intersection

Int Delay, s/veh 76.4

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	21	377	257	48	334	67
Future Vol, veh/h	21	377	257	48	334	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	503	338	63	423	85

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	401	0	-	0	929
Stage 1	-	-	-	-	370
Stage 2	-	-	-	-	559
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1158	-	-	-	~ 297
Stage 1	-	-	-	-	699
Stage 2	-	-	-	-	572
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1158	-	-	-	~ 290
Mov Cap-2 Maneuver	-	-	-	-	~ 290
Stage 1	-	-	-	-	699
Stage 2	-	-	-	-	558

Approach

	EB	WB	SW
HCM Control Delay, s	0.4	0	216.2
HCM LOS			F

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBRSWLn1SWLn2		
Capacity (veh/h)	1158	-	-	-	290	676
HCM Lane V/C Ratio	0.024	-	-	-	1.458	0.125
HCM Control Delay (s)	8.2	-	-	-	257.4	11.1
HCM Lane LOS	A	-	-	-	F	B
HCM 95th %tile Q(veh)	0.1	-	-	-	23.4	0.4

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	1.4					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↔		↔	↑	↑	↔
Traffic Vol, veh/h	13	34	5	79	353	11
Future Vol, veh/h	13	34	5	79	353	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	49	6	95	415	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	529	422	428	0	-	0
Stage 1	422	-	-	-	-	-
Stage 2	107	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	510	632	1131	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	507	632	1131	-	-	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	11.9	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET SELn1	SWT	SWR
Capacity (veh/h)	1131	-	592	-
HCM Lane V/C Ratio	0.005	-	0.115	-
HCM Control Delay (s)	8.2	-	11.9	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0	-	0.4	-

Intersection						
Int Delay, s/veh	0					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor1	Major2	Major1		
Conflicting Flow All	1	1	-	0	1
Stage 1	0	0	-	-	-
Stage 2	1	1	-	-	-
Critical Hdwy	6.42	6.52	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-
Follow-up Hdwy	3.518	4.018	-	-	2.218
Pot Cap-1 Maneuver	1022	895	-	-	1622
Stage 1	-	-	-	-	-
Stage 2	1022	895	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	1022	0	-	-	1622
Mov Cap-2 Maneuver	1022	0	-	-	-
Stage 1	-	0	-	-	-
Stage 2	1022	0	-	-	-

Approach	NB	SB	NE
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NER	NBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection

Int Delay, s/veh 2.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	3	52	1	8	1	113	23	3	333	1
Future Vol, veh/h	1	1	3	52	1	8	1	113	23	3	333	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	79	79	79	79	79	79	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	12	66	1	10	1	143	29	3	362	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	535	544	363	537	530	158	363	0	0	172	0	0
Stage 1	369	369	-	160	160	-	-	-	-	-	-	-
Stage 2	166	175	-	377	370	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	456	446	682	455	455	887	1196	-	-	1405	-	-
Stage 1	651	621	-	842	766	-	-	-	-	-	-	-
Stage 2	836	754	-	644	620	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	448	444	682	443	453	887	1196	-	-	1405	-	-
Mov Cap-2 Maneuver	448	444	-	443	453	-	-	-	-	-	-	-
Stage 1	650	619	-	841	765	-	-	-	-	-	-	-
Stage 2	824	753	-	627	618	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	11.6	14.1	0.1	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1196	-	-	474	563	1405	-
HCM Lane V/C Ratio	0.001	-	-	0.163	0.036	0.002	-
HCM Control Delay (s)	8	0	-	14.1	11.6	7.6	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.6	0.1	0	-

HCM Signalized Intersection Capacity Analysis

4: Central Avenue Pk/Central Avenue Pike & Dry Gap Pike

06/19/2018



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	21	377	257	48	334	67
Future Volume (vph)	21	377	257	48	334	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1823		1770	1583
Flt Permitted	0.44	1.00	1.00		0.95	1.00
Satd. Flow (perm)	817	1863	1823		1770	1583
Peak-hour factor, PHF	0.75	0.75	0.76	0.76	0.79	0.79
Adj. Flow (vph)	28	503	338	63	423	85
RTOR Reduction (vph)	0	0	9	0	0	50
Lane Group Flow (vph)	28	503	392	0	423	35
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	19.0	19.0	19.0		17.7	17.7
Effective Green, g (s)	19.0	19.0	19.0		17.7	17.7
Actuated g/C Ratio	0.42	0.42	0.42		0.39	0.39
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	339	774	757		685	613
v/s Ratio Prot		c0.27	0.22		c0.24	
v/s Ratio Perm	0.03					0.02
v/c Ratio	0.08	0.65	0.52		0.62	0.06
Uniform Delay, d1	8.1	10.7	9.9		11.3	8.8
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	1.9	0.6		1.7	0.0
Delay (s)	8.2	12.6	10.5		12.9	8.8
Level of Service	A	B	B		B	A
Approach Delay (s)		12.3	10.5		12.2	
Approach LOS		B	B		B	

Intersection Summary

HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	11	21	37	258	95	7
Future Vol, veh/h	11	21	37	258	95	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	52	52	86	86	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	40	43	300	128	9

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	519	133	138	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	517	916	1446	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	498	916	1446	-	-	-
Mov Cap-2 Maneuver	498	-	-	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	662	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1446	-	711	-	-
HCM Lane V/C Ratio	0.03	-	0.087	-	-
HCM Control Delay (s)	7.6	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection

Int Delay, s/veh 6.3

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	55	388	381	205	125	23
Future Vol, veh/h	55	388	381	205	125	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	94	94	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	451	405	218	149	27

Major/Minor

	Major1	Major2	Minor2
Conflicting Flow All	623	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	958	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	958	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach

	EB	WB	SW
HCM Control Delay, s	1.1	0	43.6
HCM LOS			E

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBRSWLn1SWLn2
Capacity (veh/h)	958	-	-	-
HCM Lane V/C Ratio	0.067	-	-	-
HCM Control Delay (s)	9	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-

Intersection

Int Delay, s/veh 0.9

Movement SEL SER NEL NET SWT SWR

Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	4	10	29	293	145	16
Future Vol, veh/h	4	10	29	293	145	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	58	92	92	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	17	32	318	165	18

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	556	174	183	0	-	0
Stage 1	174	-	-	-	-	-
Stage 2	382	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	492	869	1392	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	690	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	481	869	1392	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	856	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach SE NE SW

HCM Control Delay, s	10.3	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt NEL NET SELn1 SWT SWR

Capacity (veh/h)	1392	-	706	-	-
HCM Lane V/C Ratio	0.023	-	0.034	-	-
HCM Control Delay (s)	7.6	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection						
Int Delay, s/veh	0					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1	0	-	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1622	-	-	-	1021
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1622	-	-	-	1021
Mov Cap-2 Maneuver	-	-	-	-	1021
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022

Approach	NB	SB	NE
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	-	0	-	-	-

Intersection

Int Delay, s/veh 1.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	23	6	8	4	679	35	8	156	2
Future Vol, veh/h	1	1	4	23	6	8	4	679	35	8	156	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	75	75	75	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	8	31	8	11	5	799	41	9	184	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1042	1053	185	1038	1034	819	186	0	0	840	0	0
Stage 1	204	204	-	829	829	-	-	-	-	-	-	-
Stage 2	838	849	-	209	205	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	226	857	209	232	375	1388	-	-	795	-	-
Stage 1	798	733	-	365	385	-	-	-	-	-	-	-
Stage 2	361	377	-	793	732	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	194	222	857	203	227	375	1388	-	-	795	-	-
Mov Cap-2 Maneuver	194	222	-	203	227	-	-	-	-	-	-	-
Stage 1	792	723	-	362	382	-	-	-	-	-	-	-
Stage 2	341	374	-	773	722	-	-	-	-	-	-	-

Approach	SE		NW		NE		SW	
HCM Control Delay, s	13.8		24.9		0		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1388	-	-	230	419	795	-
HCM Lane V/C Ratio	0.003	-	-	0.214	0.029	0.012	-
HCM Control Delay (s)	7.6	0	-	24.9	13.8	9.6	0
HCM Lane LOS	A	A	-	C	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.8	0.1	0	-

HCM Signalized Intersection Capacity Analysis

4: Central Avenue Pk/Central Avenue Pike & Dry Gap Pike

06/19/2018



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	55	388	381	205	125	23
Future Volume (vph)	55	388	381	205	125	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1775		1770	1583
Flt Permitted	0.31	1.00	1.00		0.95	1.00
Satd. Flow (perm)	578	1863	1775		1770	1583
Peak-hour factor, PHF	0.86	0.86	0.94	0.94	0.84	0.84
Adj. Flow (vph)	64	451	405	218	149	27
RTOR Reduction (vph)	0	0	31	0	0	20
Lane Group Flow (vph)	64	451	592	0	149	7
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	18.4	18.4	18.4		9.1	9.1
Effective Green, g (s)	18.4	18.4	18.4		9.1	9.1
Actuated g/C Ratio	0.50	0.50	0.50		0.25	0.25
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	291	939	894		441	394
v/s Ratio Prot		0.24	c0.33		c0.08	
v/s Ratio Perm	0.11					0.00
v/c Ratio	0.22	0.48	0.66		0.34	0.02
Uniform Delay, d1	5.0	5.9	6.7		11.2	10.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.4	1.9		0.5	0.0
Delay (s)	5.4	6.3	8.6		11.7	10.3
Level of Service	A	A	A		B	B
Approach Delay (s)		6.2	8.6		11.5	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	36.5	Sum of lost time (s)	9.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT			TT	TT	
Traffic Vol, veh/h	16	118	32	104	296	5
Future Vol, veh/h	16	118	32	104	296	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	81	81	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	182	40	128	470	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	681	474	478	0	-	0
Stage 1	474	-	-	-	-	-
Stage 2	207	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	416	590	1084	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	828	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	399	590	1084	-	-	-
Mov Cap-2 Maneuver	399	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	795	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1084	-	558	-	-
HCM Lane V/C Ratio	0.036	-	0.369	-	-
HCM Control Delay (s)	8.4	0	15.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	1.7	-	-

Intersection

Int Delay, s/veh 99.9

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	23	377	257	57	363	74
Future Vol, veh/h	23	377	257	57	363	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	76	76	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	503	338	75	459	94

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	413	0	0 940 376
Stage 1	-	-	- 376 -
Stage 2	-	-	- 564 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1146	-	- ~ 293 670
Stage 1	-	-	- 694 -
Stage 2	-	-	- 569 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1146	-	- ~ 285 670
Mov Cap-2 Maneuver	-	-	- ~ 285 -
Stage 1	-	-	- 694 -
Stage 2	-	-	- 554 -

Approach	EB	WB	SW
HCM Control Delay, s	0.5	0	270.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBRSWLn1SWLn2
Capacity (veh/h)	1146	-	-	- 285 670
HCM Lane V/C Ratio	0.027	-	-	- 1.612 0.14
HCM Control Delay (s)	8.2	-	-	- \$ 323.1 11.2
HCM Lane LOS	A	-	-	- F B
HCM 95th %tile Q(veh)	0.1	-	-	- 28 0.5

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	2.7					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↔		↔	↑	↔	
Traffic Vol, veh/h	20	70	17	79	353	13
Future Vol, veh/h	20	70	17	79	353	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	83	83	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	101	20	95	415	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	559	423	431	0	-	0
Stage 1	423	-	-	-	-	-
Stage 2	136	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	490	631	1129	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	481	631	1129	-	-	-
Mov Cap-2 Maneuver	481	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	874	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.8	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1129	-	590	-	-
HCM Lane V/C Ratio	0.018	-	0.221	-	-
HCM Control Delay (s)	8.2	-	12.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-

Intersection						
Int Delay, s/veh	2.6					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	1	35	130	8	25	4
Future Vol, veh/h	1	35	130	8	25	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	38	141	9	27	4

Major/Minor	Minor1	Major2	Major1		
Conflicting Flow All	146	207	-	0	150
Stage 1	0	57	-	-	-
Stage 2	146	150	-	-	-
Critical Hdwy	6.42	6.52	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-
Follow-up Hdwy	3.518	4.018	-	-	2.218
Pot Cap-1 Maneuver	846	690	-	-	1431
Stage 1	-	-	-	-	-
Stage 2	881	773	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	830	0	-	-	1431
Mov Cap-2 Maneuver	830	0	-	-	-
Stage 1	-	0	-	-	-
Stage 2	881	0	-	-	-

Approach	NB	SB	NE
HCM Control Delay, s	9.6	0	6.5
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NER	NBLn1	SBT	SBR
Capacity (veh/h)	1431	-	830	-	-
HCM Lane V/C Ratio	0.019	-	0.047	-	-
HCM Control Delay (s)	7.6	-	9.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection

Int Delay, s/veh 2.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	3	74	1	11	1	113	30	5	333	1
Future Vol, veh/h	1	1	3	74	1	11	1	113	30	5	333	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	79	79	79	79	79	79	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	12	94	1	14	1	143	38	5	362	1

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	545	557	363	546
Stage 1	373	373	-	165
Stage 2	172	184	-	381
Critical Hdwy	7.12	6.52	6.22	7.12
Critical Hdwy Stg 1	6.12	5.52	-	6.12
Critical Hdwy Stg 2	6.12	5.52	-	6.12
Follow-up Hdwy	3.518	4.018	3.318	3.518
Pot Cap-1 Maneuver	449	439	682	448
Stage 1	648	618	-	837
Stage 2	830	747	-	641
Platoon blocked, %				
Mov Cap-1 Maneuver	439	437	682	435
Mov Cap-2 Maneuver	439	437	-	435
Stage 1	647	616	-	836
Stage 2	815	746	-	623

Approach	SE	NW	NE	SW
HCM Control Delay, s	11.7	15.1	0.1	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1196	-	-	465	558	1394	-
HCM Lane V/C Ratio	0.001	-	-	0.234	0.036	0.004	-
HCM Control Delay (s)	8	0	-	15.1	11.7	7.6	0
HCM Lane LOS	A	A	-	C	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0.9	0.1	0	-

HCM Signalized Intersection Capacity Analysis

4: Central Avenue Pk/Central Avenue Pike & Dry Gap Pike

06/19/2018



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	23	377	257	57	363	74
Future Volume (vph)	23	377	257	57	363	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Flt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1817		1770	1583
Flt Permitted	0.42	1.00	1.00		0.95	1.00
Satd. Flow (perm)	779	1863	1817		1770	1583
Peak-hour factor, PHF	0.75	0.75	0.76	0.76	0.79	0.79
Adj. Flow (vph)	31	503	338	75	459	94
RTOR Reduction (vph)	0	0	11	0	0	51
Lane Group Flow (vph)	31	503	402	0	459	43
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	19.9	19.9	19.9		19.2	19.2
Effective Green, g (s)	19.9	19.9	19.9		19.2	19.2
Actuated g/C Ratio	0.41	0.41	0.41		0.40	0.40
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	322	770	751		706	631
v/s Ratio Prot		c0.27	0.22		c0.26	
v/s Ratio Perm	0.04					0.03
v/c Ratio	0.10	0.65	0.54		0.65	0.07
Uniform Delay, d1	8.6	11.3	10.6		11.7	8.9
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	2.0	0.7		2.2	0.0
Delay (s)	8.7	13.3	11.4		13.9	9.0
Level of Service	A	B	B		B	A
Approach Delay (s)		13.1	11.4		13.0	
Approach LOS		B	B		B	

Intersection Summary

HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	48.1	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 TWSC
 1: Dry Gap Pike & Jim Sterchi Rd

06/19/2018

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	14	21	37	265	104	11
Future Vol, veh/h	14	21	37	265	104	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	52	52	86	86	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	40	43	308	141	15

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	542	148	155	0	-	0
Stage 1	148	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	501	899	1425	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	483	899	1425	-	-	-
Mov Cap-2 Maneuver	483	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	656	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1425	-	669	-	-
HCM Lane V/C Ratio	0.03	-	0.101	-	-
HCM Control Delay (s)	7.6	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection

Int Delay, s/veh 11.2

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations	↘	↑	↗		↘	↗
Traffic Vol, veh/h	64	388	381	240	151	30
Future Vol, veh/h	64	388	381	240	151	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	94	94	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	451	405	255	180	36

Major/Minor

	Major1	Major2	Minor2		
Conflicting Flow All	661	0	-	0	1133
Stage 1	-	-	-	-	533
Stage 2	-	-	-	-	600
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	927	-	-	-	224
Stage 1	-	-	-	-	588
Stage 2	-	-	-	-	548
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	927	-	-	-	206
Mov Cap-2 Maneuver	-	-	-	-	206
Stage 1	-	-	-	-	588
Stage 2	-	-	-	-	504

Approach

	EB	WB	SW
HCM Control Delay, s	1.3	0	70
HCM LOS			F

Minor Lane/Major Mvmt

	EBL	EBT	WBT	WBRSWLn1	SWLn2
Capacity (veh/h)	927	-	-	-	206
HCM Lane V/C Ratio	0.08	-	-	-	0.873
HCM Control Delay (s)	9.2	-	-	-	81.5
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	6.7

Intersection						
Int Delay, s/veh	2.3					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations	↔		↔	↑	↑	↔
Traffic Vol, veh/h	10	42	72	293	145	25
Future Vol, veh/h	10	42	72	293	145	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	58	58	92	92	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	72	78	318	165	28

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	654	179	193	0	-	0
Stage 1	179	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	431	864	1380	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	407	864	1380	-	-	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	591	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10.8	1.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET SELn1	SWT	SWR
Capacity (veh/h)	1380	-	711	-
HCM Lane V/C Ratio	0.057	-	0.126	-
HCM Control Delay (s)	7.8	-	10.8	-
HCM Lane LOS	A	-	B	-
HCM 95th %tile Q(veh)	0.2	-	0.4	-

Intersection						
Int Delay, s/veh	1.9					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	4	43	32	30	22	3
Future Vol, veh/h	4	43	32	30	22	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	47	35	33	24	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	67	0	-	0	106 51
Stage 1	-	-	-	-	51 -
Stage 2	-	-	-	-	55 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1535	-	-	-	892 1017
Stage 1	-	-	-	-	971 -
Stage 2	-	-	-	-	968 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1535	-	-	-	889 1017
Mov Cap-2 Maneuver	-	-	-	-	889 -
Stage 1	-	-	-	-	971 -
Stage 2	-	-	-	-	965 -

Approach	NB	SB	NE
HCM Control Delay, s	0.6	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NBL	NBT	SBT	SBR
Capacity (veh/h)	903	1535	-	-	-
HCM Lane V/C Ratio	0.03	0.003	-	-	-
HCM Control Delay (s)	9.1	7.4	0	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-	-

Intersection

Int Delay, s/veh 2.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	4	42	6	11	4	679	61	12	156	2
Future Vol, veh/h	1	1	4	42	6	11	4	679	61	12	156	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	75	75	75	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	8	56	8	15	5	799	72	14	184	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1068	1093	185	1062	1058	835	186	0	0	871	0	0
Stage 1	213	213	-	844	844	-	-	-	-	-	-	-
Stage 2	855	880	-	218	214	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	199	214	857	201	225	368	1388	-	-	774	-	-
Stage 1	789	726	-	358	379	-	-	-	-	-	-	-
Stage 2	353	365	-	784	725	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	182	208	857	194	219	368	1388	-	-	774	-	-
Mov Cap-2 Maneuver	182	208	-	194	219	-	-	-	-	-	-	-
Stage 1	783	711	-	355	376	-	-	-	-	-	-	-
Stage 2	329	362	-	759	711	-	-	-	-	-	-	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	14.3	31.1	0	0.7
HCM LOS	B	D		

Minor Lane/Major Mvmt	NEL	NET	NERNWLn1	SELn1	SWL	SWT	SWR
Capacity (veh/h)	1388	-	-	215	401	774	-
HCM Lane V/C Ratio	0.003	-	-	0.366	0.03	0.018	-
HCM Control Delay (s)	7.6	0	-	31.1	14.3	9.7	0
HCM Lane LOS	A	A	-	D	B	A	A
HCM 95th %tile Q(veh)	0	-	-	1.6	0.1	0.1	-

HCM Signalized Intersection Capacity Analysis

4: Central Avenue Pk/Central Avenue Pike & Dry Gap Pike

06/19/2018



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	64	388	381	240	151	30
Future Volume (vph)	64	388	381	240	151	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	4.5
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.95		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	1766		1770	1583
Flt Permitted	0.28	1.00	1.00		0.95	1.00
Satd. Flow (perm)	524	1863	1766		1770	1583
Peak-hour factor, PHF	0.86	0.86	0.94	0.94	0.84	0.84
Adj. Flow (vph)	74	451	405	255	180	36
RTOR Reduction (vph)	0	0	35	0	0	27
Lane Group Flow (vph)	74	451	625	0	180	9
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4					6
Actuated Green, G (s)	20.6	20.6	20.6		10.2	10.2
Effective Green, g (s)	20.6	20.6	20.6		10.2	10.2
Actuated g/C Ratio	0.52	0.52	0.52		0.26	0.26
Clearance Time (s)	4.5	4.5	4.5		4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	271	964	914		453	405
v/s Ratio Prot		0.24	c0.35		c0.10	
v/s Ratio Perm	0.14					0.01
v/c Ratio	0.27	0.47	0.68		0.40	0.02
Uniform Delay, d1	5.4	6.1	7.2		12.3	11.1
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.5	0.4	2.1		0.6	0.0
Delay (s)	5.9	6.5	9.3		12.8	11.1
Level of Service	A	A	A		B	B
Approach Delay (s)		6.4	9.3		12.5	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	39.8	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

TURN LANE ANALYSIS

TABLE 4B

RIGHT-TURN LANE VOLUME THRESHOLDS

FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 35 MPH OR LESS

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		(25)				13	
100 - 149 150 - 199	NOT REQUIRED						
200 - 249 250 - 299							Yes
300 - 349 350 - 399				Yes	Yes	Yes	
400 - 449 450 - 499			Yes Yes	Yes Yes	Yes Yes	Yes Yes	
500 - 549 550 - 599		Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	
600 or More	Yes	Yes	Yes	Yes	Yes	Yes	

LEFT-TURN LANE VOLUME THRESHOLDS

FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 35 MPH OR LESS

(If the left-turn volume exceeds the table value a left -turn lane is needed) 17 (72)

OPPOSING VOLUME	THROUGH VOLUME PLUS RIGHT-TURN VOLUME *					
	100 - 149	150 - 199	200 - 249	250 - 299	300 - 349	350 - 399
100 - 149 150 - 199	300 245	235 200	185 160	145 130	120 110	100 90
200 - 249 250 - 299	205 175	170 150	140 125	115 105	100 90	80 70
300 - 349 350 - 399	155 135	135 120	110 100	95 85	80 70	65 60
400 - 449 450 - 499	120 105	105 90	90 80	75 70	65 60	55 50
500 - 549 550 - 599	95 85	80 70	70 65	65 60	55 50	50 45
600 - 649 650 - 699	75 70	65 60	60 55	55 50	45 40	40 35
700 - 749 750 or More	65 60	55 50	50 45	45 40	35 35	30 30

**Pembridge Rd at
Jim Sterchi Rd**

TABLE 4B

**RIGHT-TURN LANE VOLUME THRESHOLDS
FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 35 MPH OR LESS**

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	8 (30)					
100 - 149 150 - 199						
200 - 249 250 - 299						Yes
300 - 349 350 - 399				Yes	Yes	Yes
400 - 449 450 - 499			Yes Yes	Yes Yes	Yes Yes	Yes Yes
500 - 549 550 - 599		Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes
600 or More	Yes	Yes	Yes	Yes	Yes	Yes

**NOT
REQUIRED**

**LEFT-TURN LANE VOLUME THRESHOLDS
FOR TWO-LANE ROADWAYS WITH A PREVAILING SPEED OF 35 MPH OR LESS**

(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	1 (4) 300 245	235 200	185 160	145 130	120 110	100 90
200 - 249 250 - 299	205 175	170 150	140 125	115 105	100 90	80 70
300 - 349 350 - 399	155 135	135 120	110 100	95 85	80 70	65 60
400 - 449 450 - 499	120 105	105 90	90 80	75 70	65 60	55 50
500 - 549 550 - 599	95 85	80 70	70 65	65 60	55 50	50 45
600 - 649 650 - 699	75 70	65 60	60 55	55 50	45 40	40 35
700 - 749 750 or More	65 60	55 50	50 45	45 40	35 35	30 30

**JIM STERCHI RD
LINES OF SIGHT**



**Jim Sterchi Rd
Looking South**



**Jim Sterchi Rd
Looking North**

TRAFFIC COUNTS

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : DryGap_CentralAvPk
 Site Code : 00000002
 Start Date : 10/3/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	DRY GAP PIKE Southbound				CENTRAL AVE PIKE Westbound				DRY GAP PIKE Northbound				CENTRAL AVE PIKE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	42	0	2	44	0	34	14	48	0	0	0	0	4	43	0	47	139
07:15 AM	44	0	8	52	0	31	7	38	0	0	0	0	6	62	0	68	158
07:30 AM	77	0	11	88	0	52	13	65	0	0	0	0	5	65	0	70	223
07:45 AM	73	0	20	93	0	55	7	62	0	0	0	0	7	112	0	119	274
Total	236	0	41	277	0	172	41	213	0	0	0	0	22	282	0	304	794
08:00 AM	98	0	17	115	0	73	18	91	0	0	0	0	6	109	0	115	321
08:15 AM	53	0	12	65	0	52	5	57	0	0	0	0	1	54	0	55	177
08:30 AM	64	0	6	70	0	38	11	49	0	0	0	0	5	67	0	72	191
08:45 AM	35	0	16	51	0	41	16	57	0	0	0	0	3	64	0	67	175
Total	250	0	51	301	0	204	50	254	0	0	0	0	15	294	0	309	864

*** BREAK ***

04:00 PM	25	0	5	30	0	62	51	113	0	0	0	0	10	51	0	61	204
04:15 PM	30	0	6	36	0	84	52	136	0	0	0	0	12	79	0	91	263
04:30 PM	32	0	6	38	0	83	36	119	0	0	0	0	11	105	0	116	273
04:45 PM	29	0	11	40	0	83	53	136	0	0	0	0	10	93	0	103	279
Total	116	0	28	144	0	312	192	504	0	0	0	0	43	328	0	371	1019
05:00 PM	25	0	3	28	0	92	42	134	0	0	0	0	14	63	0	77	239
05:15 PM	27	0	1	28	0	86	54	140	0	0	0	0	15	89	0	104	272
05:30 PM	24	0	8	32	0	72	53	125	0	0	0	0	16	83	0	99	256
05:45 PM	33	0	11	44	0	53	63	116	0	0	0	0	17	75	0	92	252
Total	109	0	23	132	0	303	212	515	0	0	0	0	62	310	0	372	1019
Grand Total	711	0	143	854	0	991	495	1486	0	0	0	0	142	1214	0	1356	3696
Apprch %	83.3	0	16.7		0	66.7	33.3		0	0	0		10.5	89.5	0		
Total %	19.2	0	3.9	23.1	0	26.8	13.4	40.2	0	0	0	0	3.8	32.8	0	36.7	

Start Time	DRY GAP PIKE Southbound				CENTRAL AVE PIKE Westbound				DRY GAP PIKE Northbound				CENTRAL AVE PIKE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	77	0	11	88	0	52	13	65	0	0	0	0	5	65	0	70	223
07:45 AM	73	0	20	93	0	55	7	62	0	0	0	0	7	112	0	119	274
08:00 AM	98	0	17	115	0	73	18	91	0	0	0	0	6	109	0	115	321
08:15 AM	53	0	12	65	0	52	5	57	0	0	0	0	1	54	0	55	177
Total Volume	301	0	60	361	0	232	43	275	0	0	0	0	19	340	0	359	995
% App. Total	83.4	0	16.6		0	84.4	15.6		0	0	0		5.3	94.7	0		
PHF	.768	.000	.750	.785	.000	.795	.597	.755	.000	.000	.000	.000	.679	.759	.000	.754	.775

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	32	0	6	38	0	83	36	119	0	0	0	0	11	105	0	116	273
04:45 PM	29	0	11	40	0	83	53	136	0	0	0	0	10	93	0	103	279
05:00 PM	25	0	3	28	0	92	42	134	0	0	0	0	14	63	0	77	239
05:15 PM	27	0	1	28	0	86	54	140	0	0	0	0	15	89	0	104	272
Total Volume	113	0	21	134	0	344	185	529	0	0	0	0	50	350	0	400	1063
% App. Total	84.3	0	15.7		0	65	35		0	0	0		12.5	87.5	0		
PHF	.883	.000	.477	.838	.000	.935	.856	.945	.000	.000	.000	.000	.833	.833	.000	.862	.953

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : DryGap_JimSterchi
 Site Code : 00000004
 Start Date : 10/3/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	DRY GAP PIKE Southbound				JIM STERCHI RD Westbound				DRY GAP PIKE Northbound				JIM STERCHI RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	44	0	44	0	0	0	0	2	21	0	23	3	0	21	24	91
07:15 AM	0	36	0	36	0	0	0	0	9	13	0	22	0	0	45	45	103
07:30 AM	0	103	3	106	0	0	0	0	7	28	0	35	6	0	28	34	175
07:45 AM	0	82	0	82	0	0	0	0	11	25	0	36	2	0	12	14	132
Total	0	265	3	268	0	0	0	0	29	87	0	116	11	0	106	117	501
08:00 AM	0	54	1	55	0	0	0	0	2	20	0	22	3	0	9	12	89
08:15 AM	0	53	0	53	0	0	0	0	4	17	0	21	1	0	5	6	80
08:30 AM	0	72	1	73	0	0	0	0	9	41	0	50	0	0	19	19	142
08:45 AM	0	31	2	33	0	0	0	0	6	20	0	26	1	0	6	7	66
Total	0	210	4	214	0	0	0	0	21	98	0	119	5	0	39	44	377
*** BREAK ***																	
04:00 PM	0	15	2	17	0	0	0	0	10	45	0	55	3	0	4	7	79
04:15 PM	0	17	1	18	0	0	0	0	9	68	0	77	3	0	11	14	109
04:30 PM	0	26	0	26	0	0	0	0	7	50	0	57	4	0	1	5	88
04:45 PM	0	28	3	31	0	0	0	0	7	70	0	77	0	0	3	3	111
Total	0	86	6	92	0	0	0	0	33	233	0	266	10	0	19	29	387
05:00 PM	0	13	1	14	0	0	0	0	5	39	0	44	1	0	5	6	64
05:15 PM	0	10	0	10	0	0	0	0	5	35	0	40	1	0	2	3	53
05:30 PM	0	30	1	31	0	0	0	0	7	91	0	98	1	0	6	7	136
05:45 PM	0	25	2	27	0	0	0	0	8	58	0	66	1	0	5	6	99
Total	0	78	4	82	0	0	0	0	25	223	0	248	4	0	18	22	352
Grand Total	0	639	17	656	0	0	0	0	108	641	0	749	30	0	182	212	1617
Apprch %	0	97.4	2.6		0	0	0		14.4	85.6	0		14.2	0	85.8		
Total %	0	39.5	1.1	40.6	0	0	0	0	6.7	39.6	0	46.3	1.9	0	11.3	13.1	

Start Time	DRY GAP PIKE Southbound				JIM STERCHI RD Westbound				DRY GAP PIKE Northbound				JIM STERCHI RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	44	0	44	0	0	0	0	2	21	0	23	3	0	21	24	91
07:15 AM	0	36	0	36	0	0	0	0	9	13	0	22	0	0	45	45	103
07:30 AM	0	103	3	106	0	0	0	0	7	28	0	35	6	0	28	34	175
07:45 AM	0	82	0	82	0	0	0	0	11	25	0	36	2	0	12	14	132
Total Volume	0	265	3	268	0	0	0	0	29	87	0	116	11	0	106	117	501
% App. Total	0	98.9	1.1		0	0	0		25	75	0		9.4	0	90.6		
PHF	.000	.643	.250	.632	.000	.000	.000	.000	.659	.777	.000	.806	.458	.000	.589	.650	.716

Start Time	DRY GAP PIKE Southbound				JIM STERCHI RD Westbound				DRY GAP PIKE Northbound				JIM STERCHI RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	15	2	17	0	0	0	0	10	45	0	55	3	0	4	7	79
04:15 PM	0	17	1	18	0	0	0	0	9	68	0	77	3	0	11	14	109
04:30 PM	0	26	0	26	0	0	0	0	7	50	0	57	4	0	1	5	88
04:45 PM	0	28	3	31	0	0	0	0	7	70	0	77	0	0	3	3	111
Total Volume	0	86	6	92	0	0	0	0	33	233	0	266	10	0	19	29	387
% App. Total	0	93.5	6.5		0	0	0		12.4	87.6	0		34.5	0	65.5		
PHF	.000	.768	.500	.742	.000	.000	.000	.000	.825	.832	.000	.864	.625	.000	.432	.518	.872

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : DryGap_StratfordPark
 Site Code : 00000003
 Start Date : 10/3/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	DRY GAP PIKE Southbound				STRATFORD PARK BLVD Westbound				DRY GAP PIKE Northbound				STRATFORD PARK BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	34	0	34	0	0	0	0	1	14	0	15	1	0	11	12	61
07:15 AM	0	78	1	79	0	0	0	0	3	16	0	19	2	0	10	12	110
07:30 AM	0	95	2	97	0	0	0	0	0	22	0	22	6	0	11	17	136
07:45 AM	0	81	3	84	0	0	0	0	2	21	0	23	0	0	7	7	114
Total	0	288	6	294	0	0	0	0	6	73	0	79	9	0	39	48	421
08:00 AM	0	64	5	69	0	0	0	0	0	12	0	12	5	0	6	11	92
08:15 AM	0	50	4	54	0	0	0	0	2	12	0	14	0	0	11	11	79
08:30 AM	0	49	1	50	0	0	0	0	0	21	0	21	0	0	8	8	79
08:45 AM	0	39	1	40	0	0	0	0	3	22	0	25	1	0	4	5	70
Total	0	202	11	213	0	0	0	0	5	67	0	72	6	0	29	35	320
*** BREAK ***																	
04:00 PM	0	24	6	30	0	0	0	0	8	41	0	49	2	0	6	8	87
04:15 PM	0	42	1	43	0	0	0	0	3	41	0	44	1	0	4	5	92
04:30 PM	0	16	0	16	0	0	0	0	12	44	0	56	1	0	4	5	77
04:45 PM	0	31	3	34	0	0	0	0	4	53	0	57	2	0	1	3	94
Total	0	113	10	123	0	0	0	0	27	179	0	206	6	0	15	21	350
05:00 PM	0	27	1	28	0	0	0	0	9	62	0	71	0	0	2	2	101
05:15 PM	0	36	3	39	0	0	0	0	6	69	0	75	1	0	5	6	120
05:30 PM	0	33	5	38	0	0	0	0	5	75	0	80	2	0	2	4	122
05:45 PM	0	35	7	42	0	0	0	0	9	58	0	67	1	0	1	2	111
Total	0	131	16	147	0	0	0	0	29	264	0	293	4	0	10	14	454
Grand Total	0	734	43	777	0	0	0	0	67	583	0	650	25	0	93	118	1545
Apprch %	0	94.5	5.5		0	0	0		10.3	89.7	0		21.2	0	78.8		
Total %	0	47.5	2.8	50.3	0	0	0	0	4.3	37.7	0	42.1	1.6	0	6	7.6	

Start Time	DRY GAP PIKE Southbound				STRATFORD PARK BLVD Westbound				DRY GAP PIKE Northbound				STRATFORD PARK BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	78	1	79	0	0	0	0	3	16	0	19	2	0	10	12	110
07:30 AM	0	95	2	97	0	0	0	0	0	22	0	22	6	0	11	17	136
07:45 AM	0	81	3	84	0	0	0	0	2	21	0	23	0	0	7	7	114
08:00 AM	0	64	5	69	0	0	0	0	0	12	0	12	5	0	6	11	92
Total Volume	0	318	11	329	0	0	0	0	5	71	0	76	13	0	34	47	452
% App. Total	0	96.7	3.3		0	0	0		6.6	93.4	0		27.7	0	72.3		
PHF	.000	.837	.550	.848	.000	.000	.000	.000	.417	.807	.000	.826	.542	.000	.773	.691	.831

Start Time	DRY GAP PIKE Southbound				STRATFORD PARK BLVD Westbound				DRY GAP PIKE Northbound				STRATFORD PARK BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	27	1	28	0	0	0	0	9	62	0	71	0	0	2	2	101
05:15 PM	0	36	3	39	0	0	0	0	6	69	0	75	1	0	5	6	120
05:30 PM	0	33	5	38	0	0	0	0	5	75	0	80	2	0	2	4	122
05:45 PM	0	35	7	42	0	0	0	0	9	58	0	67	1	0	1	2	111
Total Volume	0	131	16	147	0	0	0	0	29	264	0	293	4	0	10	14	454
% App. Total	0	89.1	10.9		0	0	0		9.9	90.1	0		28.6	0	71.4		
PHF	.000	.910	.571	.875	.000	.000	.000	.000	.806	.880	.000	.916	.500	.000	.500	.583	.930

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : Dante_JimSterchi_2
 Site Code : 00000001
 Start Date : 10/17/2017
 Page No : 1

Groups Printed- Unshifted

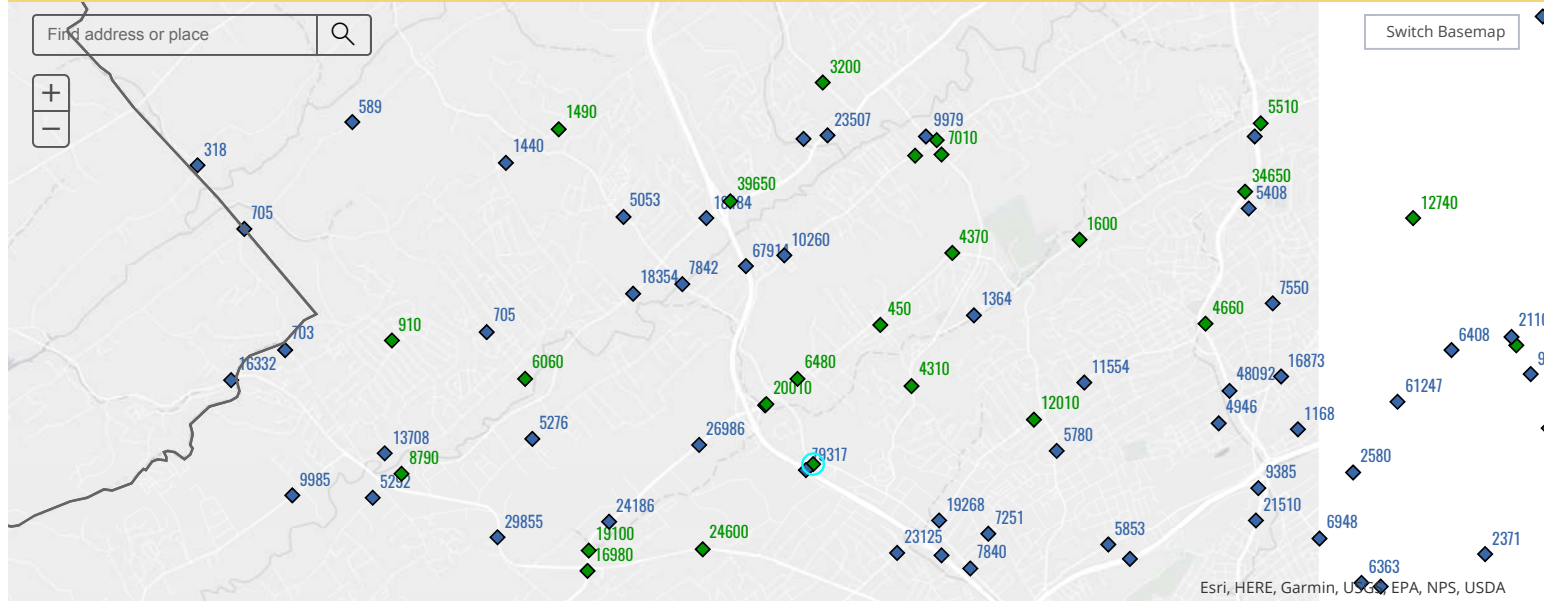
Start Time	JIM STERCHI RD Southbound				DANTE RD Westbound				JIM STERCHI RD Northbound				DANTE RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	1	1	0	69	0	69	8	0	0	8	0	16	7	23	101
07:15 AM	0	0	0	0	0	65	0	65	20	0	2	22	0	26	8	34	121
07:30 AM	0	0	2	2	1	98	0	99	10	0	3	13	0	23	4	27	141
07:45 AM	0	0	0	0	2	68	0	70	9	0	2	11	0	37	2	39	120
Total	0	0	3	3	3	300	0	303	47	0	7	54	0	102	21	123	483
08:00 AM	0	0	0	0	1	70	0	71	4	0	1	5	0	20	2	22	98
*** BREAK ***																	
Total	0	0	0	0	1	70	0	71	4	0	1	5	0	20	2	22	98
*** BREAK ***																	
05:00 PM	0	0	1	1	1	42	0	43	0	4	0	4	1	151	7	159	207
05:15 PM	0	0	2	2	2	36	1	39	5	2	3	10	1	148	10	159	210
05:30 PM	0	0	1	1	1	29	0	30	11	0	4	15	0	160	10	170	216
05:45 PM	0	0	0	0	3	34	1	38	5	0	0	5	2	153	5	160	203
Total	0	0	4	4	7	141	2	150	21	6	7	34	4	612	32	648	836
Grand Total	0	0	7	7	11	511	2	524	72	6	15	93	4	734	55	793	1417
Apprch %	0	0	100		2.1	97.5	0.4		77.4	6.5	16.1		0.5	92.6	6.9		
Total %	0	0	0.5	0.5	0.8	36.1	0.1	37	5.1	0.4	1.1	6.6	0.3	51.8	3.9	56	

Start Time	JIM STERCHI RD Southbound				DANTE RD Westbound				JIM STERCHI RD Northbound				DANTE RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	1	1	0	69	0	69	8	0	0	8	0	16	7	23	101
07:15 AM	0	0	0	0	0	65	0	65	20	0	2	22	0	26	8	34	121
07:30 AM	0	0	2	2	1	98	0	99	10	0	3	13	0	23	4	27	141
07:45 AM	0	0	0	0	2	68	0	70	9	0	2	11	0	37	2	39	120
Total Volume	0	0	3	3	3	300	0	303	47	0	7	54	0	102	21	123	483
% App. Total	0	0	100		1	99	0		87	0	13		0	82.9	17.1		
PHF	.000	.000	.375	.375	.375	.765	.000	.765	.588	.000	.583	.614	.000	.689	.656	.788	.856

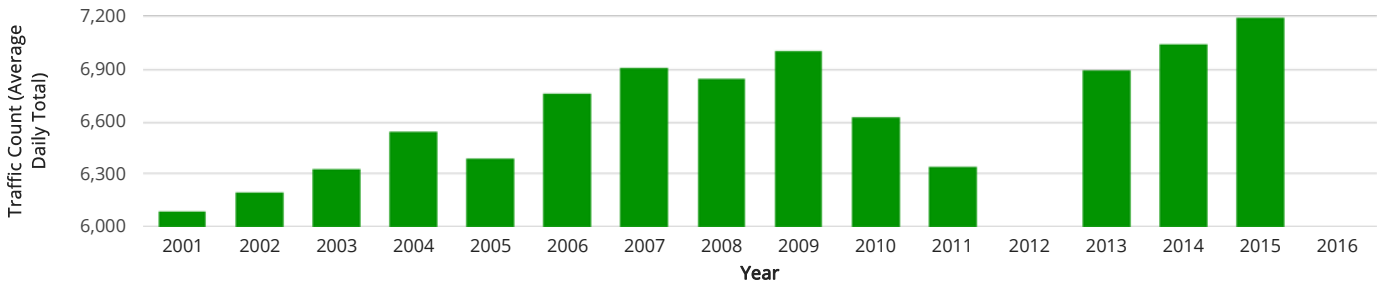
Start Time	JIM STERCHI RD Southbound				DANTE RD Westbound				JIM STERCHI RD Northbound				DANTE RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	1	1	1	42	0	43	0	4	0	4	1	151	7	159	207
05:15 PM	0	0	2	2	2	36	1	39	5	2	3	10	1	148	10	159	210
05:30 PM	0	0	1	1	1	29	0	30	11	0	4	15	0	160	10	170	216
05:45 PM	0	0	0	0	3	34	1	38	5	0	0	5	2	153	5	160	203
Total Volume	0	0	4	4	7	141	2	150	21	6	7	34	4	612	32	648	836
% App. Total	0	0	100		4.7	94	1.3		61.8	17.6	20.6		0.6	94.4	4.9		
PHF	.000	.000	.500	.500	.583	.839	.500	.872	.477	.375	.438	.567	.500	.956	.800	.953	.968



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Central Avenue Pk - N of Murray Rd (Station ID: 093M025)



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Knoxville Region Traffic Count Program

The TPO conducts traffic counts at over 300 locations in Knox and Blount Counties. These annual counts supplement those collected by the Tennessee Department of Transportation at several thousand other locations across the 10-county region.

About the Counts

The traffic count data are given in the standard "Average Daily Traffic" format, which represents the volume of traffic, in both directions, at a particular location on an average day during that particular year. The average traffic is computed by taking the raw traffic count data that is collected usually over a 24-hour period and then adjusting it by factors to account for daily and seasonal variations.

[Download Traffic History and Station Location \(CSV\)](#)

[Download Count Station GIS Shapefile with Traffic History \(ZIP\)](#)

Traffic Count Maps

PDF files showing MPC and TDOT counts at stations across Knox and Blount Counties are available for 2007-2014. Maps are 36" tall by 48" wide.

Blount County

2014

Knox County

2014



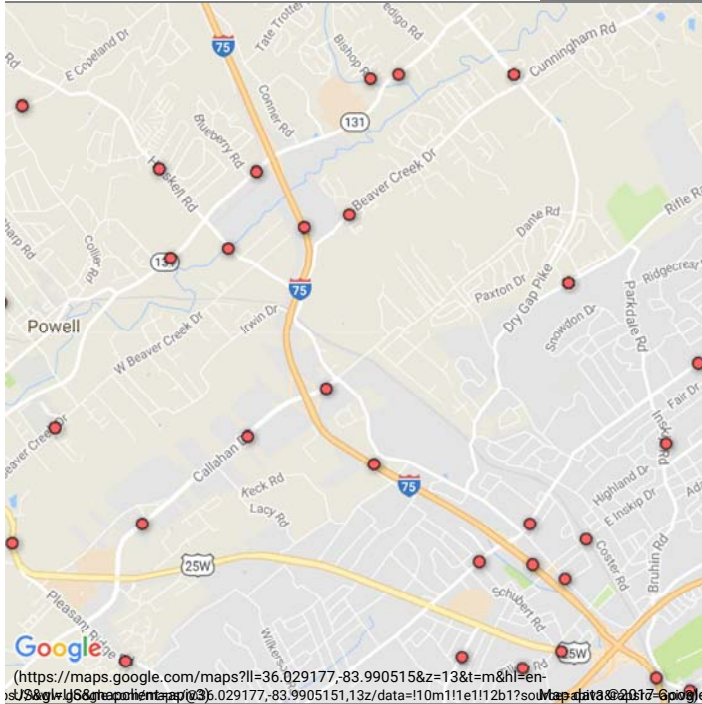
Traffic History

Traffic History reflects the Annual Average Daily Traffic (AADT) count along specific locations on Tennessee's road network

View stations on map:

Non-Map Record Search:

Station Number:



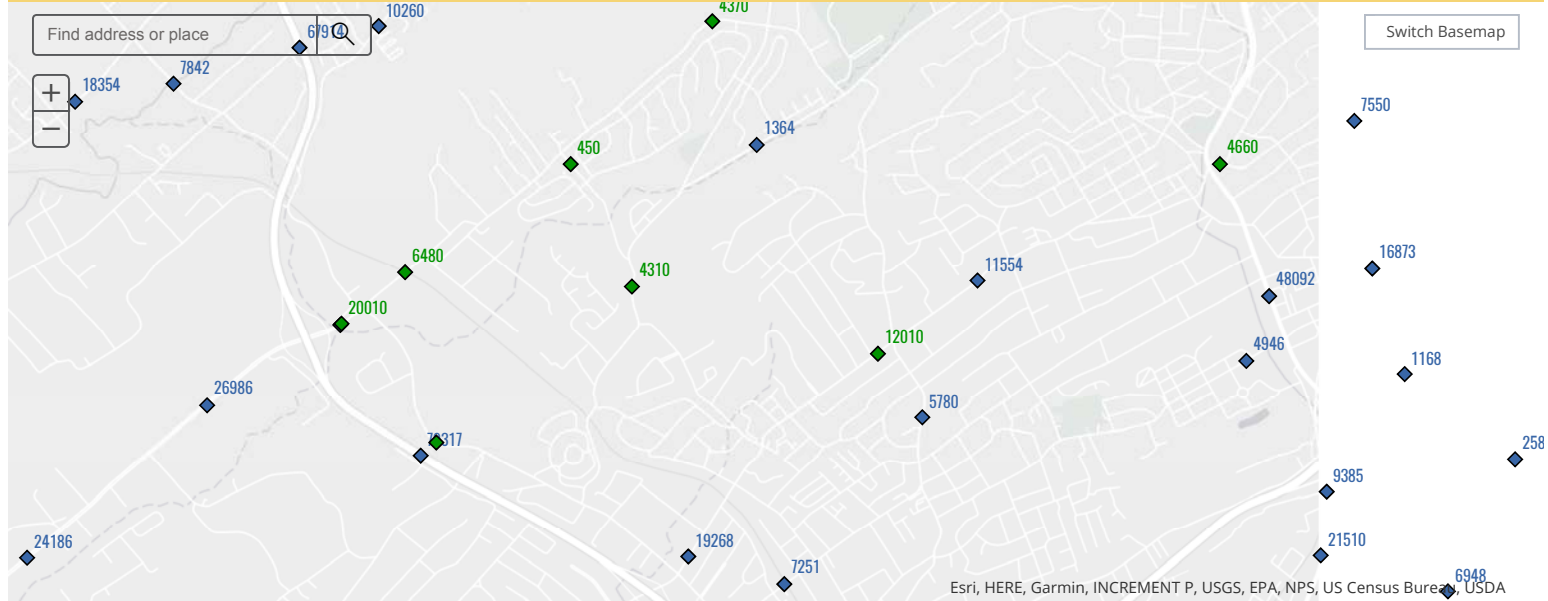
Station Informa

Station	000451
Route	5623
Location	DANTE SCHOOL OF CENTRAL
County	Knox
2016	7119
2015	6627
2014	6440
2013	6415
2012	23312
2011	22044
2010	21243
2009	20624
2008	19101
2007	18545
2006	18071
2005	15500
2004	NA
2003	NA
2002	NA
2001	NA
2000	NA
1999	NA

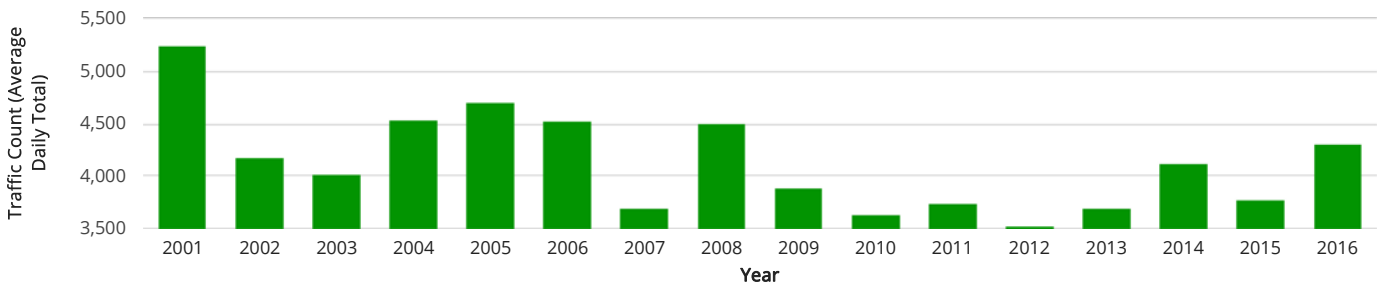
Download	KML	ESRI Geodatabase	ESRI Shapefile	Database
File:	(/Applications/Files/TrfcHist.kmz)	(/Applications/Files/TrfcHistFGDB.zip)	(/Applications/Files/TrfcHistSHP.zip)	(/Applications/Files/
Open	Google Earth	ArcGIS Explorer		MS Access o
With:	(https://earth.google.com/)	(http://www.esri.com/software/arcgis/explorer/index.html)		



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Dry Gap Pk - S of Jim Sterchi Rd (Station ID: 093M089)



[Download CSV](#)

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[Download Traffic History and Station Location \(CSV\)](#)

[Download Count Station GIS Shapefile with Traffic History \(ZIP\)](#)

Traffic Count Maps

PDF files showing MPC and TDOT counts at stations across Knox and Blount Counties are available for 2007-2014. Maps are 36" tall by 48" wide.

Blount County

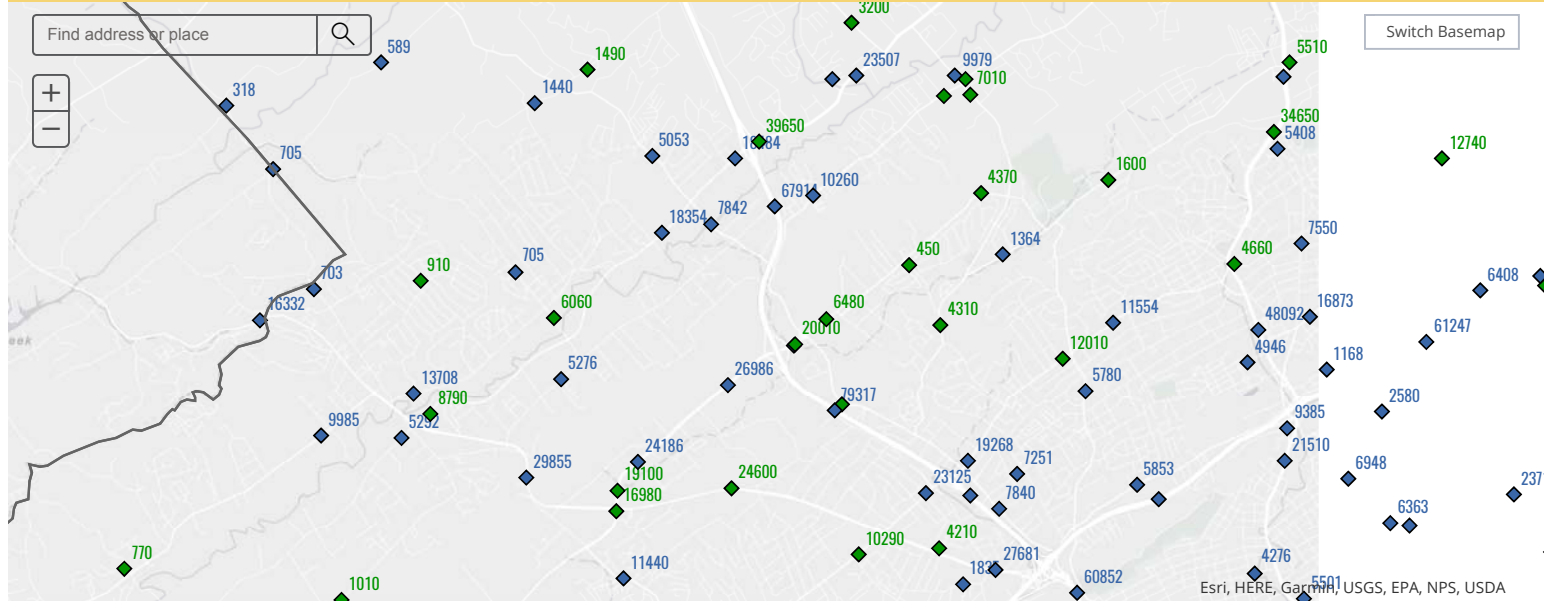
2014

Knox County

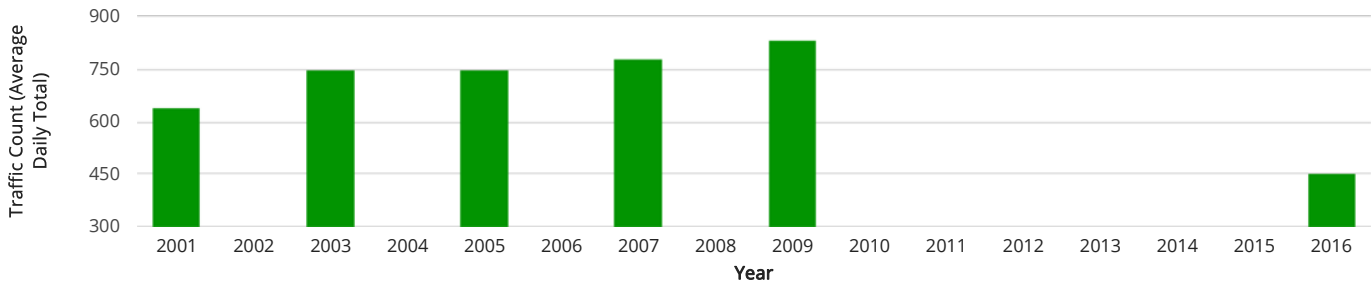
2014



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Jim Sterchi Rd - S of Dante Rd (Station ID: 093M324)



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Knoxville Region Traffic Count Program

The TPO conducts traffic counts at over 300 locations in Knox and Blount Counties. These annual counts supplement those collected by the Tennessee Department of Transportation at several thousand other locations across the 10-county region.

About the Counts

The traffic count data are given in the standard "Average Daily Traffic" format, which represents the volume of traffic, in both directions, at a particular location on an average day during that particular year. The average traffic is computed by taking the raw traffic count data that is collected usually over a 24-hour period and then adjusting it by factors to account for daily and seasonal variations.

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Traffic Count Maps

PDF files showing MPC and TDOT counts at stations across Knox and Blount Counties are available for 2007-2014. Maps are 36" tall by 48" wide.

Blount County

2014

Knox County

2014

**MUTCD TRAFFIC
SIGNAL WARRANT
EVALUATIONS**

INTERSECTION: Central Pike & Dry Gap Pike (2017)		PEDESTRIAN GAPS/HOUR : 28	
JOB NUMBER: 222906		ESTABLISHED SCHOOL CROSSING, MINIMUM 20 Xing (YES/NO): NO	
DATE: 10/09/2017		NEAREST SIGNALIZED INTERSECTION: 0	
85TH PERCENTILE SPEED: 41		IMPROVE PROGRESSION-PLATOONING (YES/NO): NO	
POPULATION: 350,000		MAJOR ROUTES (YES/NO): NO	
NUMBER OF APPROACHES: 3		WARRANTS IN 5 YRS (YES/NO): NO	
LANES ON MAIN STREET: 1		ALTERNATIVES TO A SIGNAL EXPLORED: YES	
MINOR STREET APPROACH LANES: 2		NUMBER OF ACCIDENTS: 0	
PEDESTRIANS: N/A		PEAK HOUR DELAY (VEH-HR): 0	
K-HOUR VOLUME (4-CONSECUTIVE 15MIN PERIODS): N/A		PROXIMITY OF RR ON MINOR APPROACH TO MAJOR STREET: 0	
MAJOR: 0		RAIL TRAFFIC FREQUENCY: 0	
0% MINOR: 0		MINOR APPROACH HIGH-OCCUPANCY BUSES : 0.0%	
EXISTING OR PROPOSED SIGNAL SYSTEM (YES/NO): N/A		TRACTOR-TRAILER PERCENTAGE 0.0%	

HOUR	MAIN STREET			MINOR STREET				COMBINATION WARRANT A&B	4-HOUR WARRANT 2	PEAK HOUR WARRANT 3B			
	MAIN STREET VOLUME	PERCENT OF WARRANT 1A	PERCENT OF WARRANT 1B	MINOR STREET VOLUME	MINIMUM VOLUME WARRANT 1A		INTERRUPTION WARRANT 1B			WARRANT 2	WARRANT 3B	WARRANT 3B	
		420	525		140	70							
24-1	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
1-2	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
2-3	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
3-4	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
4-5	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
5-6	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
6-7	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
7-8	517	123%	98%	277	198%	YES	396%	YES/NO	YES	171%	YES	100%	YES
8-9	563	134%	107%	301	215%	YES	430%	YES	YES	209%	YES	118%	YES
9-10	355	85%	68%	95	68%	NO	135%	NO	NO	41%	NO	26%	NO
10-11	355	85%	68%	107	76%	NO	152%	NO	NO	46%	NO	29%	NO
11-12	355	85%	68%	108	77%	NO	154%	NO	NO	46%	NO	30%	NO
12-13	355	85%	68%	119	85%	NO	169%	NO	NO	51%	NO	33%	NO
13-14	391	93%	74%	119	85%	NO	169%	NO	NO	55%	NO	35%	NO
14-15	426	101%	81%	116	83%	NO	166%	NO	YES	58%	NO	36%	NO
15-16	875	208%	167%	144	103%	YES	206%	YES	YES	180%	YES	103%	YES
16-17	887	211%	169%	132	94%	YES/NO	189%	YES	YES	165%	YES	96%	YES/NO
17-18	533	127%	101%	114	81%	NO	163%	YES	YES	73%	NO	42%	NO
18-19	426	101%	81%	140	100%	YES	200%	NO	YES	70%	NO	43%	NO
19-20	320	76%	61%	119	85%	NO	169%	NO	NO	47%	NO	31%	NO
20-21	284	68%	54%	97	69%	NO	139%	NO	NO	36%	NO	24%	NO
21-22	249	59%	47%	75	54%	NO	108%	NO	NO	26%	NO	18%	NO
22-23	178	42%	34%	54	38%	NO	77%	NO	NO	16%	NO	11%	NO
23-24	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO

WARRANT	WARRANT DESCRIPTION	WARRANT OBTAINED?	HOURS	>=90% HOURS	PRIORITY	
					POINTS	
SUMMARY	1 A	MINIMUM VOLUME:	NO	4	1	44
	B	INTERUPTION:	NO	4	1	40
	A & B	COMBINATION:	NO	7	N/A	63
	2	FOUR-HOUR:	YES	4	0	64
	3 A	PEAK HOUR DELAY:	N/A	N/A	N/A	0
	B	PEAK HOUR VOLUME:	YES	3	1	168
	4	<small>No data collected</small> MINIMUM PED. VOLUMES:	N/A	N/A	N/A	N/A
	5	SCHOOL CROSSING:	NO	N/A	N/A	0
	6	CORD. SIGNAL SYSTEM:	NO	N/A	N/A	0
7	ACCIDENT EXPERIENCE:	NO	9	N/A	0	
8	ROADWAY NETWORK:	NO	2	N/A	0	
9	INTERSECTION NEAR A GRADE CROSS	N/A	0	0	0	
PRIORITY VALUE					379	

INTERSECTION: Central Pike & Dry Gap Pike (2020 Background)	
JOB NUMBER: 222906	
DATE: 10/09/2017	
85TH PERCENTILE SPEED: 41	PEDESTRIAN GAPS/HOUR : 28
POPULATION: 350,000	ESTABLISHED SCHOOL CROSSING, MINIMUM 20 Xing (YES/NO): NO
	NEAREST SIGNALIZED INTERSECTION: 0
	IMPROVE PROGRESSION-PLATOONING (YES/NO): NO
NUMBER OF APPROACHES: 3	MAJOR ROUTES (YES/NO): NO
LANES ON MAIN STREET: 1	WARRANTS IN 5 YRS (YES/NO): NO
MINOR STREET APPROACH LANES: 2	
	ALTERNATIVES TO A SIGNAL EXPLORED: YES
PEDESTRIANS: N/A	NUMBER OF ACCIDENTS: 0
PER HOUR VOLUME (4-CONSECUTIVE 15MIN PERIODS) N/A	PEAK HOUR DELAY (VEH-HR): 0
MAJOR: 0	
0% MINOR: 0	PROXIMITY OF RR ON MINOR APPROACH TO MAJOR STREET: 0
	RAIL TRAFFIC FREQUENCY: 0
	MINOR APPROACH HIGH-OCCUPANCY BUSES : 0.0%
EXISTING OR PROPOSED SIGNAL SYSTEM (YES/NO): N/A	TRACTOR-TRAILER PERCENTAGE 0.0%

HOUR	MAIN STREET			MINOR STREET				COMBINATION WARRANT A&B	4-HOUR WARRANT 2		PEAK HOUR WARRANT 3B		
	MAIN STREET VOLUME	PERCENT OF WARRANT 1A	PERCENT OF WARRANT 1B	MINOR STREET VOLUME	MINIMUM VOLUME WARRANT 1A		INTERRUPTION WARRANT 1B		WARRANT 2	WARRANT 2	WARRANT 3B	WARRANT 3B	
		420	525		140	70							
24-1	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
1-2	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
2-3	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
3-4	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
4-5	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
5-6	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
6-7	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
7-8	573	137%	109%	307	219%	YES	439%	YES	YES	218%	YES	122%	YES
8-9	624	149%	119%	334	238%	YES	477%	YES	YES	270%	YES	146%	YES
9-10	394	94%	75%	105	75%	NO	150%	NO	NO	49%	NO	31%	NO
10-11	394	94%	75%	118	84%	NO	169%	NO	NO	55%	NO	35%	NO
11-12	394	94%	75%	119	85%	NO	171%	NO	NO	56%	NO	35%	NO
12-13	394	94%	75%	131	94%	YES/NO	188%	NO	NO	61%	NO	39%	NO
13-14	433	103%	82%	131	94%	YES/NO	188%	NO	YES	67%	NO	41%	NO
14-15	472	112%	90%	129	92%	YES/NO	184%	YES/NO	YES	72%	NO	43%	NO
15-16	970	231%	185%	160	114%	YES	228%	YES	YES	200%	YES	138%	YES
16-17	984	234%	187%	146	105%	YES	209%	YES	YES	183%	YES	130%	YES
17-18	591	141%	112%	126	90%	YES/NO	180%	YES	YES	94%	YES/NO	52%	NO
18-19	472	112%	90%	155	111%	YES	222%	YES/NO	YES	87%	NO	52%	NO
19-20	354	84%	67%	131	94%	NO	188%	NO	NO	56%	NO	36%	NO
20-21	315	75%	60%	108	77%	NO	154%	NO	NO	42%	NO	28%	NO
21-22	276	66%	52%	84	60%	NO	119%	NO	NO	30%	NO	20%	NO
22-23	197	47%	37%	60	43%	NO	85%	NO	NO	19%	NO	13%	NO
23-24	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO

WARRANT	WARRANT DESCRIPTION	WARRANT OBTAINED?	HOURS	>=90% HOURS	PRIORITY	
					POINTS	
SUMMARY	1 A	MINIMUM VOLUME:	NO	5	4	55
	B	INTERUPTION:	NO	5	2	50
	A & B	COMBINATION:	YES	8	N/A	72
	2	FOUR-HOUR:	YES	4	1	64
	3 A	PEAK HOUR DELAY:	N/A	N/A	N/A	0
	B	PEAK HOUR VOLUME:	YES	4	0	224
	4	<small>No data collected</small> MINIMUM PED. VOLUMES:	N/A	N/A	N/A	N/A
	5	SCHOOL CROSSING:	NO	N/A	N/A	0
	6	CORD. SIGNAL SYSTEM:	NO	N/A	N/A	0
7	ACCIDENT EXPERIENCE:	NO	12	N/A	0	
8	ROADWAY NETWORK:	NO	2	N/A	0	
9	INTERSECTION NEAR A GRADE CROSS	N/A	0	0	0	
PRIORITY VALUE					465	

INTERSECTION: Central Pike & Dry Gap Pike (2020 Background w Development)	
JOB NUMBER: 222906	
DATE: 10/09/2017	
85TH PERCENTILE SPEED: 41	PEDESTRIAN GAPS/HOUR : 28
POPULATION: 350,000	ESTABLISHED SCHOOL CROSSING, MINIMUM 20 Xing (YES/NO): NO
	NEAREST SIGNALIZED INTERSECTION: 0
	IMPROVE PROGRESSION-PLATOONING (YES/NO): NO
NUMBER OF APPROACHES: 3	MAJOR ROUTES (YES/NO): NO
LANES ON MAIN STREET: 1	WARRANTS IN 5 YRS (YES/NO): NO
MINOR STREET APPROACH LANES: 2	
	ALTERNATIVES TO A SIGNAL EXPLORED: YES
PEDESTRIANS: N/A	NUMBER OF ACCIDENTS: 0
4-HOUR VOLUME (4-CONSECUTIVE 15MIN PERIODS): N/A	PEAK HOUR DELAY (VEH-HR): 0
MAJOR: 0	
0% MINOR: 0	PROXIMITY OF RR ON MINOR APPROACH TO MAJOR STREET: 0
	RAIL TRAFFIC FREQUENCY: 0
	MINOR APPROACH HIGH-OCCUPANCY BUSES : 0.0%
EXISTING OR PROPOSED SIGNAL SYSTEM (YES/NO): N/A	TRACTOR-TRAILER PERCENTAGE 0.0%

HOUR	MAIN STREET			MINOR STREET				COMBINATION WARRANT A&B	4-HOUR WARRANT 2		PEAK HOUR WARRANT 3B		
	MAIN STREET VOLUME	PERCENT OF WARRANT 1A	PERCENT OF WARRANT 1B	MINOR STREET VOLUME	MINIMUM VOLUME WARRANT 1A		INTERRUPTION WARRANT 1B		WARRANT 2	WARRANT 3B			
		420	525		140	70							
24-1	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
1-2	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
2-3	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
3-4	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
4-5	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
5-6	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
6-7	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
7-8	587	140%	112%	359	257%	YES	513%	YES	YES	264%	YES	146%	YES
8-9	636	152%	121%	371	265%	YES	530%	YES	YES	310%	YES	166%	YES
9-10	407	97%	78%	129	92%	YES/NO	184%	NO	NO	62%	NO	39%	NO
10-11	407	97%	78%	137	98%	YES/NO	196%	NO	NO	66%	NO	41%	NO
11-12	411	98%	78%	138	99%	YES/NO	197%	NO	NO	67%	NO	42%	NO
12-13	414	99%	79%	151	108%	YES/NO	216%	NO	NO	74%	NO	46%	NO
13-14	453	108%	86%	151	108%	YES	216%	NO	YES	81%	NO	49%	NO
14-15	491	117%	94%	149	106%	YES	213%	YES/NO	YES	87%	NO	51%	NO
15-16	994	237%	189%	180	128%	YES	257%	YES	YES	225%	YES	163%	YES
16-17	1,016	242%	193%	168	120%	YES	240%	YES	YES	210%	YES	159%	YES
17-18	641	153%	122%	155	111%	YES	222%	YES	YES	131%	YES	70%	NO
18-19	518	123%	99%	191	137%	YES	273%	YES/NO	YES	119%	YES	69%	NO
19-20	393	94%	75%	161	115%	YES/NO	230%	NO	NO	75%	NO	47%	NO
20-21	350	83%	67%	129	92%	NO	184%	NO	NO	55%	NO	35%	NO
21-22	305	73%	58%	101	72%	NO	144%	NO	NO	39%	NO	26%	NO
22-23	221	53%	42%	73	52%	NO	104%	NO	NO	24%	NO	17%	NO
23-24	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO

WARRANT	WARRANT DESCRIPTION	WARRANT OBTAINED?	HOURS	>=90% HOURS	PRIORITY	
					POINTS	
SUMMARY	1 A	MINIMUM VOLUME:	YES	8	5	88
	B	INTERUPTION:	NO	5	2	50
	A & B	COMBINATION:	YES	8	N/A	72
	2	FOUR-HOUR:	YES	6	0	96
	3 A	PEAK HOUR DELAY:	N/A	N/A	N/A	0
	B	PEAK HOUR VOLUME:	YES	4	0	224
	4	<small>No data collected</small> MINIMUM PED. VOLUMES:	N/A	N/A	N/A	N/A
	5	SCHOOL CROSSING:	NO	N/A	N/A	0
	6	CORD. SIGNAL SYSTEM:	NO	N/A	N/A	0
7	ACCIDENT EXPERIENCE:	NO	14	N/A	0	
8	ROADWAY NETWORK:	NO	3	N/A	0	
9	INTERSECTION NEAR A GRADE CROSS	N/A	0	0	0	
PRIORITY VALUE					530	

CDM
Smith